Digitization of legume collections in National Herbarium & Botanic Garden and Establishment of linkage with genomics data for ascertaining role in the climate change

Thesis submitted in Partial Fulfilment for Requirement of Award of Degree of

DOCTORATE OF PHILOSOPHY

in

BOTANY

By

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This is to certify that the thesis entitled, "**Digitization of legume collections in National Herbarium & Botanic Garden and Establishment of linkage with genomics data for ascertaining role in the climate change**" submitted for the degree of Doctor of Philosophy in Botany, Department of Biological Sciences, Faculty of Science, Sam Higginbottom Institute of Agriculture, Technology and Sciences, is a bonafide research carried out by Ms. **Uma Singh**, ID number **12PHBOTA101**, under my guidance.

The experimental findings presented in this thesis are genuine and original to the best of my knowledge, the script of the thesis has been written by the candidate herself and no part of this thesis has been submitted for any other degree or diploma in any other university. The assistance and help received during the course of this investigation has been duly acknowledged.

The thesis is being forwarded for acceptance in partial fulfillment of the requirements for the award of the degree of **Doctor of Philosophy in Botany** of Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad.

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The R&D findings presented in this thesis are genuine and original to the best of my knowledge and the entire matter of the thesis has been written by the candidate herself and no part of the thesis has been submitted for any other degree or diploma in any other university. The assistance and help received during the course of this investigation has been duly acknowledged by the candidate.

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DECLARATION

This work entitled **"Digitization of legume collections in National Herbarium & Botanic Garden and Establishment of linkage with genomics data for ascertaining role in the climate change"** presented in this thesis embodies the original research work carried out at, CSIR-National Botanical Research Institute, Lucknow. This work has not been submitted in part or full for the award of any other degree of any other University.

Dated:
Place: (Uma Singh)

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CHAPTER - 1

INTRODUCTION

INTRODUCTION

The earthôs climate is changing very fast in human history. It is now well established that climate change may result in large-scale plant diversity loss. A dramatic shift in species distribution is reported due to climate change and this may results in species extinctions, especially across vulnerable ecosystems. According to various studies about 1.75 million species of organisms are known in world.About7-8% consisting of ca 127,000 species (i.e. 47,000 plants and 81,000 animals) are represented in India however, India occupies only 2.4% world land total. This great diversity is due to varied climate and topographies. India is one of the 12-mega diversity countries and one of the 12 primary centres of origin of cultivated plants in world and is rich in agricultural biodiversity.(Kumar & Sane 2003).

Legumes are the most economically important group of plants and hence selected for the present study. Let us discuss why Legumes chosen? Leguminosae (or Fabaceae) contains approximately 946 genera in 41 tribes in three subfamilies (Caesalpiniodeae, Mimosoideae and Papilionoideae) and about 18, 000 species. Legumes are widespread in all the continents as herbs, shrubs and trees. In purely quantative terms , the family lies in second place to cereals (Gramineae) in importance to man but in the number of diversity of uses of man, in contribution to the vegetation and agriculture of all continents (excluding Antarctica) and in biological diversity and interest, the family is second to none. Legumes are used to provide very many foods, as fodder, kindling, household materials, ornamentals, poisons, pharmaceutical sources and blood-testing reagents. Their root nodules make a major contribution to the worldôs nitrogen fixation and they contribute richly to some of botanyôs most remarkable observations, examples being the occurrence of phyto-haemagglutinins in seeds, and the rapid leaf-movements of some species.(Kumar & Sane 2003).

A pioneer and comprehensive account on the species diversity of legumes of India was published in J.D. Hookerôs (1876-1878 [ref. 1980]. The other publications used for compilation of this database for South Asia were Sanjappa (1992), Legumes of India [ref.2915], Ali (1973-1977), and Flora of Pakistan [ref. 1938, 2010, and 2021], Grierson & Long (1987). Flora of Bhutan [ref. 1947], ReizaKahtun (1987), Tree Legumes of Bangladesh [ref. 2921], Huq (1986), Plant Names of Bangladesh [ref. 2972], Kurz (1877), Florest Flora of British Burma [ref. 2110],,Hara &Willianms (1979), An Enumeration of the Flowering Plants of Nepal [ref. 2949}, Kostermans, Rudd et al. in Dassanayake et. Al. (1980-1996), A revised Handbook of the flora of Cetlon [refs. 1587, 1927, 1957, 2023, 3168], Fosber (1957), The Maldive Islands, Indian Ocean [ref. 3030] and Wills & Gardiner (1901-1902), The Botany of the Maldive Islands [ref. 30290], etc. besides all the other regional monographs, floras, journals, publications, Ph.D. thesis research, etc. available for the south Asian region for legumes and Phase I database contains information on accepted name, associated synonyms, global geography in South Asian countries - India (1561 species (77%)), Pakistan (691 species (34%)), Myanmar (607 species (30%)), Sri Lanka (512 species (25%)), Nepal (469 species (23%)), Bhutan (324 species (15%)), Bangladesh (255 species (12%)) and Maldives (45 species (2%)). Besides nomenclature and geography, the database contains information on life form details, conservation status, common names, description, economic uses etc. Thus database with recent legume taxonomy, distribution and descriptive data for legumes of South Asia, is unique in a level of detail and authenticity that cannot be found in any of the previously published sources from the South Asia region. ILDIS South Asia database is base line database and act as a core database for in upgrading taxonomy of legumes specimens of LWG herbarium and RET species in botanic gardens of India.

Plant specimenôs collection is an activity of taxonomists which they have done in past and they are doing today. Plant specimens are very important resource and hold primary data,

which is key to taxonomic, anatomical and gene sequencing material now-a-days of the various collections,type specimen are the most important specimens .Type specimens are considered as basic resource of particular plant upon which the botanist who names the species and publishes its description. (Maura & Flannery 2013).

Herbarium specimens are used in several ways viz. the first, herbaria as essential archives for documenting biodiversity; and hence are use only source which provides frequency and occurrence of a plant species (Joppa et al., 2011), the second, herbaria provides information on environmental change. Flowering plants are usually collected when they are in flowering because flowers help in identification of the species. For example if a flower is collected from a locality in a month, and a herbarium sheet of the same species, also in flower in the same area, but was collected 100 years ago in a month, then the data analysis may result as an evidence for impact of climate change (Primack et al., 2004) and the third, entomologists used herbarium specimens to find out when a particular species first invaded an area (Zangerl&Berenbaum, 2005). Recently, herbaria are also under focus from molecular biologists. Many plant specimens contain DNA that may be used in genetic studies. About 200 years old herbarium specimens have provided DNA, which could be sequenced (Andreasen et al., 2009). In addition to above, now a days, researchers are systematically preserving plant samples for use in sequencing.

Digitization of herbarium collections and its role in teaching historical biology: Electronic storage of specimens and sequence data and its access via the Internet, which allows for interesting comparative analysis that would have been difficultearlier. Digitization of specimens is a massive work and data on labels are more often digitized than images of specimens. On global level, the Global Biodiversity Information Facility (GBIF) has created a portal where almost 400 million records about species of all kinds are available electronically (GBIF, 2013). Databases are important resources of information and can serve

as virtual museums. There are several ways to put use digital herbaria into biology classes and some of there include (a) digital herbariumisheplful in investigating biodiversity, environmental change, and phenology (ecology courses), (b) students can also learn to use online plant checklists or local floras (taxonomy), (c) comparing specimens of species collected at different times or in different locations. It is also valuable for students to compare specimens with photographs of the same plant, and with illustrations. Each approach has merits and demerits in communicating information about a plant.

Botanic gardens: In contrary to herbarium specimens, botanic gardens are repository of living plants, and they are important sites of plant conservation as botanic gardens maintain plants outside their natural habitat (*ex situ* conservation) to tackle the significant global challenge that climate change presents for plant conservation it is essential to establish a long term monitoring programme of plant responses to environmental changes using species diversity of Indiaôs botanic gardens.

There are over 2,500 botanic gardens in the world, which posses the collection of plant species outside nature. In the wild, as many as 60,000 of these plant species may be threatened with genetic impoverishment or even be at the verge of extinction within the next 3-4 decades.

Rare, Endangered &Threatened (RET) Species:

A Rare species is a group of organisms that are very uncommon or scarce. Rarity depends on specific species being represented less than 10,000 individuals. An Endangered species is a population of organisms, with high risk of becoming extinct Threatened species are any species vulnerable to endangerment in the near future. (wikipedia.org)

A survey of literature reveals representation of data on Indian specimens not from Indian herbaria but from Other herbaria of the world .For example If we look at GBIF data

portal for *Indigoferatinctoria* then GBIF it reveals a total of 1891 records including collections from various herbaria .Thus there is no record for any Indian Herbaria in global database (Fig 30). In the present study our purpose todevelop software for digitization of herbarium collections. Data was collected on 10476 specimens of the National LWG Herbarium and digitized these collections using the new software. It is proposed to undertake value addition in relation to nomenclature, common names, Geography data , GPS data , geo reference data, digital maps , images , video and Genomics information for all legume specimens.(www.gbif.org).

Justifications:

Digitization of herbarium specimens is an important activity in view of international treaties:

Convention of Biological Diversity (CBD) for the first time stated that biological resources are the sovereign property of the countries in which they are found. CBD also stipulated that access to bio resources by outsiders can be made only after prior approved consent of the concerned and also with mutually agreed terms and conditions for equitable sharing of benefits accrued from the biodiversity accessed among the stakeholders.

Digitized herbarium is an on-line botanical information resource accessible via the web. It provides immediate access to the wealth of data associated with scientific plant specimens in a herbarium. Specimen records, of particular value in displaying geographic distribution, can be enhanced by images, descriptive text and identification tools using digitization tools.

Herbaria are used in various aspects in general and these are described as under:

1. **Basic Taxonomic Research:**

– help in taxonomy, systematics by way of,i) confirming theidentity of a plant or ascertain that it is new to scientific world, ii) material for morphological studies, iii) data for floristic studies, iv) repository of new collections, v) photographs

that can be used in lectures, web sites andvi) providing information for GIS studies of past and future collecting expeditions .

- Help in the documentation of flowering and fruiting times so as to facilitate ecological and phenological studies.
- facilitate studies on systematics, evolution, genetics and serve source of material for DNA analysis.
- assist in local flora studies by way of tracing the history of usage of binomials for a given species in a given area.

2. **Collections are the essential for biological research:**

- Herbarium specimens can be used to take out several things for biological research namely, a) pollen for taxonomic, systematic, and pollination studies as well as allergy studies, b) reference samples for the identification of plants eaten by animals, c) knowledge about plants grew with what other plants, d) material for microscopic observations, chemical analysis, e) data for studies of expeditions and explorers, f) reference material for identification of plants.
- label data and field notes can be used for development of databases using herbarium specimens.
- data on common names and local uses of plants.
- help in study of invasive species
- help in locating rare and extinct species by analysing studying the areas listed on herbarium label on herbarium specimen.

3. **Education & Training:**

- Herbarium specimens information can be used in teaching botany, taxonomy, ethnobotany, agriculture and forestry etc.
- herbarium specimens study exposes students for systematic research.
- Young staff can be trained for specimen handling, scanning, and databasing et

4. **Outreach**

- herbarium may serve as, i) an identification centre for providing information on plants of historical importance, and for forensic investigations, ii) provide material for the public, iii) interact with the local people to form volunteer groups for conservation efforts, iv) and maintain websites for dispersing specimen information, databases, images, public service information.

Objectives:

1. To collect, compile and create of database, primary data stored on legumes specimens in a national herbarium LWG.
2. To develop software for creation of databases on herbarium collections and execute value additions in relation to geography, nomenclature, common name, GPS data, georeferenced data, digital maps, images, videos and genomic information.
3. To study taxonomic nomenclature changes and upgrade the nomenclature of all legume specimens of national herbarium and so as to analyse the extent of taxonomic changes.
4. To develop web servers for making herbarium specimen data accessible globally via the internet.
5. To collect RET legumes from botanic gardens of India.
6. To develop a model for studying impact of climate change after comparing the past (from herbarium specimens) and present flowering period data (botanical gardens).

CHAPTER - 2

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Study of the related literature is an important pre-requisite for the execution of any research work. In this chapter an attempt has been made to study the existing literature relating to the present study.

The Indian economy is essentially biomass based and the taxonomists, the inventory keepers of the biological resources, are expected to play. Heywood dealt how the taxonomists of should make themselves relevant to societal needs. Floral diversity generates a no. of stakeholders who in turn need information and counsel for its sustainable utilization. Taxonomic databases are developed to provide the needed information to varied clients professionally and effectively. There is great activity around the world to build taxonomic databases concerning plant resources including virtual herbaria. Though some attempts were made towards electronic databases in India, they have not served fully the perceived needs of taxonomists nor generated any desired impact towards data accessibility to common men. Image database is important for numerous collections existed in various herbaria. The label data on the specimens is inadequate on old collections whereas collections from 1950ôs onwards have reasonable field data that can assess where from the collections were made. Now explorations are undertaken keeping GPS, so both latitudes and longitudes are accurately specified in each of the specimens. The obvious issue to be addressed in database design is how to uniform the variable data available in these sheets and simultaneously think of its integration for reference by users. More complications may be anticipated in case of specimens bearing more than one name. It is implied here that one should understand the specific issues inherent in taxonomic research before developing a consolidated database on floral resources. It is likely while developing a database that one may confront with numerous dilemmas with reference to names existing in the literature. As theBiodiversity database

resources: A global databases are described below: (http://www.biodiversity-biosecurity.auckland.ac.nz/en/about/irtda/IRTDA-resources.html).

GBIF: The Global Biodiversity Information Facility; OBIS: Ocean Biogeographic Information System; WoRMS: World Register of Marine Species; GISD: Global Invasive Species Database - ISSG; The IUCN Red List of Threatened Species; SCAR-MarBIN: SCAR-Marine Biodiversity Information Network; Sea Life Base; Fish Base; Avibase: The World Bird Database; Bird Life Data Zone; Amphibiaweb: Amphibia databsae; ARCTOS: Multi-Institution, Multi-Collection Museum Database; ANTWEB: Ants Database; Wiki Species: Free Species Directory; MaNIS Portals: The Mammal Networked Information System; Reefbase: A Global Information System for Coral Reefs; EMODNET Biology: Biology Portal of European Marine Observations and Data Network; EUNIS: European Nature Information System Database; EU-NOMEN: Pan-European Species Directories Infrastructure; Marine Species Identification Portal; BoL: Barcode of Life; EoL: Encyclopedia of Life; NCBI Gen Bank®: Public NIH genetic sequence database; BHL: Biodiversity Heritage Library consortium of natural history and botanical libraries; Paleobiology Database; Aquamaps: Online Computer-generated Maps for large Scale Species Distributions; MPA Global: A Database of the World's Marine Protected Areas; WDPA: World Database of Protected Areas; WDPA-Marine: World Database on Marine Protected Areas; CITES Species Database; FEOW: Freshwater Ecoregions of the World; GOOS: Global Ocean Observing System; WorldClim: Global Climate Data; CliMond: Global climatologies for bioclimatic modelling; Bio-Oracle: Ocean Rasters for Analysis of Climate Environment; APDRC: Asia-Pacific Data-Research Center; NODC: NOAA Oceanographic Data Center; NSIDC: National Snow & Ice Data Center; Ocean Color: NASA Oceancolor Portal; APRDC: In-situ oceanographic or atmospheric data from a Dapper OpenDap server; Glovis: USGS Earth Resource Observation and Science Center Data Portal; CCCMA:

Canadian Centre for Climate Modelling and Analysis; ARGOS: Worldwide tracking and environmental monitoring by satellite; ZOOTAXA: A mega-journal for zoological taxonomists in the world; VLIZ Flanders Marine Institute Database Page.(http://www.biodiversity-biosecurity.auckland.ac.nz/en/about/irtda/IRTDA-resources.html)

NCBI: The National Center for Biotechnology Information (NCBI) advances science and health by providing access to biomedical and genomic information. (https://www.ncbi.nlm.nih.gov/).

ILDIS:ILDIS is an international project, which maintains a database of plants in the family Fabaceae (Leguminosae) and provides information on leguminous plants. The ILDIS checklist is also linked to the Catalogue of Life.(http://www.ildis.org/).

Integrated Taxonomic Information System: The Integrated Taxonomic Information System (ITIS) is an American partnership of federal agencies designed to provide information on the taxonomy of biological species. (https://en.wikipedia.org/wiki/Integrated_Taxonomic_Information_System).

IOPI Global Plant Checklist: The International Organization for Plant Information (IOPI) produces a database of all vascular plant species and other products such as a World Flora. The checklist presently holds over 200,000 names and implements the advanced potential taxon concept. (http://www.catalogueoflife.org/col/details/database/id/16).

The Plant List*:* The Plant List is an index of plant species. It aims to be comprehensive for species of Vascular plant and of Bryophytes (mosses and liverworts). The Plant List provides the accepted and its synonyms species. Around 20% of names are unresolved indicating (http://www.theplantlist.org/).

Herbarium databases: The Gray Herbarium Index of New World Plant Names, provide an online database of the names and associated basic bibliographical details of all vascular plants.

This site provides access to those specimen records and images available digitally through the Herbarium Catalogue. The Herbarium at the Royal Botanic Gardens Kew houses with 7 million specimens, collected from all around the world. (http://apps.kew.org/herbcat/navigator.do).

Australia's Virtual Herbarium (AVH): Australia's major herbaria house over 6 million plant, algae and fungi specimens. The collecting information stored with these specimens provides the most complete picture of the distribution of Australia's flora to date. AVH is an online resource that provides immediate access to this invaluable information.When the AVH databasing project began in 2001, only a small proportion of the botanical specimens held by the major Australian herbaria had been databased. Now, over 80 per cent of the specimens housed in Australian herbaria are available online. Specimen data can be viewed on-screen as a map or in a table, and can be downloaded in a number of formats. (https://www.rbg.vic.gov.au/science/herbarium-and-resources/online-databases).

The Global Biodiversity Information Facility: GBIF is aninternational organisation that focuses on making scientific data onbiodiversityavailable via theInternetusingweb services. Many institutions from around the world provide the data. GBIF's information architecture makes these data accessible and searchable through a single portal. Data available through the GBIF portal are primarily distribution data on plants, animals, fungi, and microbes for the world, and scientific names data. (http://www.gbif.org/what-is-gbif).

India with only 2.4% of the land area, accounts for 7-8% of the recorded species of the world primarily due to diverse ecological and altitudinal conditions. This part of the world is a home about 1,01,649vascular plants species of which 19,371 species are endemic to this region and 5447 species are reported to be endangered. Out of the 34 biodiversity hotspots of the world, four hotspots namely Himalayas, Indo-Burma, Mountains of South China and Western Ghats and Sri Lanka are existing in this region which together harbor about 41,415 species of which 16,709 are endemic to these hotspots. India and China are also recognized as two of the seventeen-mega diversity centres of the world.Herbaria, being the repositories of plants, provide the basis for an analytical study of the vegetation of a region for evolving strategies for effective conservation and sustainable utilization. It is possible that herbaria provides the source for learning the Meteria Medica of the local people, a knowledge which might have evolved by the local people practicing for thousands of years. The discovery of new active principles from the plant resources draws immediate attention to herbaria where the specimens could be seen for recognition so as to identify specimens in nature for collection, utilization and further research. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

In view of the above, one of the basics of the countries rich in biodiversity is to preserve the existing herbarium specimens and the knowledge contained in them and also to enhance the collections so that basic information gets created. The collections of specimens should also be accompanied with ample and accurate field data and additional information on various aspects including the knowledge associated with the genetic resource of the region. As long as the Convention of Biological Diversity (CBD) is mandatory, acceptance among the signatory countries (having recognized herbaria) there is urgent need to develop linkages among the countries at inter-institutional and interdisciplinary levels: Since a herbarium is one of the foremost components which provides information in order to conserve

the biological diversity of any country, international agencies, well developed national organizations may help strengthening regional, infrastructure facilities, capacity building and dissemination of the knowledge. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

There are approximately 3.9 million recognized herbaria in the world today, with about 10,000 associated curators and biodiversity specialists. Collectively the world's herbaria contain an estimated 350,000,000 specimens for the past 400 years. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

India and its neighbouring countries namely Afghanistan, Bangladesh, Bhutan, Maldives, Myanmar, Nepal, Pakistan, People's Republic of China, and Sri Lanka have over 14 million herbarium specimens with elements new to science as types over 50 thousand. India stands 19th in position among the herbaria of the world for the repository of over 3.5 million specimens representing more than 23 thousand type specimens. Interestingly, except on a common web site and in bound pages of *Index Herbariorum* being published by New York Botanical Garden, USA supporting/collaborating/ coordinating viewpoint of various herbaria does not appear accessible. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

An insight of repository of herbaria of India and other countries shows that several herbaria have same area of floristic exploration and representation of specimens. Even in country such as People's Republic of China over 80 herbaria have common field of contribution, 45 herbaria of India reveal common area of jurisdiction particularly that of different educational institutions. It may be perhaps due to certain objective behind the development of a herbarium. Thus it becomes important to develop linkages to avoid duplication of the subject, site and objectives for meeting the common goal, it will also save

time and energy. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

More herbaria should be established in the various locations of this region of the world to house local collections and the holdings in the existing ones augmented for a better assessment of the region's plant resources in order to help resource management, which is needed more than ever before in the present environmental crisis. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

There are 94 herbaria has been present in in India Acronyms with asterisk indicate that these herbaria are recognized by the International Association for Plant Taxonomy (IAPT), New York Botanical Garden, USA and are published in the *INDEX HERBARIORUM,* an index of herbaria of the world. Out of 94 herbariain India 59 are recognized.(http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx).

Sasyabharathi: Sasyabharathi aims at consolidation of published floras from Southern India and opens through a title page ñDistribution, Taxonomy & Diversity of Plants of South Indiaò followed by second screen with 6 modules, óPolitical Boundaryô, óGridwise Searchô, óBiotic Zone Searchô, óThematic Mapsô óImagesô and óTextform Searchô which facilitate data access of usersô choice. The ótextform searchô enables one to look in for species through common names and conventional taxonomic hierarchy. An comprehensive list of 800 languages/regions is used to search for desired species based on common names. This is a favoured facility. The images account for 2676 species and some are similar to live specimens to establish natural identities. Some genera have poor representation and poor quality images. The compilers have used data from ca 200 regional/sub-regional floras and from the Flora of British India. The concept of synonymy is treated very differently and the compilers chose to adopt highly unconventional categories such as correct, synonym, probably correct, probably synonym and undecided and the last three do not exist in

taxonomic literature. Misapplication of names based on wrong identities mentioned in floras also needs some verification before inclusion. All these facts discussed in greater detail earlier. (http://www.bsienvis.nic.in/Database/Catalogue_Indian_Herbaria_20496.aspx)

It is seen that few herbaria has digitized the specimens including TBGRI (http://www.jntbgri.res.in/), IIM (http://www.iiim.res.in) and these contains only level data and scan images only.

In the present study a new software has been developed using PHP and 10476 legume specimens from a national herbaria has been digitized and using level data and specimen images and value additions with respect to nomenclature, common names, Geography data, GPS data, geo reference data, digital maps, images, video and gnomic information for specimens and digitization at this scale has not been done so far in any herbarium from India.

CHAPTER - 3

METHODS & METHODOLOGY

METHODS AND METHODOLOGY

CSIR-NBRI herbarium was established in 1953 and is now internationally known with its acronym LWG and has been recognised as National Repository for Indian flora by National Biodiversity Authority of India and it has now been given the status of ñNational Facilityò in CSIR system. CSIR-NBRI herbarium contains about 300000 specimens belonging to Algae (2350), Bryophytes (15241), Pteridophytes (5350), Carpological collections (16000), Higher Plants (100977), Lichens (149500).

In the present study 10476specimens belonging to family Leguminosae were studied and primary data was collected. New Data Dictionary and Data Structures were created and new software was developed for digitization of data on herbarium specimens. Taxonomical studies were carried out and Taxonomy was upgraded for all species. RET Legume species were growing in botanic gardens of India were studied and analytical tools for impact of Climate Change was described. Methodologies are discussed below a new module.

1.Digitization of herbarium specimens: Data on Herbarium Specimen labelled data containing information on Family name, genus, species, author, data of collection, collection, field number was collected for Leguminosae family from Accession register and a database of 10483 records entered into .xls file. Thereafter data was validated using primary data i.e. Herbarium Specimens..

2. Validation of Accession Data : It is observed that Accession data was containing several errors and hence accession data was edited after adopting the following methods :

Step 1: Data creation using the herbarium specimen accession register: Prepared a excel file of registered data.Originalxls. file contains 10476 accessions with Column A- S.No., Column B- Accession No., Column C- family name, Column D- Genus name, Column E-

Species name, Column F- Author name, Column G-collection date, Column H-Collector, Column I-Field no.

The following method was opted for correcting the data.

- Additional column were created for entering the correction next to the relevant column and ôEditedô name given to this column so that we can compare the original and updated data.
- Sorted the file on the bases of accession and cross checked the accessions numbers along with family and genus.
- Finally sorted the file on alphabetical order and fill blank family name and text marked in RED colour.
- Alternate family name were corrected and made uniform by adding both the names in the following families (Leguminosae-Caesalpiniaceae, Leguminosae-Papilionaceae, Leguminosae-Mimosaceae.
- Corrected genus and add new genus in the column Edit genera and marked it RED colour.
- See image for genus which is not identified note on remark.
- Made a copy of the file resort it family wise so that similar family names come together.
- Resort it and add the column next to the Edit genera. Randomly check for correctness.
- Family name mentioned as ñUò were changed to actual family name after checking corresponding genera.

- Applied filter, to sort out redundancies i.e. duplicate family names (which formed due to an extra space or changes in formatting of cell etc.).
- Sorted genus name column containing edited genera so as to finally correct all the genera in another column after comparing the genera from previous column.
- Correction done in genera & Family names which were wrongly spell and coloured it with RED.
- This file was copied and all the duplicate /irrelevant columns were deleted.
- A file prepared after merging cabinet wise editing of images data obtained.
- Correction done for dates, Latitude, longitude &Altitude,cabinetNo.
- Corrected geographical data on the basis of location, district, state, country and continent.
- Check the status of editing with the image.
- Explore possibility of inserting image editing into main file.
- Records of family leguminosae i.e.10476 make a separate file for uploading into the server.
- Additional fields were created in software i.e. Cabinet No., Remarks, Habit, Root, Stem, Leaves, Inflorescence, Flower, Fruit, Flowering & Fruiting

Step 2: Scanning of herbarium specimens and creation of Images:

Herbarium specimens were scanned using the scanner model no. HP Scanjet N9120 and images were captured on the computer and stored as .jpeg file .The jpeg file was saved to the

name of accession no. Make a directory for all the scanned images. A total 10476 Herbarium Specimens of legumes were scanned and stored on to the hard disk of computer. Scanned images were uploaded into the server by using upload mechanism in HILWeb software. Scanned images of specimens stored in a herbarium cabinet were maintained for example herbarium cabinet no. 1 containing 709 images, 5 no. cabinet contained 709 images and following this pattern about 10476 were uploaded.

Step 3: Collection of live & video images of plant: Living the video images were collected from fields after using mobile camera and image are stored in the directory. Live images are stored in .jpeg format and video images are stored in .mp4 format. Maximum file size was to be not exceeding more than 180 MB. Live & video are uploaded according to accession no.

Step 4: Development of HIL Web Software:

3. Data Dictionary: Data Dictionary is created for understanding the important parameters covered in present study in Table 1. Data dictionary includes details of data items required for digitization of herbarium specimen data. Data dictionary enables users to understand the definitions and scope of various data items.

Table 1: Data Dictionary

Sl. No.	Field Name	Description
1.	Family	In biological classification, family (Latin :familia) is a taxonomic rank. Other well-known ranks are life, domain, kingdom, phylum, class, order, genus and species, with family fitting between order and genus. As for the other well-known ranks, there is the option of an immediately lower rank, indicated by the prefix sub-:

subfamily (Latin :subfamilia) a taxonomic unit, a taxon, in that rank. In that case the plural is families (Latin familiae)

Example : Walnuts and hickories belong to the Juglandaceae, or walnut family.

2. Genus — A genus (plural genera) is a grouping in the classification of living organisms having one or more related and morphologically similar species. In the common binomial nomenclature, the name of an organism is composed of two parts: its genus (always capitalized) and a species modified. An example is Homo sapiens, the name for the human species which belongs to the genus Homo.

3. Species — In biology, a species is one of the basic units of biological classification and a taxonomic rank. A species is often defined as a group of organisms capable of interbreeding and producing fertile offspring. While in many cases this definition is adequate, more precise or differing measures are often used, such as similarity of DNA, morphology or ecological niche. Presence of specific locally adapted traits may further subdivide species into subspecies.

4. Subspecies — A group of similar plants or animals that is smaller than a SPECIES. A subspecies is the taxon immediately subordinate to a species. Members of one subspecies differ morphologically but sometimes only genetically from members of other subspecies of

		the species.
5.	Variety	A variety is a recognized division of species in botany, next below the rank of subspecies, varieties are usually the result of selective breeding and diverge from the parent species or subspecies in relatively minor ways.
6.	Author	The Author of the scientific name of a taxon is the person or team who first makes the name available by using it in a scientific publication with a description of the taxon to which it applies.
7.	Common Name	The local name given to a particular species of a plant, as opposed to the scientific latin or greek name, which is used universally. The common names of plants often vary from region to region.
8.	Country	A country is a geographical region considered to be the physical territory of a sovereign state, or of a smaller, or former, political division within a geographical region. Usually, but not always, a country coincides with a sovereign territory and is associated with a state, nation or government.
9.	State	State commonly refers to either the present state of a system or entity, or to a governed entity or sub entity such as a nation or province.
10.	District	A division of territory, a defined portion of a state, town or city etc., made for administrative, electoral or other purposes; as a congressional district, judicial district, land district, school district etc.

11.	Geographical Distribution	Geographical Distribution is the natural arrangements of animals and plants in particular regions or districts.
12.	Altitude	Altitude is the angular distance north or south of the earth's equator, measured in degrees along a meridian, as on a map or globe.
13.	Latitude	The geographical latitude (abbreviation : Lat, ū , or phi) of a point on the Earth's surface is the angle between the equatorial plane and a line that passes through that point and is normal to the surface of a reference ellipsoid which approximates the shape of the Earth. This line passes a few kilometers away from the center of the Earth except at the poles and the equator where it passes through Earth's center.
14.	Longitude	The Longitude (abbreviation : Long. ॐ, or lambda) of a point on the Earth's surface is the angle east or west from a reference meridian to another meridian that passes through that point. All meridians are halves of great ellipses (often improperly called great circles), which converge at the north and south poles.
15.	Degree	A degree (in full, a degree of arc, arc degree, or arcdegree), usually denoted by ^{0} (the degree symbol), is a measurement of plane angle, representing $^1/_{360}$ of a full rotation; one degree is equivalent to Ø/180 radians. It is not an SI unit, but can be used with the SI system via the aforementioned Ø/180 radians conversion. When that angle is with respect to a reference meridian, it indicates a location along a great circle of a sphere,

		such as Earth (see Geographic coordinate system), Mars, or the celestial sphere.
16.	Minute	A minute is a unit of measurement of time or of angle. The minute is a unit of time equal to 1/60th of an hour or 60 seconds. In the UTC time scale, a minute occasionally has 59 or 61 seconds; see leap second. The minute is not an SI unit; however, it is accepted for use with SI units. The symbol for minute or minutes is min.
17.	Second	The second is also called unit of time, was defined originally as the fraction 1/86 400 of the mean solar day.
18.	Flowering Time	Flowering Time is the period of greatest prosperity or productivity to produce or yield flowers.
20.	Habit	Habit usually describes the general appearance, growth form, or architecture of a plant.
21.	Herb	A Herb is a plant lacking a permanent woody stem. Herb is valued for flavor, scent, or other qualities and used in cooking, as medicines, and for spiritual purposes.
22.	Shrub	A shrub woody plant of relatively low height, having several stems arising from the base and lacking a single trunk; a bush.
23.	Tree	A tree is perennial woody plant. It is most often defined as a woody plant that has many secondary branches supported clear of the ground on a single main stem or trunk with clear apical

		dominance.
24.	Habitat	A habitat (which is Latin for "it inhabits") is an ecological or environmental area that is inhabited by a particular species of animal, plant or other type of organism. It is the natural environment in which an organism lives, or the physical environment that surrounds (influences and is utilized by) a species population.
25.	Ecological Conditions	Ecological conditions define all the necessary environmental conditions for the growth of plant or organism. It includes light conditions, mineral nutrients, Suboptimal temperature, Biomass, Soil pH, water medium, Soil moisture etc. for the growth of plant.
26.	Soil	Soil is the thin layer on the surface of the Earth on which the living beings of the earth survive since it is the layer of materials in which plants have their roots. Soil is made up of many things like weathered rock particles and decayed plant and animal matter. Since soil is made up of such diverse materials like broken down rock particles and organic material, it can be classified into various types, though based on the size of the particles it contains.
27.	Sandy Soil	This type has the biggest particles and the size of the particles does determine the degree of aeration and drainage that the soil allows. It is granular and consists of rock and mineral particles that are very small. Therefore, the texture is gritty and sandy soil is formed by the disintegration and weathering of rocks such as

limestone, granite, quartz and shale.

28. Silty Soil — Silty soil is considered to be one of the most fertile of soils. It can occur in nature as soil or as suspended sediment in water column of a water body on the surface of the earth. It is composed of minerals like Quartz and fine organic particles. It is granular like sandy soil but it has more nutrients than sandy soil and it also offers better drainage.

29. Clay Soil — Clay is a kind of material that occurs naturally and consists of very fine grained material with very less air spaces, that is the reason it is difficult to work with since the drainage in this soil is low, most of the time there is a chance of water logging and harm to the roots of the plant. Clay soil becomes very heavy when wet and if cultivation has to be done, organic fertilizers have to be added. Clay soil is formed after years of rock disintegration and weathering. It is also formed as sedimentary deposits after the rock is weathered, eroded and transported.

30. Loamy Soil — This soil consists of sand, silt and clay to some extent. It is considered to be the perfect soil. The texture is gritty and retains water very easily, yet the drainage is well. There are various kinds of loamy soil ranging from fertile to very muddy and thick sod. Yet out of all the different kinds of soil loamy soil is the ideal for cultivation.

31. Peaty Soil — This kind of soil is basically formed by the accumulation of dead and decayed organic matter; it naturally contains much more

		organic matter than most of the soils. It is generally found in marshy areas. Now the decomposition of the organic matter in Peaty soil is blocked by the acidity of the soil. This kind of soil is formed in wet climate. Though the soil is rich in organic matter, nutrients present are fewer in this soil type than any other type.
32.	Chalky Soil	Chalky soil is very alkaline in nature and consists of a large number of stones. The fertility of this kind of soil depends on the depth of the soil that is on the bed of chalk. This kind of soil is prone to dryness and in summers it is a poor choice for plantation, as the plants would need much more watering and fertilizing than on any other type of soil. Chalky soil, apart from being dry also blocks the nutritional elements for the plants like Iron and Magnesium.
33.	GPS Data	The Global Positioning System (GPS) is a space-based global navigation satellite system (GNSS) that provides reliable location and time information in all weather and at all times and anywhere on or near the Earth when and where there is an unobstructed line of sight to four or more GPS satellites. It is maintained by the United States government and is freely accessible by anyone with a GPS receiver.
34.	Map	A map is a visual representation of an area and a symbolic depiction highlighting relationships between elements of that space such as objects, regions and themes.

35.	Descriptors	An element or term that has the function of describing, identifying or indexing, in particular.
36.	Root	The usually underground portion of a plant that lacks buds, leaves or nodes and serves as support, draws minerals and water from the surrounding soil, and sometimes stores food.
37.	Stem	A stem could be any shoot, either the main primary shoot or one produced by growth of an axillary bud. A branch is always a shoot produced by growth of an axillary bud. Either could be above ground, such as the typical stem of a tomato plant, or below ground, such as rhizomes or corms.
38.	Bud	In botany, a bud is an undeveloped or embryonic shoot and normally occurs in the axil of leaf or at the tip of the stem. Once formed, a bud may remain for some time in a dormant condition, or it may from a shoot immediately.
39.	Leaf	Leaf is usually green, flattened, lateral structure attached to a stem and functioning as a principal organ of photosynthesis and transpiration in most plants.
40.	Inflorescence	Cluster of flowers on one or a series of branches, which together make a large showy blossom. Categories depend on the arrangement of flowers on an elongated main axis (peduncle) or on sub-branches from time the main axis, and on the timing and position of flowering. In determinate inflorescences, the youngest flowers are at the bottom or outside (e.g. onion flowers). In

		indeterminate inflorescences, the youngest flowers are at the top or in the center (e.g., snapdragon, lily of the valley, and Astilbe flowers). Other indeterminate inflorescences are the dangling male and female catkins of oak trees, the spike of barley, and the flat head (capitulum) of the dandelion.
41.	Flower	Flower is the reproductive structure of some seed-bearing plants, characteristically having either specialized male or female organs or both male and female organs, such as stamens and a pistil, enclosed in an outer envelope of petals and sepals.
42.	Fruit	A fruit is a part of the flowering plant that derives from specific tissues of the flower, mainly one or more ovaries.
43.	Seed	A seed is small embryonic plant enclosed in a covering called the seed coat, usually with some stored food. It is the product of the ripened ovule of gymnosperm and angiosperm plants which occurs after fertilization and some growth within the mother plant. It can develop into a new plant under the proper conditions; fertilized and mature ovule.
44.	Image	An image (from Latin imago) is an artifact, for example a two-dimensional picture that has a similar appearance to some subject--usually a physical object or a person. A digital image is composed of {pixels} arranged in a rectangular array with a certain height and width. Each pixel may consist of one or more {bit}s of information, representing the brightness of the image at that point and possibly including colour information encoded as

{RGB} triples. {Images} are usually taken from the real world via a {digital camera}, {frame grabber} or {scanner}; or they may be generated by computer, e.g. by {ray tracing} software.

45. Photograph — Photograph is representation of a person or scene in the form of a print or transparent slide; recorded by a camera on light - sensitive material and Photography is the science which relates to the action of light on sensitive bodies in the production of pictures and the fixation of images.

46. Still Image — Non-moving visual information such as graphs, drawings, pictures, or video frames not processed by the video CODEC portion of the VTU. This differs from freeze-frame images which are processed by the video CODEC portion of the VTU.

47. Video — Video is the technology of electronically capturing, recording, processing, storing, transmitting and reconstructing a sequence of still images representing scenes in motion.

48. Uses of Plant

1. AS FOOD - Our daily diet includes rice, wheat, Corn, Pulses etc. among other things. These are the major source of energy.

    - Rice (Oryzasativa) is starch - rich food, eaten after boiling and also converted into parched rice, beaten rice or rice flakes and puffed rice. All of them are obtained from plants, alongwith rice and wheat and corn crops such as legumes and potatoes are staples in most people's diets.

They are also sources of some of our beverages such as wine, coffee and tea.

- Wheat (Triticumaestivum) is most widely cultivated and staple food in most part of world. In India wheat flour is used for making chapaties and variety of other preparations like loaf - bread, biscuits and breakfast foods.
- Corn (Zea mays) is nutritious with high percentage of easily digestible carbohydrates, fats and proteins. In India corn flour is used for making chapati.
- Some pulses like Urd (Vigna mungo) and Moong (Vigna radiate) are major source of protein.

2. AS VEGETABLES AND FRUITS - Some plants like Potato (Solanum tuberosum), Tamato (Lycopersiconesculentum), Gourd (Lagenariasiceraria) etc. are mainly used in human diet as vegetable and some fruits like Grapes (Vitisvinifera), Mango (Mangiferaindica), Pomegranage (Punicagranatum) etc are source of vitamins and fibers.
3. AS MEDICINES : It is estimated by the World Health Organization that approximately 75-80% of the world's population uses plant medicines either in part or entirely. Most of the homoeopathic and all allopathic drugs are obtained from the plants. Some common plants are :

- Datura (Daturoinnoxia) : is source of scopolamine, a cerebral depressant useful in agitated or maniacal

conditions.

- Neem (Azadirachtaindica) : Its bark used in skin trouble, leaves considered as antiseptic, neem oil is also used in some medicated soap.
- Holy Basil (Ocimum sanctum) : used as diaphoretic in malarial fever and whole plant is useful in bronchitis, asthma, catarrh, in diseases of heart and blood, cholera, leucoderma etc.

4. Data Structure: Data structure details are provided in Table 2. Data structures are defined and data is stored using Maria db database.

Table 2: Data Structure

Field	Length
1. NOMENCLATURE	
1.1 Accepted Name	
Domain	Char 30
Author	Char 30
Super Kingdom	Char 30
Author	Char 30
Kingdom	Char 30
Author	Char 30
Sub Kingdom	Char 30
Author	Char 30
Phylum	Char 30
Author	Char 30
Super Class	Char 30
Author	Char 30
Class	Char 30
Author	Char 30
Sub- Class	Char 30

Author	Char 30
Super Order	Char 30
Author	Char 30
Order	Char 30
Author	Char 30
Sub-Order	Char 30
Author	Char 30
Super Family	Char 30
Author	Char 30
Family	Char 30
Author	Char 30
Sub-Family	Char 30
Author	Char 30
Genus	Char 30
Author	Char 30
Species	Char 30
Author	Char 30
Subspecies	Char 30
Author	Char 40
Variety	Char 30
Author	Char 40

1.2 Synonyms Name

Domain	Char 30
Author	Char 30
Super Kingdom	Char 30
Author	Char 30
Kingdom	Char 30
Author	Char 30
Sub Kingdom	Char 30
Author	Char 30
Phylum	Char 30
Author	Char 30
Super Class	Char 30
Author	Char 30

Class	Char 30
Author	Char 30
Sub- Class	Char 30
Author	Char 30
Super Order	Char 30
Author	Char 30
Order	Char 30
Author	Char 30
Sub-Order	Char 30
Author	Char 30
Super Family	Char 30
Author	Char 30
Family	Char 30
Author	Char 30
Sub-Family	Char 30
Author	Char 30
Genus	Char 30
Author	Char 30
Species	Char 30
Author	Char 30
Subspecies	Char 30
Author	Char 40
Variety	Char 30
Author	Char 40

1.3 Common Name

Common Name	Char 30
Language	Char 30

2.GEOGRAPHICAL DISTRIBUTION

2.1 Occurrence

Country	Char 25
State	Char 25
District	Char 25
Location	Char 25

2.1.2 Altitude		Char 8
2.1.2 Latitude		Text 1
Degree		d 8
Minutes		d 8
Second		d 8
2.1.3 Longitude		Text 1
Degree		d 8
Minutes		d 8
Second		d 8
2.2 G.P.S. Data		
2.3 Map Data		.jpg path
2.4 Flowering Time		
Year		d 8
Month		Char 20
Week		Text 3
2.5 Habit		
Herb		Text 35
Shrub		Text 35
Tree		Text 35
2.6 Habitat		
pH		Text 2
Temperature		d 8
Moisture (Soil)		Text 5
Light Conditions		Text 3
Mineral Nutrition		Text 10
2.7 Soil Type		Char 25
3. DESCRIPTORS		
3.1 Root		
a. Root parts		
Root cap		Y/N
Root hair		Y/N
Secondary root		Y/N
b. Root types		
Adventitious	Y/N	

Primary	Y/N
Secondary	Y/N
c. Root structural types	Char 25
d. Image	.jpg path
3.2Stem	
a. Stem parts	
Bark	Char 25
Pith	Char 25
Wood	Char 25
b. Stem types	Char 40
c. Stem structural types	Char 25
d. Image	.jpg path
3.3 Buds	
a. Buds parts	Char 25
b. Bud types	Char 40
c. Bud structural types	Char 25
d. Image	.jpg path
3.4 Leaf	
a. Leaf parts	Char 50
b. Leaf types	Char 50
c. Leaf structural types	Char 25
d. Petiole and Petiolule structural types	Char 40
e. Stipule and Stipel types	Char 40
d. Image	.jpg path
3.5Inflorescence	
a. Inflorescence parts	Char 25
b. Inflorescence types	Char 50
c. Image	.jpg path
3.6Flower	
a. Flower parts	Char 50
b. Flower types	Char 30
c. Image	.jpg path
3.7Fruit	
a. Fruit parts	Char 30

b. Fruit structural types	Char 50
c. Image	.jpg path
3.8 Seed	
a. Seed parts	Char 25
b. Seed types	Char 40
c. Embryo parts	Char 25
d. Embryo types	Char 25
e. Image	.jpg path
4. IMAGE	
Photo	.jpg path
Video	.dat, .mp3, .avi path
Still Image	.jpg path

Step 5: Features of HILWeb software:

In the present study HIL web software was developed and back end database is developed using MariaDB(My SQL replacement).The main feature of this database which make it popular worldwide and these include (a) it is an open source, flexible and supports Linus, UNIX & Windows operating system (b) It is reliable and guarantees around the clock uptime, (c) It offer one of the most powerful transactional database engines, (d) It provide high performance, (e) It is suitable for high traffic websites, (f) It offers exceptional security features that ensure absolute data protection i.e. only authorised users can enter data into database server, (g) It offer comprehensive support for stored procedure, triggers, functions, views, cursors, SOL and more, (h) It has self-management features like automatic space expansion; auto-restart & dynamic configuration changes etc and these feature provide quick start capability.

Frontend has been development using the PHP. PHP has several features which include (i) PHP codes are executed faster than ASP because PHP codes runs in its own memory space

while ASP codes in use overhead server, (ii) PHP tools are open source, (iii) PHP require Linus Server for hosting while ASP codes needs IIS installed on Windows server and thus hosting with PHP is less expensive, (iv) PHP has features to connect several databases used in MY SQL, however, for using ASP MY-SQL should be purchased and (v) PHP codes can be kept as encrypted using Ion encryption software.

Step 6 : Structure of database file.

Data stored in following files:

[1] Main (Central)

[2] Supporting Master Files

[2.1] Classification Master files Family, SubFamily, Section, HigerTaxon, Genus, Sepithet, SubSepithet, Variety, SubVariety, Forma, SubForma.

[2.2] Geographical Support Files Location, District, State, Country, Continent

[2.3] Herbarium supporting Master Files Collector, Biome, BioticEffect, Exposure, LifeForm, Lithology, MoistureRegime, Slope, SoilType and Substrate

[2.4] Image related support files Quality

[3] Administration files like Access, Passwd&LastReadWrite

```
+----------------------+
| Tables_in_plant      |
+----------------------+
| Access               |
| Aspect               |
| Author               |
| Biome                |
| BioticEffect         |
| CollectionData       |
```

| Collector |

| Continent |

| Country |

| District |

| Exposure |

| Family |

| Forma |

| Genus |

| Herbarium |

| HigherTaxon |

| LifeForm |

| Lithology |

| Location |

| MoistureRegime |

| Passwd |

| Quality |

| Region |

| Section |

| Sepithet |

| Slope |

| SoilType |

| Species |

| State |

| SubFamily |

| SubForma |

```
| SubGenus            |
| SubSepithet         |
| SubVariety          |
| Substrate           |
| Variety             |
+---------------------+
77 rows in set (0.00 sec)
CREATE TABLE `Aspect` (
  `AspectId` smallint(6) NOT NULL DEFAULT '0',
  `Aspect` varchar(25) NOT NULL DEFAULT '',
  `AspectDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`AspectId`),
  UNIQUE KEY `Aspect` (`Aspect`)
)
CREATE TABLE `Author` (
  `AuthorId` int(6) NOT NULL DEFAULT '0',
  `Author` varchar(60) NOT NULL DEFAULT '',
  `AuthorDV` varchar(80) NOT NULL DEFAULT '',
  `Country` int(6) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  `Login` varchar(10) DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`AuthorId`),
```

```
  UNIQUE KEY `Author` (`Author`)
)
CREATE TABLE `Biome` (
  `BiomeId` smallint(6) NOT NULL DEFAULT '0',
  `Biome` varchar(25) NOT NULL DEFAULT '',
  `BiomeDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`BiomeId`),
  UNIQUE KEY `Biome` (`Biome`)
)
CREATE TABLE `BioticEffect` (
  `BioticEffectId` smallint(6) NOT NULL DEFAULT '0',
  `BioticEffect` varchar(25) NOT NULL DEFAULT '',
  `BioticEffectDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`BioticEffectId`),
  UNIQUE KEY `BioticEffect` (`BioticEffect`)
)
CREATE TABLE `CollectionData` (
  `CDId` int(6) NOT NULL DEFAULT '0',
  `GSId` int(6) NOT NULL DEFAULT '0',
  `CollectionLocation` int(6) NOT NULL DEFAULT '0',
  `Seed` varchar(5) NOT NULL DEFAULT '',
```

```
  `SeedCount` int(6) NOT NULL DEFAULT '0',
  `VegetativePropagules` varchar(5) NOT NULL DEFAULT '',
  `VegetativePropagulesCount` int(6) NOT NULL DEFAULT '0',
  `Seeldings` varchar(5) NOT NULL DEFAULT '',
  `SeeldingsCount` int(6) NOT NULL DEFAULT '0',
  `Login` varchar(10) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`CDId`)
)
CREATE TABLE `Collector` (
  `CollectorId` int(6) NOT NULL DEFAULT '0',
  `Collector` varchar(60) NOT NULL DEFAULT '',
  `CollectorDV` varchar(80) NOT NULL DEFAULT '',
  `Country` int(6) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  `Login` varchar(10) DEFAULT '',
  PRIMARY KEY (`CollectorId`),
  UNIQUE KEY `Collector` (`Collector`)
)
CREATE TABLE `Continent` (
  `ContinentId` int(6) NOT NULL DEFAULT '0',
  `Continent` varchar(25) NOT NULL DEFAULT '',
  `ContinentDV` varchar(50) NOT NULL DEFAULT '',
  `ContinentMap` int(6) DEFAULT '0',
  `Date` datetime DEFAULT NULL,
```

```
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`ContinentId`),
  UNIQUE KEY `Continent_2` (`Continent`),
  UNIQUE KEY `Continent` (`Continent`)
)
CREATE TABLE `Country` (
  `CountryId` int(6) NOT NULL DEFAULT '0',
  `CountryCode` varchar(10) DEFAULT NULL,
  `Continent` int(6) NOT NULL DEFAULT '0',
  `Country` varchar(35) NOT NULL DEFAULT '',
  `CountryDV` varchar(50) NOT NULL DEFAULT '',
  `Region` int(6) DEFAULT '0',
  `CountryMap` int(6) DEFAULT '0',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`CountryId`),
  UNIQUE KEY `Country_2` (`Country`),
  UNIQUE KEY `Country` (`Country`)
)
CREATE TABLE `District` (
  `DistrictId` int(6) NOT NULL DEFAULT '0',
  `DistrictCode` varchar(5) NOT NULL DEFAULT '',
  `State` int(6) NOT NULL DEFAULT '0',
```

```
  `District` varchar(25) NOT NULL DEFAULT '',
  `DistrictDV` varchar(50) NOT NULL DEFAULT '',
  `DistrictMap` int(6) DEFAULT NULL,
  `LongitudeDegree` int(3) DEFAULT NULL,
  `LongitudeMinute` int(3) DEFAULT NULL,
  `LongitudeSecond` int(3) DEFAULT NULL,
  `LongitudeDir` char(1) NOT NULL DEFAULT '',
  `LatitudeDegree` int(3) DEFAULT NULL,
  `LatitudeMinute` int(3) DEFAULT NULL,
  `LatitudeSecond` int(3) DEFAULT NULL,
  `LatitudeDir` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `Login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`DistrictId`),
  UNIQUE KEY `DistrictCode` (`DistrictCode`),
  UNIQUE KEY `District` (`District`)
)
CREATE TABLE `Exposure` (
  `ExposureId` smallint(6) NOT NULL DEFAULT '0',
  `Exposure` varchar(25) NOT NULL DEFAULT '',
  `ExposureDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`ExposureId`),
```

```
  UNIQUE KEY `Exposure` (`Exposure`)
)
CREATE TABLE `Family` (
  `FamilyId` int(6) NOT NULL DEFAULT '0',
  `Family` varchar(25) NOT NULL DEFAULT '',
  `FamilyDV` varchar(50) NOT NULL DEFAULT '',
  `Herbarium` char(1) DEFAULT '',
  `HerbariumAcronym` varchar(15) DEFAULT '',
  `ConName` char(1) DEFAULT '',
  `ICBN` char(1) DEFAULT '',
  `AShaw` char(1) DEFAULT '',
  `Author` int(6) DEFAULT '0',
  `Div` char(1) DEFAULT '',
  `SDiv` char(1) DEFAULT '',
  `KEW` char(1) DEFAULT '',
  `Year` varchar(4) DEFAULT '',
  `GenTotal` int(6) DEFAULT '0',
  `SalmNo` int(6) DEFAULT '0',
  `EalmNo` int(6) DEFAULT '0',
  `IsHerbariumFamily` char(1) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  PRIMARY KEY (`FamilyId`),
  UNIQUE KEY `Family` (`Family`)
```

```
)
CREATE TABLE `Forma` (
  `FormaId` int(6) NOT NULL DEFAULT '0',
  `Forma` varchar(25) NOT NULL DEFAULT '',
  `FormaDV` varchar(50) NOT NULL DEFAULT '',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumForma` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`FormaId`),
  UNIQUE KEY `Forma` (`Forma`)
)
CREATE TABLE `Genus` (
  `GenusId` int(6) NOT NULL DEFAULT '0',
  `Genus` varchar(25) NOT NULL DEFAULT '',
  `GenusDV` varchar(50) NOT NULL DEFAULT '',
  `HigherTaxon` int(6) NOT NULL DEFAULT '0',
  `SubFamily` int(6) DEFAULT '0',
  `Family` int(6) NOT NULL DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `Notes` varchar(15) DEFAULT '',
  `GenusDetail` varchar(50) NOT NULL DEFAULT '',
  `IsHerbariumGenus` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
```

```
  `Login` varchar(10) DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  UNIQUE KEY `GenusId` (`GenusId`),
  UNIQUE KEY `Genus` (`Genus`,`HigherTaxon`,`SubFamily`,`Family`,`Author`)
)
CREATE TABLE `Herbarium` (
  `HerbariumId` int(6) NOT NULL DEFAULT '0',
  `AccessionNo` varchar(20) NOT NULL DEFAULT '',
  `AccessionDate` date NOT NULL DEFAULT '0000-00-00',
  `FamilyH` int(6) NOT NULL DEFAULT '0',
  `SubFamilyH` int(6) NOT NULL DEFAULT '0',
  `GenusH` int(6) NOT NULL DEFAULT '0',
  `SpeciesH` int(6) NOT NULL DEFAULT '0',
  `SpAuthorH` int(6) NOT NULL DEFAULT '0',
  `SubSpeciesH` int(6) NOT NULL DEFAULT '0',
  `SubSpAuthorH` int(6) NOT NULL DEFAULT '0',
  `VarietyH` int(6) NOT NULL DEFAULT '0',
  `VarietyAuthorH` int(6) NOT NULL DEFAULT '0',
  `FormaH` int(6) NOT NULL DEFAULT '0',
  `FormaAuthorH` int(6) NOT NULL DEFAULT '0',
  `SpeciesTypeH` char(1) NOT NULL DEFAULT '',
  `Collector` int(6) NOT NULL DEFAULT '0',
  `CollectionDate` date NOT NULL DEFAULT '0000-00-00',
  `FieldNo` int(6) NOT NULL DEFAULT '0',
  `HerbariumOrgCode` varchar(10) NOT NULL DEFAULT '',
```

```
`SpecimenState` varchar(20) NOT NULL DEFAULT '',
`HerbariumCabinetNo` varchar(20) NOT NULL DEFAULT '',
`Determinavit` varchar(20) NOT NULL DEFAULT '',
`DetDate` date NOT NULL DEFAULT '0000-00-00',
`Locality` varchar(50) NOT NULL DEFAULT '',
`LongDeg` char(3) NOT NULL DEFAULT '',
`LongMin` char(2) NOT NULL DEFAULT '',
`LongSec` char(2) NOT NULL DEFAULT '',
`LongDir` char(1) NOT NULL DEFAULT '',
`LatDeg` char(2) NOT NULL DEFAULT '',
`LatMin` char(2) NOT NULL DEFAULT '',
`LatSec` char(2) NOT NULL DEFAULT '',
`LatDir` char(1) NOT NULL DEFAULT '',
`Altitude` varchar(6) NOT NULL DEFAULT '',
`District` int(6) NOT NULL DEFAULT '0',
`Region` int(6) NOT NULL DEFAULT '0',
`State` int(6) NOT NULL DEFAULT '0',
`Country` int(6) NOT NULL DEFAULT '0',
`Continent` int(6) NOT NULL DEFAULT '0',
`Location` int(6) NOT NULL DEFAULT '0',
`Biome` int(6) NOT NULL DEFAULT '0',
`Habitat` text NOT NULL,
`Habit` text NOT NULL,
`Substrate` int(6) NOT NULL DEFAULT '0',
`MoistureRegime` int(6) NOT NULL DEFAULT '0',
```

```
`SoilType` int(6) NOT NULL DEFAULT '0',
`Lithology` int(6) NOT NULL DEFAULT '0',
`Exposure` int(6) NOT NULL DEFAULT '0',
`Slope` int(6) NOT NULL DEFAULT '0',
`Aspect` int(6) NOT NULL DEFAULT '0',
`BioticEffect` int(6) NOT NULL DEFAULT '0',
`LifeForm` int(6) NOT NULL DEFAULT '0',
`Root` text NOT NULL,
`Stem` text NOT NULL,
`Leaf` text NOT NULL,
`Flower` text NOT NULL,
`Inflorescence` text NOT NULL,
`Fruit` text NOT NULL,
`Flowering` text NOT NULL,
`Fruiting` text NOT NULL,
`PlantHeight` int(6) NOT NULL DEFAULT '0',
`Voucher` int(6) NOT NULL DEFAULT '0',
`SpeciesLink` int(6) NOT NULL DEFAULT '0',
`SpeciesName` varchar(200) NOT NULL DEFAULT '',
`SpeciesNameH` varchar(200) NOT NULL DEFAULT '',
`Family` int(6) NOT NULL DEFAULT '0',
`SubFamily` int(6) NOT NULL DEFAULT '0',
`Genus` int(6) NOT NULL DEFAULT '0',
`Species` int(6) NOT NULL DEFAULT '0',
`SpAuthor` int(6) NOT NULL DEFAULT '0',
```

```
`SubSpecies`int(6) NOT NULL DEFAULT '0',
`SubSpAuthor` int(6) NOT NULL DEFAULT '0',
`Variety` int(6) NOT NULL DEFAULT '0',
`VarietyAuthor` int(6) NOT NULL DEFAULT '0',
`Forma` int(6) NOT NULL DEFAULT '0',
`FormaAuthor` int(6) NOT NULL DEFAULT '0',
`ImageLink` varchar(15) NOT NULL DEFAULT '',
`ImageQuality` int(6) NOT NULL DEFAULT '0',
`LiveImageLink` varchar(15) NOT NULL DEFAULT '',
`LiveImageQuality` int(6) NOT NULL DEFAULT '0',
`VideoLink` varchar(15) NOT NULL DEFAULT '',
`VideoQuality` int(6) NOT NULL DEFAULT '0',
`NFamily` varchar(50) NOT NULL DEFAULT '',
`NSubFamily` varchar(50) NOT NULL DEFAULT '',
`NGenus` varchar(50) NOT NULL DEFAULT '',
`spNo` int(8) NOT NULL DEFAULT '0',
`sspNo` int(8) NOT NULL DEFAULT '0',
`varNo` int(8) NOT NULL DEFAULT '0',
`forNo` int(8) NOT NULL DEFAULT '0',
`Nsp` varchar(50) NOT NULL DEFAULT '',
`NspAuth` varchar(50) NOT NULL DEFAULT '',
`Nssp` varchar(50) NOT NULL DEFAULT '',
`NsspAuth` varchar(50) NOT NULL DEFAULT '',
`Nvariety` varchar(50) NOT NULL DEFAULT '',
`NvarietyAuth` varchar(50) NOT NULL DEFAULT '',
```

```
  `Nforma` varchar(50) NOT NULL DEFAULT '',
  `NformaAuth` varchar(50) NOT NULL DEFAULT '',
  `Remark` text NOT NULL DEFAULT '',
  `Login` varchar(10) NOT NULL DEFAULT '',
  `Date` datetime NOT NULL DEFAULT '0000-00-00 00:00:00',
  PRIMARY KEY (`HerbariumId`),
  UNIQUE KEY `AccessionNo` (`AccessionNo`)
)

CREATE TABLE `HigherTaxon` (
  `HigherTaxonId` int(6) NOT NULL DEFAULT '0',
  `HigherTaxon` varchar(25) NOT NULL DEFAULT '',
  `HigherTaxonDV` varchar(50) DEFAULT '',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumHigherTaxon` char(1) NOT NULL DEFAULT '',
  `Notes` varchar(15) DEFAULT '',
  `SubFamily` int(6) DEFAULT '0',
  `Family` int(6) NOT NULL DEFAULT '0',
  `Date` datetime DEFAULT NULL,
  `Login` varchar(10) DEFAULT '',
  PRIMARY KEY (`HigherTaxonId`),
  UNIQUE KEY `HigherTaxon` (`HigherTaxon`,`Author`,`SubFamily`,`Family`)
)
CREATE TABLE `LifeForm` (
  `LifeFormId` smallint(6) NOT NULL DEFAULT '0',
```

```
  `LifeForm` varchar(25) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`LifeFormId`),
  UNIQUE KEY `LifeForm` (`LifeForm`)
)
CREATE TABLE `Lithology` (
  `LithologyId` smallint(6) NOT NULL DEFAULT '0',
  `Lithology` varchar(25) NOT NULL DEFAULT '',
  `LithologyDV` varchar(50) DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`LithologyId`),
  UNIQUE KEY `Lithology` (`Lithology`)
)
CREATE TABLE `Location` (
  `LocationId` int(6) NOT NULL DEFAULT '0',
  `Location` varchar(35) NOT NULL DEFAULT '',
  `LocationDV` varchar(50) NOT NULL DEFAULT '',
  `Continent` int(6) DEFAULT '0',
  `Country` int(6) DEFAULT '0',
  `State` int(6) DEFAULT '0',
  `District` int(6) DEFAULT '0',
  `DistrictRegion` int(6) DEFAULT '0',
  `Latitude` char(1) DEFAULT '',
```

```
  `LatitudeDegree` int(3) DEFAULT '0',
  `LatitudeMinute` int(2) DEFAULT '0',
  `Longitude` char(1) DEFAULT '',
  `LongitudeDegree` int(3) DEFAULT '0',
  `LongitudeMinute` int(2) DEFAULT '0',
  `DistrictCode` varchar(5) DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`LocationId`),
  UNIQUE KEY `Location` (`Location`)
)
CREATE TABLE `MoistureRegime` (
  `MoistureRegimeId` smallint(6) NOT NULL DEFAULT '0',
  `MoistureRegime` varchar(25) NOT NULL DEFAULT '',
  `MoistureRegimeDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`MoistureRegimeId`),
  UNIQUE KEY `MoistureRegime` (`MoistureRegime`)
)
CREATE TABLE `Quality` (
  `QualityId` int(6) NOT NULL DEFAULT '0',
  `Quality` varchar(25) NOT NULL DEFAULT '',
  `Date` datetime NOT NULL DEFAULT '0000-00-00 00:00:00',
```

```
  `login` varchar(10) NOT NULL DEFAULT '',
  PRIMARY KEY (`QualityId`),
  UNIQUE KEY `Quality` (`Quality`)
)
CREATE TABLE `Region` (
  `RegionId` int(6) NOT NULL DEFAULT '0',
  `Region` varchar(50) NOT NULL DEFAULT '',
  `RegionDV` varchar(100) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  PRIMARY KEY (`RegionId`),
  UNIQUE KEY `Region` (`Region`)
)
CREATE TABLE `Section` (
  `SectionId` int(6) NOT NULL DEFAULT '0',
  `Section` varchar(25) NOT NULL DEFAULT '',
  `SectionDV` varchar(50) NOT NULL DEFAULT '',
  `Genus` int(6) NOT NULL DEFAULT '0',
  `SubGenus` int(6) DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumSection` char(1) NOT NULL DEFAULT '',
  `Notes` varchar(15) DEFAULT '',
  `NotesDV` varchar(50) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
```

```
  PRIMARY KEY (`SectionId`),
  UNIQUE KEY `Section` (`Section`)
)
CREATE TABLE `Sepithet` (
  `SepithetId` int(6) NOT NULL DEFAULT '0',
  `Sepithet` varchar(25) NOT NULL DEFAULT '',
  `SepithetDV` varchar(50) NOT NULL DEFAULT '',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumSepithet` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`SepithetId`),
  UNIQUE KEY `SEpithet` (`Sepithet`)
)
CREATE TABLE `Slope` (
  `SlopeId` smallint(6) NOT NULL DEFAULT '0',
  `Slope` varchar(25) NOT NULL DEFAULT '',
  `SlopeDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`SlopeId`),
  UNIQUE KEY `Slope` (`Slope`)
)
CREATE TABLE `SoilType` (
```

```
  `SoilTypeId` smallint(6) NOT NULL DEFAULT '0',
  `SoilType` varchar(25) NOT NULL DEFAULT '',
  `SoilTypeDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`SoilTypeId`),
  UNIQUE KEY `SoilType` (`SoilType`)
)
CREATE TABLE `Species` (
  `SpeciesId` int(6) NOT NULL DEFAULT '0',
  `SpeciesName` varchar(150) NOT NULL DEFAULT '',
  `SpeciesNameDV` varchar(250) NOT NULL DEFAULT '',
  `SpeciesType` char(1) NOT NULL DEFAULT '',
  `Family` int(6) NOT NULL DEFAULT '0',
  `SubFamily` int(6) DEFAULT '0',
  `HigherTaxon` int(6) NOT NULL DEFAULT '0',
  `Genus` int(6) DEFAULT '0',
  `SubGenus` int(6) DEFAULT '0',
  `Section` int(6) DEFAULT '0',
  `Species` int(6) DEFAULT '0',
  `SpeciesAuthor` int(6) DEFAULT '0',
  `SubSpecies`int(6) DEFAULT '0',
  `SubSpeciesAuthor` int(6) DEFAULT '0',
  `Variety` int(6) DEFAULT '0',
  `VarietyAuthor` int(6) DEFAULT '0',
```

```
  `SubVariety` int(6) DEFAULT '0',
  `SubVarietyAuthor` int(6) DEFAULT '0',
  `Forma` int(6) DEFAULT '0',
  `FormaAuthor` int(6) DEFAULT '0',
  `SubForma` int(6) DEFAULT '0',
  `SubFormaAuthor` int(6) DEFAULT '0',
  `ConservationStatus` char(1) DEFAULT '',
  `SpeciesImage` varchar(50) DEFAULT '',
  `Video` varchar(50) DEFAULT '',
  `SpeciesLink` int(6) DEFAULT '0',
  `OrthographicVariance` char(1) DEFAULT '',
  `RightSpecies` int(6) DEFAULT '0',
  `Herbarium` varchar(50) DEFAULT '',
  `SpeciesDetail` varchar(200) DEFAULT '',
  `SpeciesDetail0` varchar(50) DEFAULT '',
  `CorrectSpecies` int(6) NOT NULL DEFAULT '0',
  `IsWrong` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `Login` varchar(10) DEFAULT '',
  PRIMARY KEY (`SpeciesId`)
)
CREATE TABLE `State` (
  `StateId` int(6) NOT NULL DEFAULT '0',
  `StateCode` varchar(10) DEFAULT NULL,
  `Country` int(6) NOT NULL DEFAULT '0',
```

```
  `State` varchar(35) NOT NULL DEFAULT '',
  `StateDV` varchar(50) NOT NULL DEFAULT '',
  `StateMap` int(6) DEFAULT '0',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`StateId`),
  UNIQUE KEY `State` (`State`)
)
CREATE TABLE `SubFamily` (
  `SubFamilyId` int(6) NOT NULL DEFAULT '0',
  `SubFamily` varchar(25) NOT NULL DEFAULT '',
  `SubFamilyDV` varchar(50) NOT NULL DEFAULT '',
  `Family` int(6) NOT NULL DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `Notes` varchar(15) DEFAULT '',
  `NotesDV` varchar(25) NOT NULL DEFAULT '',
  `IsHerbariumSubFamily` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`SubFamilyId`),
  UNIQUE KEY `SubFamily` (`SubFamily`)
)
CREATE TABLE `SubForma` (
```

```
  `SubFormaId` int(6) NOT NULL DEFAULT '0',
  `SubForma` varchar(25) NOT NULL DEFAULT '',
  `SubFormaDV` varchar(50) NOT NULL DEFAULT '',
  `Forma` int(6) NOT NULL DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumSubForma` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`SubFormaId`),
  UNIQUE KEY `SubForma` (`SubForma`)
)
CREATE TABLE `SubGenus` (
  `SubGenusId` int(6) NOT NULL DEFAULT '0',
  `SubGenus` varchar(25) NOT NULL DEFAULT '',
  `SubGenusDV` varchar(50) NOT NULL DEFAULT '',
  `Genus` int(6) NOT NULL DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumSubGenus` char(1) NOT NULL DEFAULT '',
  `Notes` varchar(15) DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`SubGenusId`),
  UNIQUE KEY `SubGenus` (`SubGenus`)
```

```
)
CREATE TABLE `SubSepithet` (
  `SubSepithetId` int(6) NOT NULL DEFAULT '0',
  `SubSepithet` varchar(25) DEFAULT '',
  `SubSepithetDV` varchar(50) NOT NULL DEFAULT '',
  `Sepithet` int(6) DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumSubSepithet` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`SubSepithetId`),
  UNIQUE KEY `SubSEpithet` (`SubSepithet`)
)
CREATE TABLE `SubVariety` (
  `SubVarietyId` int(6) NOT NULL DEFAULT '0',
  `SubVariety` varchar(25) NOT NULL DEFAULT '',
  `SubVarietyDV` varchar(50) NOT NULL DEFAULT '',
  `Variety` int(6) NOT NULL DEFAULT '0',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumSubVariety` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `Login` varchar(10) DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`SubVarietyId`),
```

```
  UNIQUE KEY `SubVariety` (`SubVariety`)
)
CREATE TABLE `Substrate` (
  `SubstrateId` smallint(6) NOT NULL DEFAULT '0',
  `Substrate` varchar(25) NOT NULL DEFAULT '',
  `SubstrateDV` varchar(50) NOT NULL DEFAULT '',
  `Login` varchar(10) DEFAULT NULL,
  `Date` datetime DEFAULT NULL,
  PRIMARY KEY (`SubstrateId`),
  UNIQUE KEY `Substrate` (`Substrate`)
)

CREATE TABLE `Variety` (
  `VarietyId` int(6) NOT NULL DEFAULT '0',
  `Variety` varchar(25) NOT NULL DEFAULT '',
  `VarietyDV` varchar(50) NOT NULL DEFAULT '',
  `Author` int(6) DEFAULT '0',
  `IsHerbariumVariety` char(1) NOT NULL DEFAULT '',
  `Date` datetime DEFAULT NULL,
  `login` varchar(10) NOT NULL DEFAULT '',
  `NewId` int(6) NOT NULL DEFAULT '0',
  PRIMARY KEY (`VarietyId`),
  UNIQUE KEY `Variety` (`Variety`)
)
```

CHAPTER - 4

RESULT & DISCUSSIONS

RESULTS& DISCUSSION

In the present study 10477 accessions were digitized and they were belonging to sub families Caesalpiniodeae (1580), Mimosoideae (1264) and Papilionoideae (7633). The nomenclature of 10477 Species was studied and upgraded.

The analytical software was developed and hosted as a web server (HILWeb) and following is result was obtained.

Herbarium specimen contains information on label on the following parameter only Family,Genus,Species,Author,Date of collection, Collector, Field No., Notes. In the present study following were preformed:

1. **Value additions to label data:**
    - Recent nomenclature changes
    - Description of species
    - Geography Coordinates and GPS data, distribution maps.
    - Genomics data
    - Heavy metal accumulation data
    - Economic importance- Food and medicinal value legumes.

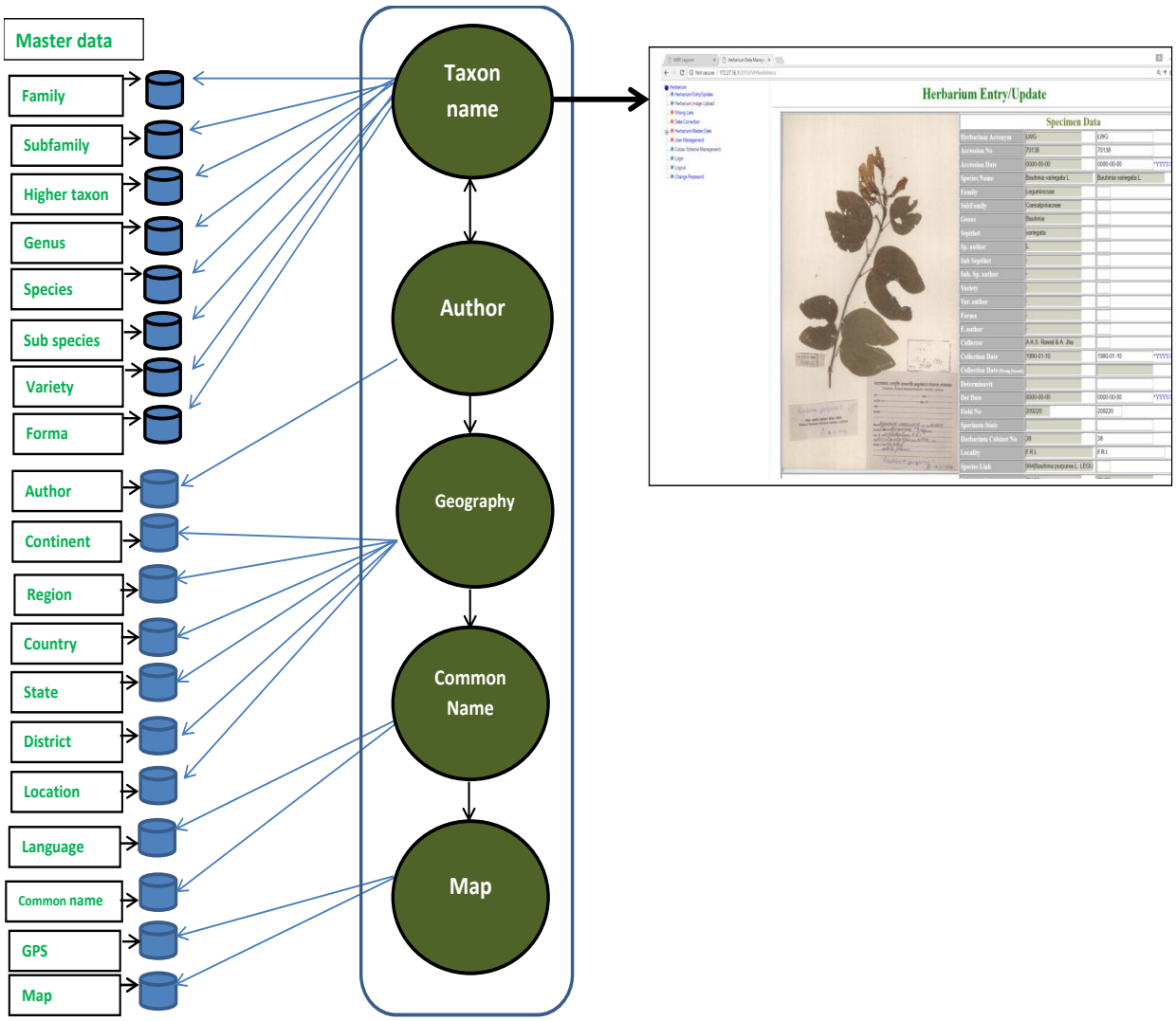

Fig 1: Schematic model show data entry mechanism of herbarium specimen data - Label data

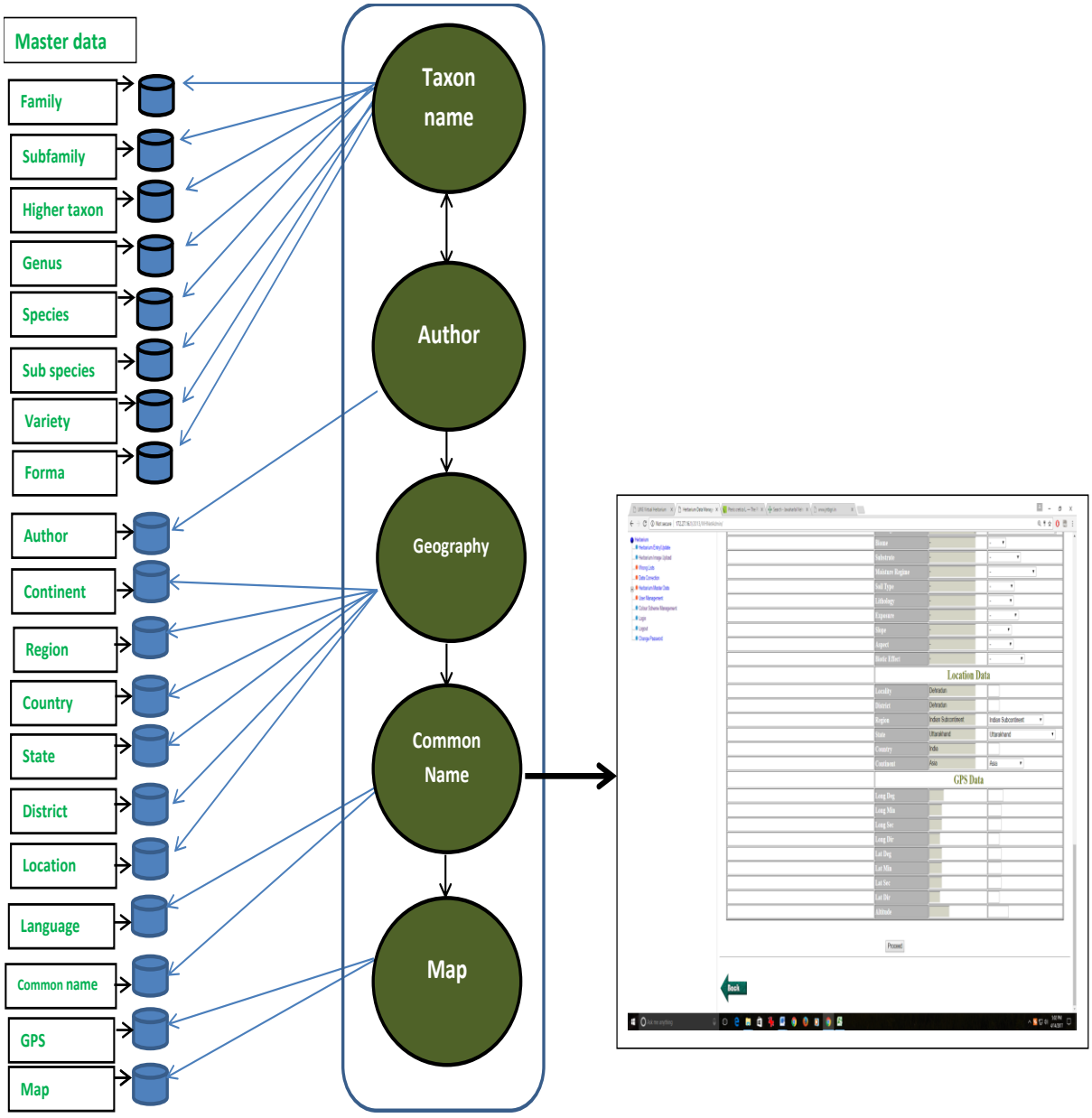

Fig 2: Schematic model show data entry mechanism of herbarium specimen data – Common Name

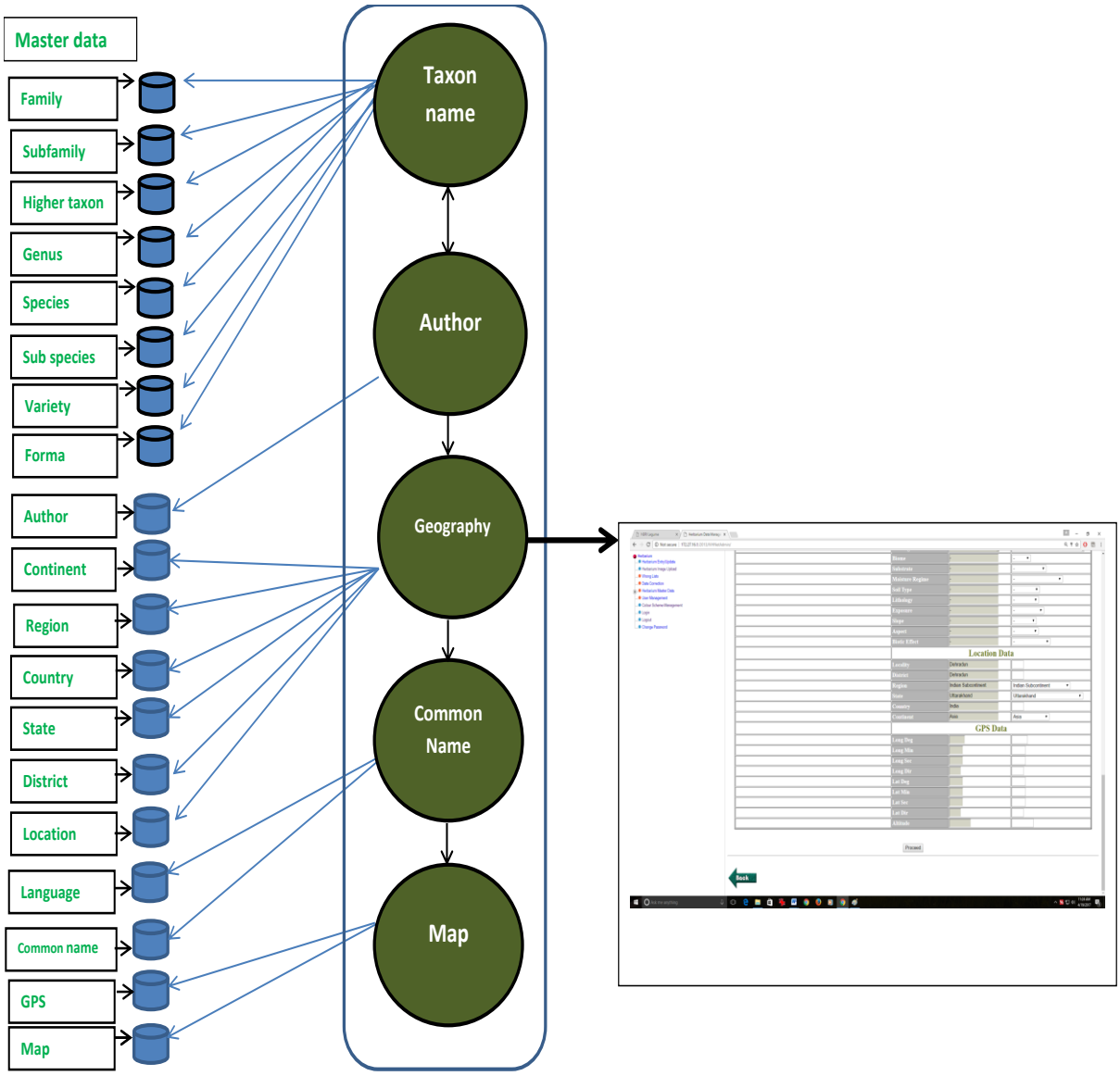

Fig 3: Schematic model show data entry mechanism of herbarium specimen data – Updated nomenclature

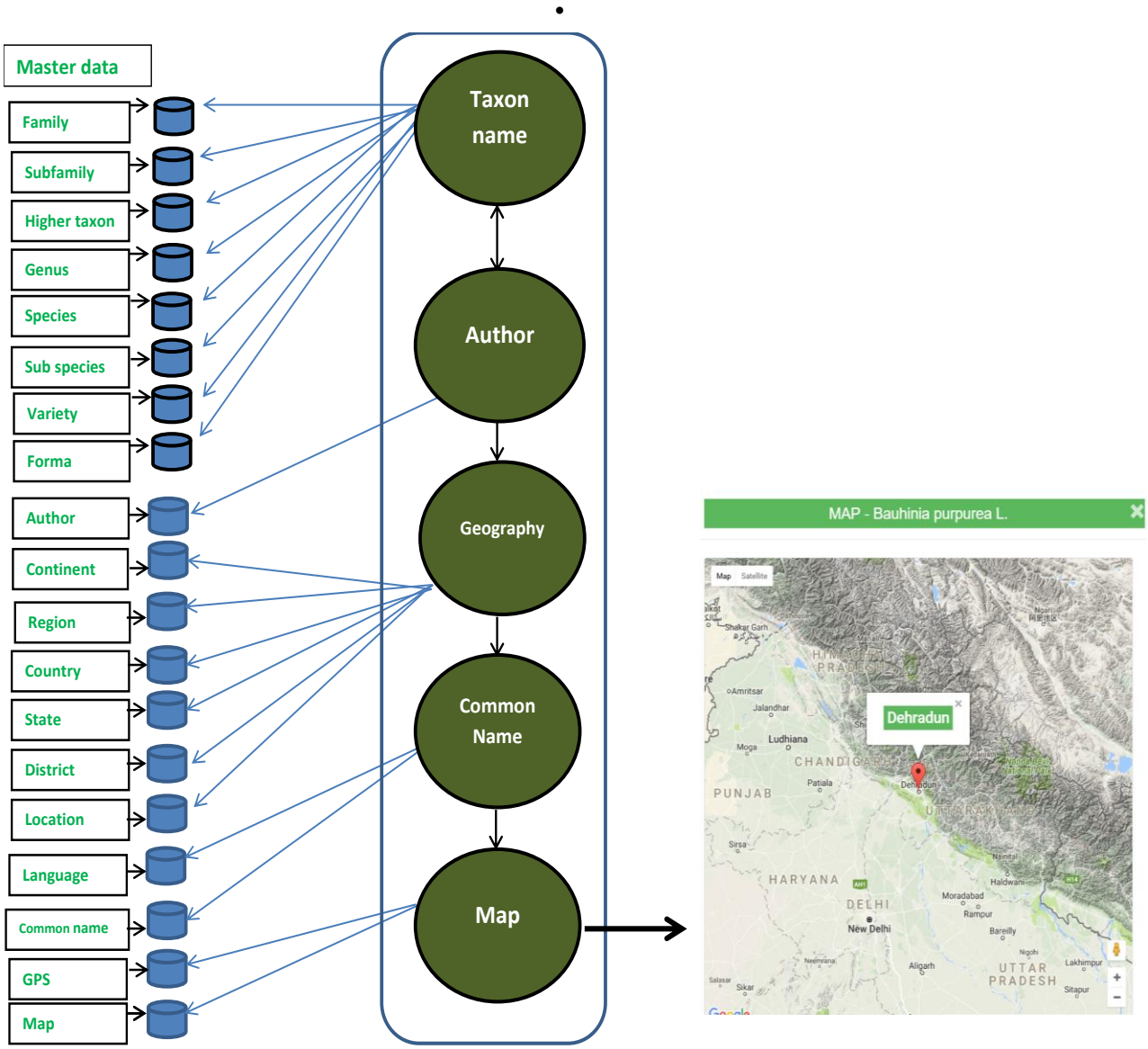

Fig 4: Schematic model show data entry mechanism of herbarium specimen data – GPS data

2.Option-1 Taxa:

2.1 Sub family-Caesalpinioideae:

A sample test run using option 'Taxa' sub option 'Sub family' for Caesalpinioideae provides 143 species belonging to family Leguminosae in LWG herbarium and the sample list is presented in Table 3. It revels maximum accessions of *Senna* tora (163) followed by *Senna occidentalis (143), Bauhinia racemosa (124), Cassia fistula (78), Bauhinia vahlii (73), Bauhinia purpurea (64), Chamaecrista pumila (63), Senna auriculata (59), Bauhinia malabarica (44), Bauhinia variegata (43), Caesalpinia decapetala (38), Caesalpinia bonduc (35), Tamarindus indica (32). Bauhinia tomentosa (29), Senna sophera (28), Cassia mimosoides (25), Parkinsonia aculeata (24), Senna siamea (23), Bauhinia divaricata (22)* and remaining species are represented by less than 20 accessions in LWG herbarium as depicted in the Table 3.

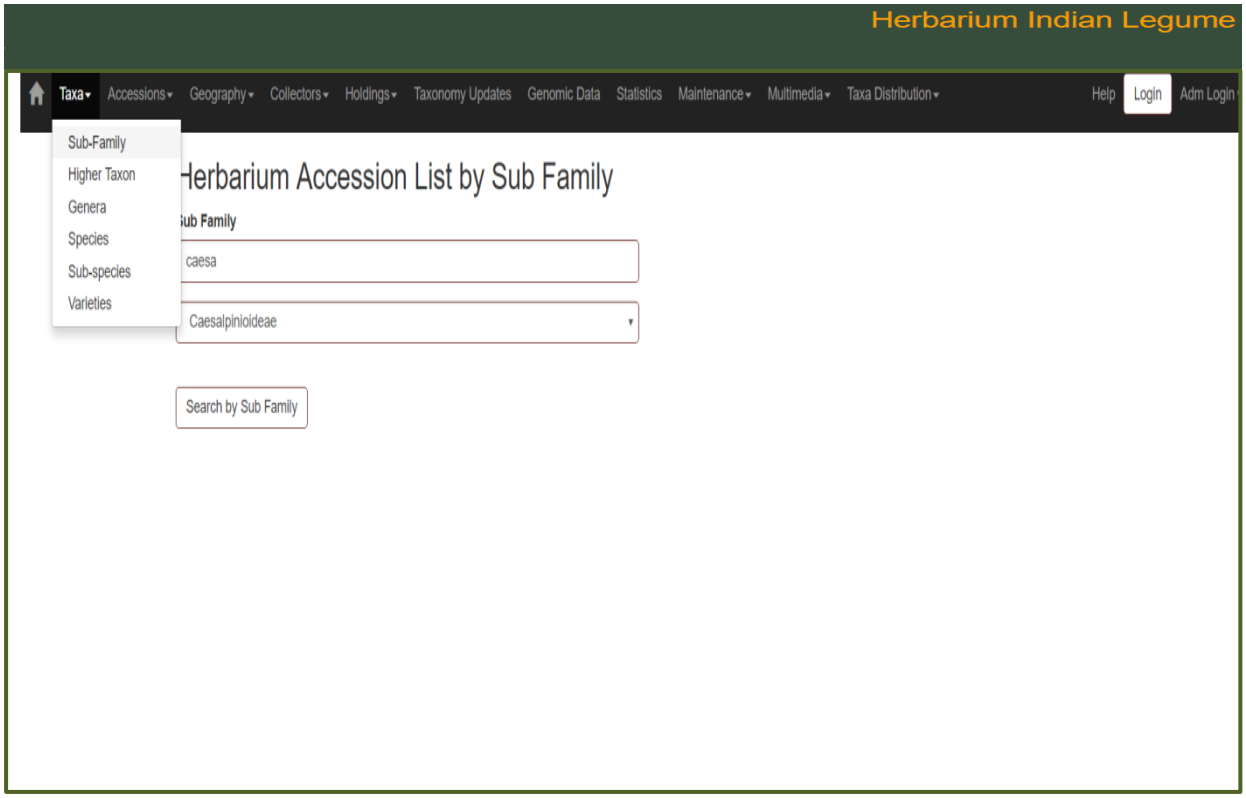

Fig 5: Screen shot showing sample test run from HILWeb option TAXA sub option subfamily Caesalpinioideae

Table 3: Sample test run showing 143 species belonging to of sub family Caesalpinioideae of family Leguminosae

Species	Accession No.
Amherstia nobilis Wall. (7)	[59514] [59513] [42311] [62835] [59515] [50451] [66043]
Bauhinia acuminata L. (15)	[5788] [98225] [16724] [98224] [98223] [8660] [5686] [54646] [88863] [88864] [24986] [499] [500] [5789] [82856]
Bauhinia blakeana Dunal (3)	[98222] [98220] [98221]
Bauhinia campechianum L.	[5639]
Bauhinia corymbosa Roxb. (5)	[43183] [40144] [5506] [38999] [22961]
Bauhinia diphylla Buch.-Ham. (3)	[59703] [47747] [48288]
Bauhinia divaricata L. (20)	[21815] [26318] [52600] [50444] [67374] [25870] [67396][25869] [24987] [66225] [26343] [51385] [76067] [18314][67401] [21814] [40710] [53714] [41177] [26342]
Bauhinia galpinii N.E.Br. (7)	[52178] [6540] [6541] [60386] [11610] [88809] [88810]
Bauhinia hookeri F.Muell. (8)	[98212] [98213] [98215] [63461] [4165] [98214] [54896] [98216]
Bauhinia sp.	[70130]
Bauhinia integrifolia Roxb.	[67799]
Bauhiniamacrostachya L.	[49196]
Bauhinia malabarica Roxb. (44)	[92628] [92629] [30471] [77144] [77145] [77149] [93183][93184] [77148] [31144] [11989] [78567] [78569] [47369][80528] [30482] [9044] [78572] [9045] [30483] [30535][78571] [23560] [61780] [91116] [91094] [61513] [22956][60443] [52500] [1947] [1975] [19623] [91117] [19380][65269] [91158] [19381] [69508] [67203] [75991] [75990][23554] [53108]
Bauhinia monandra Kurz	[14902]
Bauhinia purpurea L. (64)	[52236] [26336] [30084] [89943] [78573] [13858] [13620][22686] [78570] [22951] [19058] [17572] [81486] [30509][22952] [84930] [84929] [33220] [33219] [16727] [36512][78575] [86016] [86017] [78574] [86018] [19640] [11052][50490] [95952] [50512] [98228] [6381] [76068]

	[70138][70139] [70156] [52233] [45488] [52234] [58823] [98227][52235] 98226] [66807] [52237] [95951] [95950] [52232] [77806] [95947] [22735] [40033] [77807] [66806] [77808][39971] [74937] [77805] [74518] [4166] [66028] [8519][40138]
Bauhinia racemosa Lam. (124)	[75992] [83906] [83604] [83907] [22959] [83925] [84574][84580] [22957] [74818] [83605] [22958] [73206] [40034][19550] [19549] [19382] [68976] [53185] [19356] [19320][66675] [18735] [18705] [64635] [69062] [64280] [22734][71440] [85530] [21622] [85531] [70260] [21439] [62836][63221] [69888] [18616] [75993] [78564] [34888] [34819][77103] [77102] [34768] [34605] [34236] [34228] [79568][79569] [77101] [44304] [34914] [35255] [78565] [78566][38851] [78568] [40035] [37654] [37359] [37186] [36204][36067] [77104] [35375] [79846] [79847] [27709] [49870][75999] [37229] [75998] [76217] [75997] [75996] [75995][75994] [51081] [81667] [27721] [80562] [76219] [79848][79849] [79850] [79851] [76218] [79852] [45145] [76190][76189] [45502] [45560] [81668] [17968] [11851] [17096][17106] [12375] [17092] [17540] [15573] [11850] [93946][15583] [7464] [11901] [15574] [15575] [11900] [11849][5241] [93020] [13564] [17571] [17955] [3511] [17502][9043] [16258] [17350] [16232] [91144]
Bauhinia rufescens Lam.	[59741] [69975]
Bauhinia scandens L. (7)	[5509] [26829] [26320] [26321] [26319] [21817] [21813]
Bauhinia semla Wunderlin (5)	[21441] [501] [4168] [17539] [21440]
Bauhinia sp. (3)	[91848] [70129] [91847]
Bauhinia tomentosa L. (29)	[62574] [22955] [62231] [34889] [7465] [26337] [7051] [62232] [73266] [19319] [74270] [89023] [21442] [30427] [71689] [54577] [40398] [2636] [62228] [4167] [11848] [36084] [5508] [62230] [37405] [10679] [62229] [25368] [88995]
Bauhinia vahlii Wight & Arnott (73)	[21605] [80559] [91049] [80558] [21816] [26341] [91042] [34722] [29495] [80560] [26317] [83603] [55308] [82282] [2526] [2528] [82855] [52860] [83967] [83968] [75028] [48628] [26340] [26339] [26338] [22960] [82283] [84072] [84071] [53144] [40064] [40708] [77382] [77242] [38476] [77147] [77146] [18234] [65334] [19590] [90031] [502] [39876] [78563] [78562] [9039] [9040] [9041] [9042] [39972] [77609] [78560] [19275] [19281] [78561] [17560] [77098] [76904] [30534] [79462] [83602] [69379] [76065] [79461] [32979] [76066] [91041] [45756] [61779] [30544]

	[76903] [46388] [46505]
Bauhinia variegata L. (43)	[78559] [40399] [97207] [76064] [88279] [76063] [40397] [98218] [97308] [80561] [3538] [96668] [96669] [96672] [96673] [35866] [11847] [77100] [36511] [36513] [11716] [98217] [97310] [98219] [28062] [77099] [55348] [19622] [71868] [87423] [65592] [88277] [65575] [88278] [87422] [19355] [22953] [19354] [66802] [19353] [53376] [60350] [22954]
Brownea ariza Benth. (7)	[22732] [22733] [22731] [56223] [8728] [6374] [10678]
Brownea coccinea Jacq. (6)	[35710] [526] [36736] [45577] [6836] [7251]
Caesalpiniabonduc (L.) Roxb. (35)	[15610] [78645] [19474] [19638] [29494] [19473] [85055] [94309] [76000] [19464] [94310] [85054] [8474] [91097] [78646] [79438] [490] [71536] [82270] [82271] [15122] [491] [15121] [23561] [89297] [79439] [89298] [83908] [53610] [33894] [89299] [89099] [69958] [83909] [77389]
Caesalpiniacacalaco Humb. & Bonpl.	[63460]
Caesalpiniacoriaria (Jacq.) Willd. (11)	[71949] [61781] [45387] [51082] [65270] [68240] [495] [88973] [88974] [65271] [71417]
Caesalpiniacrista L. (11)	[82814] [36194] [65547] [35805] [46909] [52460] [4204] [71613] [71614] [82815] [81381]
Caesalpiniacucullata Roxb. (11)	[30536] [55166] [14037] [30533] [30530] [9035] [26323] [40855] [30472] [9036] [9037]
Caesalpiniadecapetala (Roth) Alston (38)	[34691] [90155] [64737] [67131] [73969] [19057] [68708] [93576] [89776] [38760] [39718] [89777] [494] [66809] [19265] [93575] [22682] [91118] [27113] [48989] [90156] [21577] [48988] [21578] [76001] [73959] [76002] [47039] [76003] [75027] [81531] [22683] [46389] [16992] [87898] [91627] [16242] [6837]
Caesalpiniadigyna Rottler (5)	[46238] [3517] [9038] [70093] [42022]
Caesalpiniaferrea C.Mart.	[69889]
Caesalpiniamimosoides Lam.	[70070] [69316]
Caesalpiniapannosa Brandegee (6)	[34152] [34153] [59573] [59574] [34585] [56477]
Caesalpiniapulcherrima (L.)Sw. (19)	[39662] [23553] [6434] [59362] [6435] [23556] [35159] [492] [88818] [88817] [493] [78644] [65710] [76004] [19476] [19654] [88151] [19475] [34942]

Caesalpiniasappan L.	[59893] [23557]
Caesalpiniaviolacea (Mill.) Standl.	[48001]
Cassiaartemisioides DC. (4)	[19572] [35667] [100565] [17658]
Cassiadesolata F.Muell.	[72433]
Cassiaeremophila A.Cunn. (3)	[100563] [100564] [103181]
Cassiaferruginea (Schrad.) DC.	[4193]
Cassiafistula L. (78)	[55534] [53182] [77803] [59516] [52170] [65110] [51212] [62022] [504] [63982] [76093] [76094] [97396] [64750] [503] [65561] [97397] [76006] [77379] [68027] [66653] [8565] [65748] [76007] [76005] [43627] [505] [88114] [30702] [92064] [23565] [83141] [83142] [31111] [23189] [23188] [27710] [19437] [92560] [34365] [78652] [92561] [34621] [78648] [92039] [23574] [26333] [88255] [88256] [81382] [88113] [80840] [80839] [80838] [80836] [79857] [91150] [79856] [92032] [81665] [81666] [92038] [23566] [9046] [83986] [37368] [18309] [94214] [39954] [88999] [89006] [92037] [93972] [84898] [9047] [83987] [84897] [80837]
Cassiaitalica (Mill.) Lam. ex F.W. Andrews (3)	[70253] [69032] [70252]
Cassiajavanica Roxb.	[506]
Cassiajavanica Roxb. ssp. nodosa (Roxb.) K.Larsen & S.S.Larsen (10)	[91702] [55031] [91701] [68764] [55032] [65636] [68773] [68026] [91676] [68765]
Cassialancaster	[54151]
Cassialeptophylla Vogel	[3186]
Cassiamagnifolia F.Muell.	[101242]
Cassiamimosoides L. (25)	[49640] [86105] [49184] [70388] [77387] [59572] [88168] [77388] [80511] [86104] [53526] [70431] [70545] [23175] [23177] [96586] [23178] [96587] [23176] [66090] [9049] [88167] [70389] [19269] [70407]
Cassiamultijuga (Rich.)Irwin & Barneby	[23568]
Cassiaphyllodinea R.Br. (4)	[60364] [63273] [102309] [60264]
Cassiapleurocarpa F.Muell.	[100562]

Cassiarenigera Benth.	[69248] [70005]
Cassiaroxburghii	[88906]
Cassiaroxburghii DC. (11)	[39392] [88907] [23190] [36803] [51085] [65572] [62838] [3520] [507] [65590] [22730]
CassiaSenna Mill.	[8506]
Cassia sp.	[60324] [101396]
Ceratonia *siliqua* L.	[4203]
Cercisoccidentalis A.Gray	[102911]
Cercissiliquastrum L.	[101813] [62733]
Chamaecristaabsus (L.) H.S.Irwin & Barneby. (38)	[23172] [11954] [522] [23174] [11953] [91088] [11841] [23173] [43580] [68844] [78647] [21820] [11950] [92626] [66494] [11951] [11952] [91084] [53614] [76089] [91054] [62837] [91439] [4194] [68871] [40590] [80563] [40151] [26330] [51075] [21398] [91092] [40647] [76088] [76087] [17680] [18585] [3733]
Chamaecristafasciculata (Michx.) Greene (4)	[102219] [104021] [100701] [103321]
Chamaecristakleinii Wight & Arnott	[23185]
Chamaecristaleschenaultiana (DC.) Degener	[525]
Chamaecristamimosoides (L.) Greene	[66369] [3998]
Chamaecristanictitans Elliott var. aspera	[63728]
Chamaecristaorbiculata Benth.	[63063]
Chamaecristapumila (Lam.) K.Larsen (63)	[66469] [89774] [89775] [18559] [15582] [19397] [21819] [19579] [63218] [68848] [19558] [21411] [21412] [19557] [21413] [21587] [17488] [65601] [19515] [21818] [19438] [19630] [9048] [6695] [49982] [50311] [11843] [26329] [26328] [26327] [51100] [26326] [22742] [4142] [4011] [82471] [76008] [76009] [40732] [39313] [10197] [41205] [7476] [11842] [43621] [11946] [11947] [11948] [11949] [10198] [46509] [14655] [21410] [53726] [23183] [23179] [2508] [23180] [23184] [23182] [23181] [523] [54612]
Chamaecristaviscosa Kunth	[60131]

Colophospermummopane (Benth.) Leonard	[63272]
Cynometraramiflora L. (4)	[92525] [55424] [92524] [46237]
Danielliasp.	[63324] [63323]
Delonixelata (L.) Gamble (10)	[36322] [51083] [70377] [12371] [15580] [69027] [12372] [71464] [64456] [7820]
Delonixregia (Hook.) Raf. (10)	[51102] [91145] [88977] [56222] [92036] [88976] [38654] [92031] [73204] [36317]
Echitescauliflora L.	[5478]
Erythrinavespertilio Benth.	[63274]
Gleditsiaamorphoides (Griseb.) Taub.	[44332]
Gleditsiamacracantha Desf. (3)	[25224] [23559] [10671]
Gleditsiatriacanthos L.	[2926] [14717]
Haematoxylumcampechianum L. (4)	[51213] [496] [67927] [5638]
Haematoxylumlabialis (L.f.) Spreng.	[5637]
Hardwickiabinata Roxb. (8)	[30959] [90760] [65708] [14728] [64751] [66497] [30473] [90761]
Humboldtiabrunonis Wallich	[59900]
Humboldtiadecurrens Oliver	[62158]
Hymenaea	[69971]
Ingauraguensis Hook. & Arn.	[10047]
Intsiabijuga (Colebr.)Kuntze	[59928]
Matoapolyandra (Roxb.)Harms	[4182]
Moullavaspicata (Dalzell) Nicolson	[70067] [69214]
Parkinsoniaaculeata L. (24)	[498] [59368] [497] [3519] [59367] [58974] [21567] [21568] [21603] [51084] [19565] [86832] [69891] [19619] [86833] [86831] [65576] [26827] [6704] [16442] [19659] [5641] [13856] [80851]
Parkinsoniaacuminata L.	[5640]

Parochetusindica L.	[38707]
Peltophorumpterocarpum (DC.) K.Heyne (10)	[81218] [68783] [68782] [68781] [91086] [68763] [64147] [63186] [51079] [489]
Piliostigmamalabaricum (Roxb.) Benth.	[11570]
Polygonumpulcherrima (L.)Sw.	[88152]
Psilorhegmagaudichaudii (H.r.a.) Degner	[67422]
Pterocarpusmarsupium Roxb.	[15680]
Pterolobiumhexapetalum (Roth) Santapau & Wagh (3)	[69113] [69946] [59902]
Saracaasoca (Roxb.) Willd.	[69882] [95945]
Saracadeclinata (Blume) Miq. (8)	[98409] [98407] [72292] [98406] [98211] [59493] [98405] [98408]
Saracaindica L. (19)	[80917] [55780] [59581] [19325] [19326] [34066] [36997] [59580] [59582] [56329] [48368] [56216] [49633] [76452] [76453] [48030] [65543] [527] [91258]
Saracasp.	[72380]
Saracathaipingensis Prain	[69974]
Senna alata (L.) Roxb (7)	[68733] [46508] [46503] [102683] [69994] [65712] [14734]
Senna alexandrina Miller (3)	[68023] [92470] [92479]
Senna appendiculata Vell.	[68021]
Senna auriculata (L.) Roxb (59)	[8290] [12675] [52394] [47148] [46522] [46510] [88901] [46507] [19272] [7020] [54590] [517] [518] [13848] [52823] [5228] [34154] [16351] [2635] [51099] [6838] [11844] [11845] [11955] [29070] [28644] [11996] [11997] [81158] [23192] [11999] [11998] [12000] [19646] [79855] [79854] [11956] [40634] [40059] [92480] [34778] [88900] [19644] [33428] [11995] [79853] [19645] [65883] [65589] [68939] [68028] [69112] [64346] [69886] [70246] [69887] [70084] [71029] [68944]
Senna bicapsularis Roxb.	[55959]
Senna cana Nees & Mart.	[60508]

Senna didymobotrya (Fresen.) H.S.Irwin & Barneby (4)	[68731] [514] [73651] [60755]
Senna floribunda (cav.) (Cav.) H.S.Irwin & Barneby	[508]
Senna floribunda (Cav.) H.S.Irwin & Barneby (17)	[64220] [86132] [63784] [56367] [86133] [93546] [86134] [60288] [69573] [71372] [4020] [61540] [71371] [93547] [71370] [69574] [70094]
Senna hirsuta (L.) H.S.Irwin & Barneby (6)	[43762] [29161] [7797] [7796] [50885] [43253]
Senna italica Mill. (7)	[5331] [69885] [14035] [12006] [19435] [19647] [68958]
Senna laevigata Wilid.	[28058]
Senna multiglandulosa (Jacq.) H.S.Irwin & Barneby	[54449]
Senna multijuga (Rich.)Irwin & Barneby	[23567]
Senna obtusifolia (L.) H.S.Irwin & Barneby (5)	[44539] [48538] [63786] [70426] [70425]
Senna occidentalis (L.) Link	[6841] [15324]
Senna occidentalis (Linn.)Link (143)	[28061] [30708] [34662] [24407] [23573] [35506] [35507] [23572] [30703] [81219] [23571] [30351] [35937] [37990] [78649] [78650] [81485] [28145] [32120] [65639] [68776] [68779] [80888] [33933] [30709] [34181] [80564] [34514] [92478] [78651] [92477] [23570] [17201] [88563] [64281] [19632] [19648] [64736] [15750] [21406] [21407] [21408] [91107] [91108] [19631] [19608] [91075] [17527] [16730] [19049] [19284] [19287] [91069] [19434] [17087] [91070] [91071] [91074] [21409] [21588] [85574] [23165] [23166] [23167] [23168] [23169] [23170] [23171] [12005] [23555] [12004] [12003] [13857] [84687] [14260] [85573] [91125] [85192] [85191] [91126] [69572] [85037] [85036] [22741] [84919] [84918] [23569] [37998] [65990] [43198] [76010] [47147] [96766] [47839] [47845] [50265] [45078] [51320] [51548] [74882] [51608] [513] [512] [43288] [76011] [96767] [76409] [3185] [46502] [66697] [70213] [2626] [6840] [70214] [97208] [44482] [70215] [76410] [68025] [35531] [73555] [38008] [39879] [55046] [38409] [509] [39916] [39878] [68770] [71214] [39387] [39386] [11611] [68771] [38245] [10196] [511] [72965] [73175] [53104] [52894] [510] [53183]
Senna pallida L.	[68022]

Senna pendula Collad. var. glabrata	[59960]
Senna podocarpa (Guill. & Perr.) Lock	[47131] [50884]
Senna septemtrionalis (Viv.) H.S.Irwin & Barneby (9)	[44182] [45342] [45084] [44183] [2228] [40882] [14950] [55418] [70925]
Senna siamea (Lam.) H.S.Irwin & Barneby (23)	[89286] [89412] [53181] [89287] [23191] [64534] [16683] [89411] [91062] [17664] [17124] [51101] [84685] [519] [520] [42912] [7052] [6842] [34145] [6843] [92918] [92917] [94215]
Senna sophera (L.) Roxb.	[7463]
Senna sophera Roxb. (28)	[67215] [30078] [30079] [25607] [29721] [43197] [21399] [41191] [21400] [21401] [61273] [50369] [96612] [19577] [65711] [23711] [70289] [23187] [39388] [39803] [23186] [89349] [89348] [23558] [80565] [12001] [65548] [68928]
Senna spectabilis (DC.) H.S.Irwin & Barneby	[104022] [40499]
Senna sulfurea (Collad.) H.S.Irwin & Barneby (14)	[72321] [68019] [6542] [67988] [59363] [54584] [93997] [63981] [8661] [22729] [97217] [6839] [68020] [521]
Senna surattensis (Burm.f.) H.S.Irwin & Barneby (12)	[86780] [91337] [89000] [88823] [91338] [64625] [69279] [83817] [86719] [83816] [86720] [69277]
Senna tomentosa L.	[51326]
Senna tora Roxb. (163)	[94468] [91218] [12641] [68784] [91217] [65538] [94216] [11940] [17093] [11245] [90820] [68772] [17088] [12002] [11200] [16661] [91099] [11846] [6187] [94469] [92382] [11944] [68780] [8253] [91100] [14660] [15933] [96441] [516] [92554] [11945] [96442] [515] [11943] [92555] [11941] [91072] [91073] [66800] [11942] [65760] [16441] [68024] [92383] [68785] [65626] [96443] [28060] [77746] [77745] [77744] [77743] [77741] [77740] [77739] [40442] [40597] [60307] [40852] [41292] [42705] [77804] [40075] [40030] [28646] [29612] [30418] [63798] [30542] [31142] [33104] [78653] [38337] [77742] [39877] [39917] [40028] [43630] [76963] [70217] [70218] [51098] [51518] [74662] [74661] [74660] [52090] [74391] [73176] [53957] [71558] [55149] [48008] [70216] [76013] [44631] [76901] [45067] [45891] [45967] [76092] [76091] [76090] [46395] [46743] [76016] [76015] [76014] [55835] [27740] [17094] [21405] [86036] [86035] [86034] [21634] [21821] [23158] [23159] [84686] [76012] [23161] [23162] [23163] [23164] [83951] [21404] [87075] [87076] [17095] [17108] [17541] [18505] [18507] [19395] [19436] [23160] [64285] [19578] [19603]

	[19607] [19657] [21402] [21403] [83774] [83773] [80885] [26331] [19560] [23716] [26332] [23564] [23563] [81346] [23562] [82890] [80886] [82470] [83045] [80887] [26845] [26825] [81860]
Sindorasiamensis (Blume) Miq.	[59753]
Tamarindusindica L. (32)	[5772] [65625] [11988] [79494] [61653] [29280] [90030] [95944] [19430] [74938] [79495] [93019] [51080] [2637] [46430] [94217] [97846] [45392] [21596] [45066] [97107] [82938] [23474] [23473] [78432] [94242] [3526] [78555] [78554] [78433] [5770] [5771]
Tavernieranummularia DC.	[5963]
Tecomagalpinii N.E.Br.	[5667]
Tibetiahimalaica (Baker) H.P.Tsui	[40438]
Trachylobiumhorneri Heyne	[59752]
Veronicacoccinea Jacq.	[38692]
Wagateaspicata Dalzell	[7114]
Wisteriasinensis (Sims) Sweet	[21509] [5662]

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Total no of species 143 and      specimen 1580
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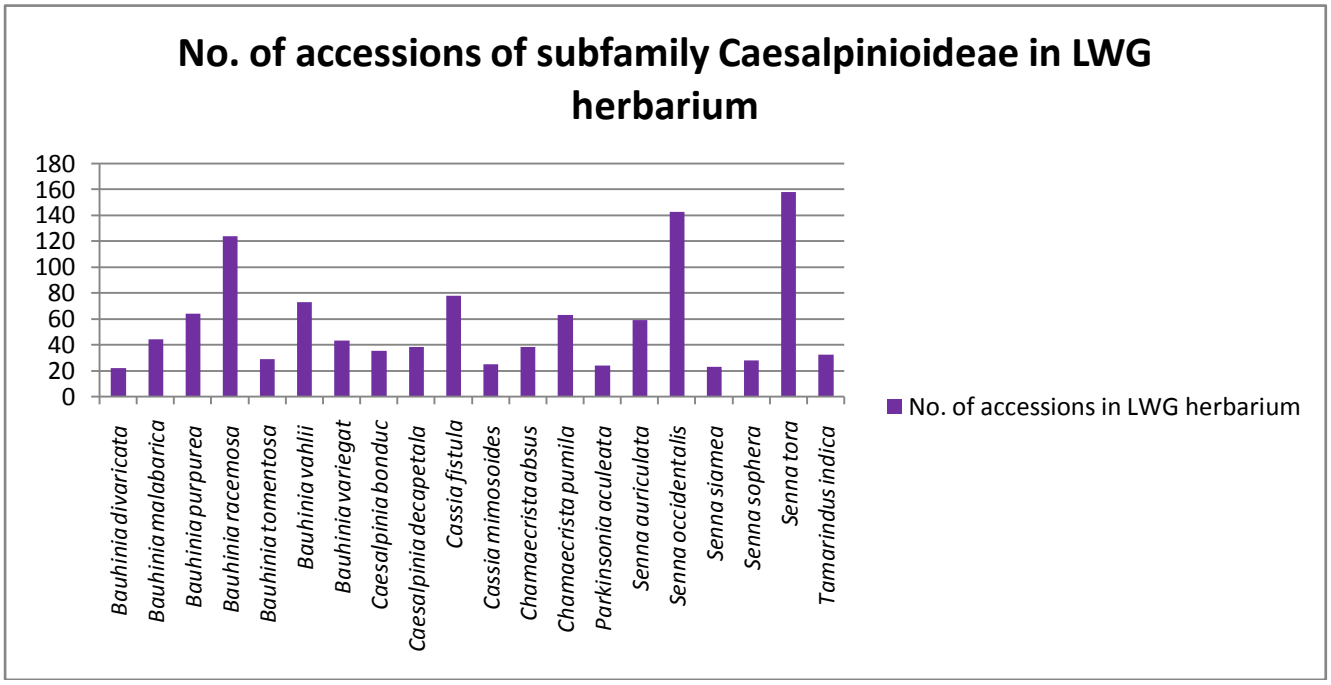

Fig 6: Graphical representation of accessions of Subfamily Caesalpinioideae family Leguminoseae in LWG herbarium.

2.2 Sub family-Mimosoideae:

A sample test run using option 'Taxa' sub option 'Sub family' for Mimosoideae provides 214 species belonging to family Leguminosae in LWG herbarium and the sample list is presented in Table 4. It revels maximum accessions of *Acacia catechu (110) followed by Albizia lebbeck (67), Acacia pennata (56),Mimosa pudica (53),Acacia leucophloea (52),Mimosa himalayana (48), Leucaena leucocephala (46),Mimosa rubicaulis (46),Pithecellobium dulce (42), Acacia arabica (40),Albizia procera (31), Neptunia oleracea (28),Acacia auriculiformis (26),Albizia odoratissima (25), Dichrostachys cinerea (24),Acacia farnesiana. (23), Acacia otica* (22) and remaining species are represented by less than 20 accessions in LWG herbarium as depicted in the Table 2.

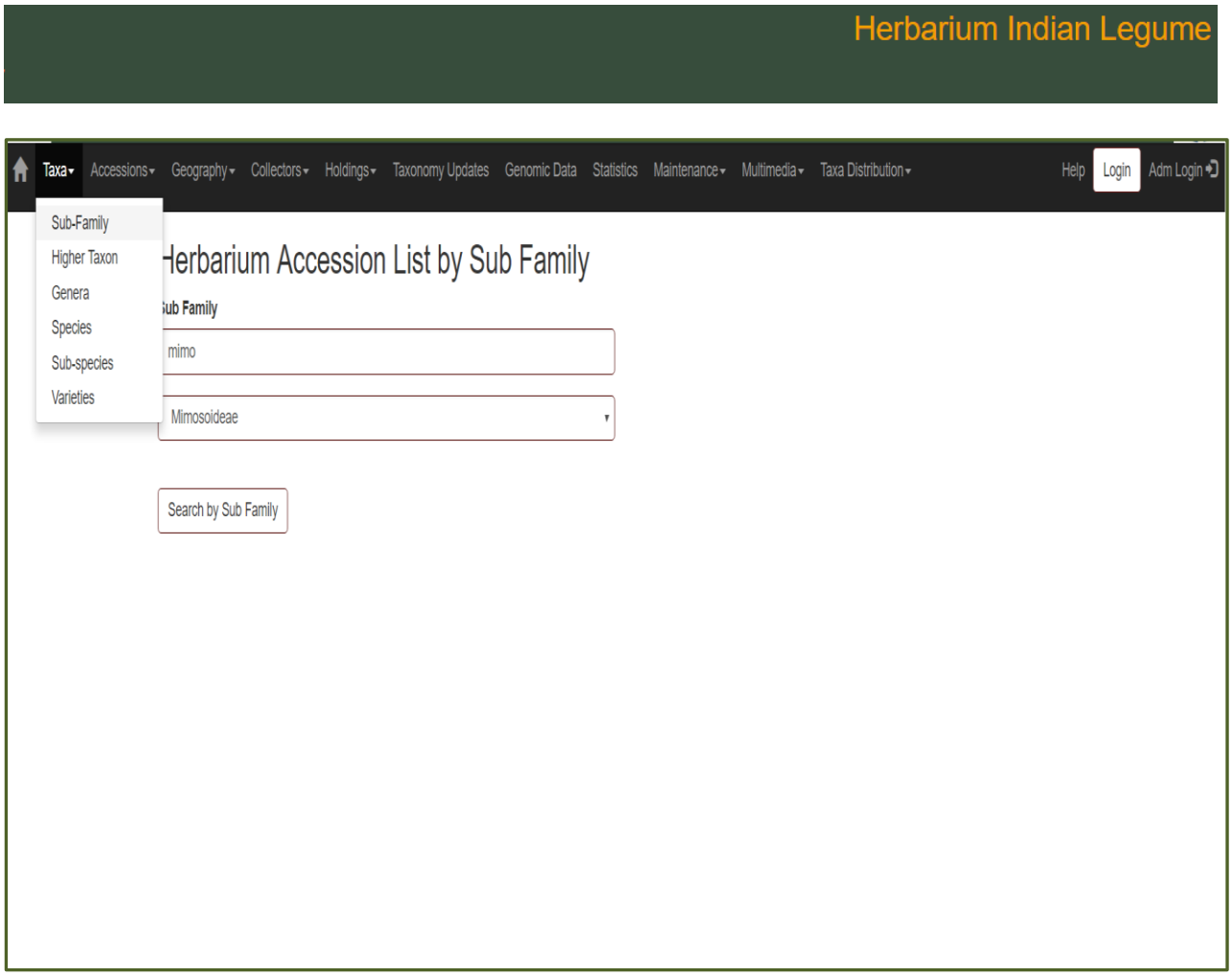

Fig 7: Screen shot of showing sample test run from HILWeb option TAXA sub option subfamily Mimosoideae

Table 4: Sample test run showing 214 species belonging to of sub family Mimosoideae of family Leguminosae

Species	Accession no.
Acaciaacinacea Lindley	[100559]
Acaciaacuminata Benth.	[100285]
Acaciaalata R.Br. (3)	[69299] [69278] [100284]
Acaciaamoena Wendl.	[100283]
Acacia aneura Benth.	[100282]
Acaciaarabica (Lam.) Willd. (40)	[53374] [22748] [18610] [23049] [23048] [12373] [47972][13346] [98151] [53375] [50227] [98157] [51043] [80850][11788] [80893] [80919] [81052] [37779] [81246] [34982][39171] [9057] [31823] [30705] [28057] [28056] [21823][65766] [15578] [19649] [19502] [34688] [3531] [21500][15579] [21501] [81332] [18425] [19391]
Acaciaarundelliana F.Muell. & Maiden.	[103751]
*Acaciaataxacantha*DC.	[68084]
Acaciaauriculiformis Benth. (26)	[68769] [100280] [68768] [68751] [88861] [88860] [65637][68750] [81423] [61514] [93478] [54943] [98373] [98372][98371] [72293] [71177] [59851] [59867] [74533] [93479][15869] [69467] [94442] [94443] [94444]
Acaciabaileyana F.Muell.	[63132]
Acaciabaueri Benth.	[103744]
*Acaciabinervata*DC.	[60248]
Acaciabinervia (Wendl.) J.F.Macbr..	[101504]
Acaciabrachystachya Benth.	[102816]
Acaciabrowniana Link	[101492]
Acaciabuxifolia A.Cunn.	[100279] [101696]
Acaciacaesia (L.)Willd. (4)	[23729] [61542] [541] [69944]
Acaciacalamifolia Lindley (3)	[100764] [100276] [100278]
Acaciacanescens (Britton & Killip) Garcia-Barr. (5)	[17349] [16279] [32181] [30213] [32133]
Acaciacatechu (L.f.) Willd. (110)	[50438] [75757] [76335] [75759] [22747] [75758]

[96452][93580] [23246] [23245] [23058] [23057] [23056] [23055][76336] [76907] [76906] [76905] [93581] [47613] [74816][54486] [19503] [62849] [68016] [64342] [67021] [66698][19266] [19052] [18677] [64636] [62020] [73776] [19604][54519] [21825] [21824] [55294] [73775] [21502] [73774]
[34424] [56173] [69341] [23054] [80163] [84941] [84942][85072] [40137] [74390] [34202] [86038] [97206] [88327][88328] [88329] [78766] [79944] [81670] [80162] [36543][37249] [35850] [35849] [37520] [80156] [21812] [80155][35228] [81669] [35058] [78765] [78764] [77720] [92372][92373] [92374] [26335] [25683] [92612] [92676] [23549]
[23548] [77143] [23546] [92371] [78760] [89996] [78763][91055] [91056] [78762] [91121] [30508] [30214] [30211][91152] [91167] [78761] [77142] [5793] [11838] [11839][11837] [16234] [17561] [539] [65032]

Acaciacaven Molina [101824]

Acaciachundra (Rottler) Willd. (5) [7466] [11891] [90763] [90762] [70006]

Acaciacochlearis (Labill.)Wendl. [52692]

Acaciacochlocarpa Meissn. [100277]

Acaciacommunis D.Don [38705]

Acaciaconcinna (Willd.) DC. (6) [101233] [9050] [80556] [80557] [67773] [101708]

Acaciacornigera (L.)Willd. [4187]

Acaciacoronalis Benth.. [63078]

Acaciacultriformis G.Don. [63083]

Acaciadealbata Link (6) [21499] [71209] [543] [70728] [75616] [40660]

Acaciadeanei R.T.Baker [63079]

Acaciadecurrens Wilid. (18) [100270] [100271] [45366] [100269] [35923] [43797] [103157][50440] [45216] [4028] [101506] [100272] [43500] [40733][10195] [48364] [48241] [60353]

Acaciadentifera Benth. [101260]

Acaciadrepanolobium Sjostedt [60368]

Acaciadictyophleba F.Muell. [72481]

Acaciadifformis R.T.Baker [103156]

Acaciadodonifolia (Pers.) Balb. [101191]

Acaciadonaldii Haines (4) [60769] [60767] [60768] [93018]

Acaciadrummondii Lindley	[102860] [100698]
Acaciaeburnea (L.f.) Willd.	[44907] [29442]
Acaciaelongata DC.	[103749] [101096]
Acaciaextensa Lindley	[101624]
Acaciafalcata Wilid.	[103750]
Acaciafarinosa Lindley	[101700]
Acaciafarnesiana (L.)Willd. (23)	[30212] [54727] [91047] [30498] [59512] [23051] [23243][22750] [23050] [30495] [91046] [23651] [31882] [34981][19267] [103159] [34733] [8518] [8476] [63753] [64733][22751] [40077]
Acaciaferruginea DC. (5)	[78769] [27209] [540] [19544] [6826]
Acaciagageana Craib (6)	[39146] [4009] [32095] [71404] [42911] [42910]
Acaciagenistifolia Link.	[101784]
Acaciagilesii F.Muell.	[101707]
Acaciagladiiformis A.Cunn.	[100699]
Acaciaglaucescens Wilid.	[101153]
Acaciagunnii Benth.	[102274]
Acaciahohenackeri Craib	[87833]
Acaciahorrida (L.) Willd.	[70083] [69117]
Acaciaimplexa Benth	[103110]
Acaciainaequale W.Fitzg. ex Maiden	[103745]
Acaciaiteaphylla Benth.	[101479] [101709]
Acaciajacquemontii Benth. (13)	[43245] [7469] [7468] [73868] [11836] [11006] [36544][7470] [33247] [11882] [11883] [64734] [11884]
Acaciajuncifolia Benth.	[103623] [101409]
Acaciajuniperina Wilid.	[101617]
Acaciakarroo Hayne (3)	[55247] [47146] [47830]
Acaciakoa A.Gray (3)	[68063] [72375] [64474]
Acacialatescens Benth.	[10224] [103158]
Acacialenticularis Benth. (4)	[98376] [98375] [65655] [98374]

Acacialeptoclada Benth. (3)	[103624] [100502] [101491]
Acacialeucophloea (Roxb.) Willd. (52)	[37194] [45309] [5112] [80157] [19541] [16235] [16259][94218] [53113] [64148] [64167] [51042] [21615][50912][14726] [36228] [80894] [7467] [34348][34235] [537][15679] [40932] [13407] [34950][79682] [79681] [78767][64286] [17351] [23244][22749] [11881] [19392] [19369][11713] [19263][5966] [5965] [23731] [45473] [46579] [40080] [19532] [23046] [40027] [23047] [78768] [39376][30627] [30625] [19504]
Acacialigulata Benth.	[60605] [104302]
Acacialineata G.Don.	[72054]
Acacialinifolia Wilid.	[101704]
Acacialongifolia (Andrews) Willd. (8)	[100719] [100715] [101623] [101478] [101505] [100716] [101480][63131]
Acacialongissima Wendl..	[101626]
Acacialunata G.Lodd.	[101705] [101232]
Acaciamearnsii De Wild.	[68083] [69101]
Acaciamelanoxylon R.Br. (6)	[3533] [45213] [100717] [10690] [72893] [2621]
Acaciamellifera (M.Vahl) Benth.	[69884]
Acaciamicrocarpa F.Muell.	[100718]
Acaciamitchellii Benth.	[100720]
Acaciamodesta Wall. (14)	[23053] [4185] [23242] [23241] [23240] [54149] [7389][23652] [19368] [21498] [51427] [98379] [51426] [98380]
Acaciamollisima Wilid.	[103748]
Acaciamontana Benth.	[101701]
Acaciamurrayana Benth.	[101097]
Acaciamyrtifolia (Sm.) Willd. (3)	[103160] [100721] [100295]
Acaciaotica (L.)Delile (22)	[76497] [64735] [76498] [91122] [69523] [44439] [76499][536] [88798] [80158] [88797] [75761] [75697] [80159][75762] [38702] [75699] [75698] [75760] [38703] [89305] [75696]
Acaciaoswaldii F.Muell.	[100294]

Acaciapapyrocarpa Benth.	[103746] [72430]
Acaciaparadoxa DC. (3)	[60012] [101697] [100281]
Acaciapennata (L.)Willd. (56)	[60283] [52397] [47490] [78657] [60772] [72134] [70257][52521] [65913] [60773] [71306] [62463] [74785] [4012][47890] [72611] [74989] [68974] [66699] [52670] [60774][22746] [15676] [9056] [36526] [93971] [45308] [31819][37353] [31817] [9055] [9054] [94220] [34689] [34200][14727] [9051] [13570] [34928] [34948] [21822] [7328][91082] [23550] [44120] [11886] [5972] [40415] [11885][37357] [85714] [23052] [29159] [91083] [91123] [29402]
Acaciapennata Wild.	[542]
Acaciapenninervis DC.	[101235]
Acaciapinnata Sieb.	[103229]
Acaciaplanifrons Wight & Arnott	[46241] [69883]
Acaciapodalyrifolia A.Cunn.	[101703]
Acaciapolyacantha Willd. (11)	[70089] [73578] [30851] [79577] [79687] [79686] [79683][79685] [79684] [79578] [79576]
Acaciapolybotrya Benth.	[101402]
Acaciapruinosa Benth.	[101236]
Acaciapseudo-eburnea Dunal (4)	[85171] [85170] [91124] [91048]
Acaciapubescens (Vent.) R.Br. (4)	[103625] [100293] [103622] [101625]
Acaciapulchella R.Br.	[100292]
Acaciapycnantha Benth.	[101493] [101834]
Acaciaretinodes Schlecht.	[100291]
Acaciarhetinocarpa J.M.Black	[63082]
Acaciarichii Hensl.	[101616]
Acaciarigens A.Cunn.	[100290]
Acaciarubida A.Cunn.	[100289]
Acaciarugata (Lam.) Fawc. & Rendle	[74294] [74295]
Acaciarupicola Benth.	[100288] [101258]
Acaciasalicina Lindley	[101706] [101494]

Acaciasaligna (Labill.) Wendl.	[100265] [100275]
Acaciasclerophylla Lindley	[100287]
Acaciasenegal (L.)Willd. (17)	[11957] [23250] [11889] [69056] [68956] [23249] [23248][23247] [18600] [11888] [11890] [11887] [71670] [5959][7330] [7329] [7390]
Acaciasericata Benth.	[104303] [100286]
Acaciaserra Benth.	[538]
Acaciasicula A.Cunn.	[101694]
Acaciasignata F.Muell.	[101698]
Acaciasinuata (Lour.)Merril (14)	[94677] [81961] [81962] [92375] [90713] [94678] [94029][94030] [92392] [81566] [81960] [93200] [93199] [93143]
Acaciasowdenii Benth..	[63081]
Acacia sp. (18)	[104300] [101237] [104102] [104103] [101766] [66171] [62731][104301] [104101] [104299] [59974] [60240] [60311] [60251] [103598] [103600] [92376][4455]
Acaciasphacelata Benth.	[100503]
Acaciaspinescens Benth.	[101702]
Acaciastricta (Andrews) Willd.	[100267]
Acaciasuaveolens (Sm.) Willd.	[100266] [102275]
Acaciasubporosa F.Muell.	[101618]
Acaciasubulata Bonpl.	[101622]
Acaciatenuifolia (L.)Willd. (3)	[4186] [43865] [4566]
Acaciaterminalis (Salisb.) J.F.Macbr.	[103752] [100268]
Acaciatetragonophylla F.Muell.	[101234]
Acaciatorta (Roxb.)Craib (13)	[63262] [61952] [60766] [66410] [69959] [60763] [60765][60764] [8567] [60762] [60761] [9052] [9053]
Acaciatortilis (Forssk.) Hayne (4)	[60367] [60266] [60267] [60366]
Acaciatrachyloba Tineo	[103599]
Acaciatrigona Meissn.	[101477]
Acaciatruncata Hoffmanns.. (3)	[101621] [100273] [100274]

Acacia trigonophylla Meissner	[101620]
Acaciaulicifolia (Salisb.) Court.	[101699]
Acaciaverniciflua A.Cunn.	[63084] [100558]
Acaciaverticillata (L'Her.) Willd.	[101259]
Acaciaverticillata Willd.	[100560]
Acaciawattiana Wilid.	[103747]
Adenantherasp.	[98378] [98377]
Adenantherapavonina L. (7)	[92550] [68291] [92551] [47715] [528] [41351] [23551]
Albizia amara (Roxb.) B.Boivin (4)	[67739] [36531] [31556] [69892]
Albizia chinensis (Osbeck) Merr. (8)	[69947] [67022] [2229] [63583] [89757] [49299] [86442][86443]
Albizia julibrissin Durazz. (4)	[100700] [22776] [7787] [10681]
Albizia julibrissin Durazz. var. mollis (Wall.) Benth. (3)	[2039] [547] [96670]
Albizia lebbeck (L.) Benth. (68)	[80160] [11840] [81661] [11858] [78656] [78655] [94225][81799] [8480] [31148] [23405] [7472] [74543] [6827][94224] [23697] [76175] [8383] [81800] [81662] [78654][97205] [80161] [74939] [19053] [26826] [19663] [76177][76176] [51041] [75752] [53716] [19595] [74542] [55448][88799] [80897] [28055] [22721] [73932] [17584] [17599] [74541] [75700] [65749] [23552] [89756] [69205] [85185][31889] [89755] [31881] [63787] [85186] [83800] [83799][68267] [88800] [33117] [60498] [544] [545] [31247][89936] [89758] [60499] [39178] [9061]
Albizia lucidior (Steud.) I.C.Nielsen (5)	[63296] [81532] [548] [5964] [14039]
Albizia odoratissima (L.f.) Benth. (24)	[546] [66357] [21627] [64696] [36278] [34753] [36244][75024] [64341] [17672] [10686] [69910] [10855] [60775][93919] [94222] [60771] [60967] [71026] [60671] [60968][60969] [60770] [60760]
Albizia procera (Roxb.) Benth. (31)	[75701] [75702] [93196] [36530] [93197] [14721] [75703][93953] [59843] [30541] [91078] [93194] [93195] [36528][67023] [32083] [14718] [97824] [93280] [72325] [55967][93279] [93294] [93287] [30531] [36529] [93193] [64536][71583] [71584] [73356]
Albizia richardiana (Voigt) King & Prain	[69977]
Albizia saman (Jacq.) Merr. (8)	[36899] [91127] [91128] [550] [6886] [69204] [70287]

	[6885]
Albizia splendens (Blume) Miq.	[100452]
Archidendronbigeminum (L.)Willd.	[69945]
Archidendronclypearia (Jack) I.C.Nielsen (6)	[56151] [94503] [92537] [92538] [94502] [83319]
Archidendronellipticum (Blanco) I.C.Nielsen.	[91851] [91852]
Archidendronglomeriflorum (Kurz) I.C.Nielsen	[49418]
Archidendronutile (Chun & F.C.How) I.C.Nielsen.	[49179]
Bauhiniapudica L.	[5666]
Caesalpiniapudica L.	[38762]
Calliandrabrevipes Benth. (4)	[23650] [23648] [73901] [46523]
Calliandracynometroides Bedd.	[72639]
Calliandradysantha Benth	[72414]
Calliandraemarginata (Willd.) Benth. var. *emarginata*	[88793]
Calliandrahaematocephala Hassk. (7)	[59360] [19332] [23730] [72610] [39791] [59361] [22712]
Calliandraharrisii (Lindl.) Benth.	[54578]
Calliandrahoustoniana (Mill.) Standl. (4)	[22713] [19460] [19583] [38519]
Calliandramagdalenae (DC.) Benth.	[103274]
Calliandratweedii Benth. (9)	[88903] [88902] [91168] [73867] [55157] [61541] [60682][62190] [62120]
Caustis flexuosa R.Br.	[102845]
Chenopodiumhimalayana Gamble	[33533]
Chloroleucontortum (Mart.) Pittier	[10005]
Desmanthusvirgatus (L.)Willd. (3)	[56417] [5828] [19244]
Dichrostachyscinerea (L.) Wight & Arn. (7)	[35287] [19511] [75580] [19535] [19658] [4190] [11870]
Dichrostachyscinerea (L.)Wight & Arn. ex Wight (24)	[69925] [35271] [11857] [69054] [35096] [32082] [5229][53103] [72951] [64869] [64638] [45111] [64632] [21617][62840] [19633] [19498] [18599] [68938] [16872] [39655][16260] [14723] [36136]
Dipteracanthussenegal (L.)Willd.	[5306]

Elephantorrhizaelephantina (Burch.) Skeels	[34108]
Entadagigas (L.) Fawc. & Rendle (3)	[31608] [34282] [49144]
EntadarheediiSpreng.	[69805] [69123]
Enterolobiumcontortisiliquum (Vell.) Morong	[7802] [35290]
Geraniumcatechu (L.f.) Willd.	[33614]
Indopiptadeniaoudhensis (Brandis) Brenan (3)	[10209] [21510] [10208]
Koompassiaexcelsa (Becc.) Taub.	[100457]
Leucaenaleucocephala (Lam.) de Wit (46)	[94223] [33582] [93141] [533] [88254] [88253] [88252][87964] [87963] [96426] [81006] [6871] [6872] [8477][89759] [12561] [21586] [3392] [2640] [22762] [535][534] [87962] [51174] [64630] [35057] [72928] [71956][71957] [66409] [46735] [58242] [34809] [67083] [84681][47149] [85996] [78972] [69524] [59048] [59046] [78971][40054] [59045] [42980] [59047]
Leucaenapennata (L.)Willd.	[33581]
Lysilomalatisiliquum (L.) Benth.	[93553]
Microlobiusfoetidus (Benth.) M.Sousa & G.Andrade.	[10057]
Mimosa asperata L. (3)	[22720] [5519] [39055]
Mimosa hamata Wilid. (14)	[64633] [7484] [7483] [90704] [90705] [68997] [22942][69036] [11878] [66169] [11877] [11876] [11852] [47152]
Mimosa himalayana Gamble (48)	[95943] [8486] [88307] [23654] [88308] [69797] [80555][91232] [17353] [27745] [9059] [14662] [88306] [65033][33703] [93229] [93228] [77457] [23545] [54746] [75340][30507] [75341] [70034] [22946] [22945] [22944] [91231][34846] [66154] [36233] [10207] [19526] [34935] [1946] [62021] [77456] [82686] [4008] [66480] [34201] [71897][91192] [91230] [35266] [28852] [91147] [91146]
Mimosa humilis Wilid.	[53712]
Mimosa pigra L.	[10012]
Mimosa polycarpa Burkart	[16911]
Mimosa polycarpa Pirotta var. spegazzinii Burkart	[22719] [59641]
Mimosaprainiana Gamble	[73825]

Mimosapudica L. (53)	[16989] [47151] [23547] [47707] [21525] [7803] [47370][46394] [45871] [94898] [22941] [94899] [49472] [39915][45881] [9058] [73130] [94742] [42708] [90733] [5113][27739] [69796] [92506] [82685] [92507] [38066] [38067][84993] [84992] [90000] [2639] [62911] [82684] [30497][66597] [91212] [91440] [80895] [92592] [33430] [88175] [38965] [7023] [88176] [88177] [22947] [33622] [92798][92797] [64637] [23653] [92796]
Mimosaquadrivalvis (Chapman) Barneby	[104312]
Mimosarubicaulis Lam. (46)	[21528] [21527] [87104] [85590] [33094] [85591] [21526][19584] [93412] [23655] [85589] [56267] [87103] [19634][19243] [87060] [75339] [531] [87059] [21656] [44084][92370] [79871] [93074] [43586] [8563] [93063] [22943][79872] [92707] [92708] [92369] [79574] [96674] [79575][93410] [21826] [79868] [58936] [32036] [79869] [96440] [69215] [29180] [96675] [79870]
Nasturtiumpudica L.	[85993]
Neptuniaoleracea Lour. (28)	[71658] [66182] [6552] [9060] [3541] [2638] [11717] [3509] [14652] [19400] [22677] [39164] [19496] [23010] [90115] [29373] [39297] [13220] [39161] [90439] [90438] [90437] [90116] [90114] [90117] [86884] [86882] [86883]
Neptuniapubescens Benth.	[55200]
Neptuniatriquetra (Vahl) Benth. (6)	[11853] [46521] [11854] [11992] [35105] [34729]
Nogradalzellii (Baker) Merr.	[60020]
Parkiabiglandulosa Wight & Arnott (5)	[25315] [60287] [70012] [54582] [67919]
Parkiatimoriana (DC.) Merr.	[22773] [22739]
Piptanthusnepalensis (Hook.) D.Don (6)	[4029] [4027] [55833] [48185] [59578] [18270]
Pithecellobiumdulce (Roxb.) Benth. (42)	[81079] [69499] [73807] [16233] [80523] [37477] [19587][6884] [89376] [2641] [13855] [82900] [34886] [83139][83779] [83780] [31002] [35030] [51040] [19367] [63458][23649] [40146] [13355] [94498] [94499] [98382] [98381][71950] [17352] [74633] [8475] [85654] [64621] [78254][549] [74817] [89375] [89374] [75941] [85653] [41283]
Prosopischilensis (Molina) Stuntz	[98156]
Prosopiscineraria (L.)Druce (10)	[5230] [7789] [21579] [6891] [39200] [33630] [11966] [22723] [4205] [22722]
Prosopisjuliflora (Sw.) DC.	[23014]

Trianthemarubicaulis Lam.	[38763]
Urarialatisiliqua (L.) Benth.	[93552]
Wikstroemiatriquetra (Vahl) Benth.	[5332]
Xyliaxylocarpa (Roxb.) Taub. (10)	[54404] [65912] [54761] [54411] [56368] [47778] [52757][64885] [4197] [4196]
Zapotecaformosa (Kunth) H.M.Hern.	[72194]
Total no of species 214 and specimen 1263	

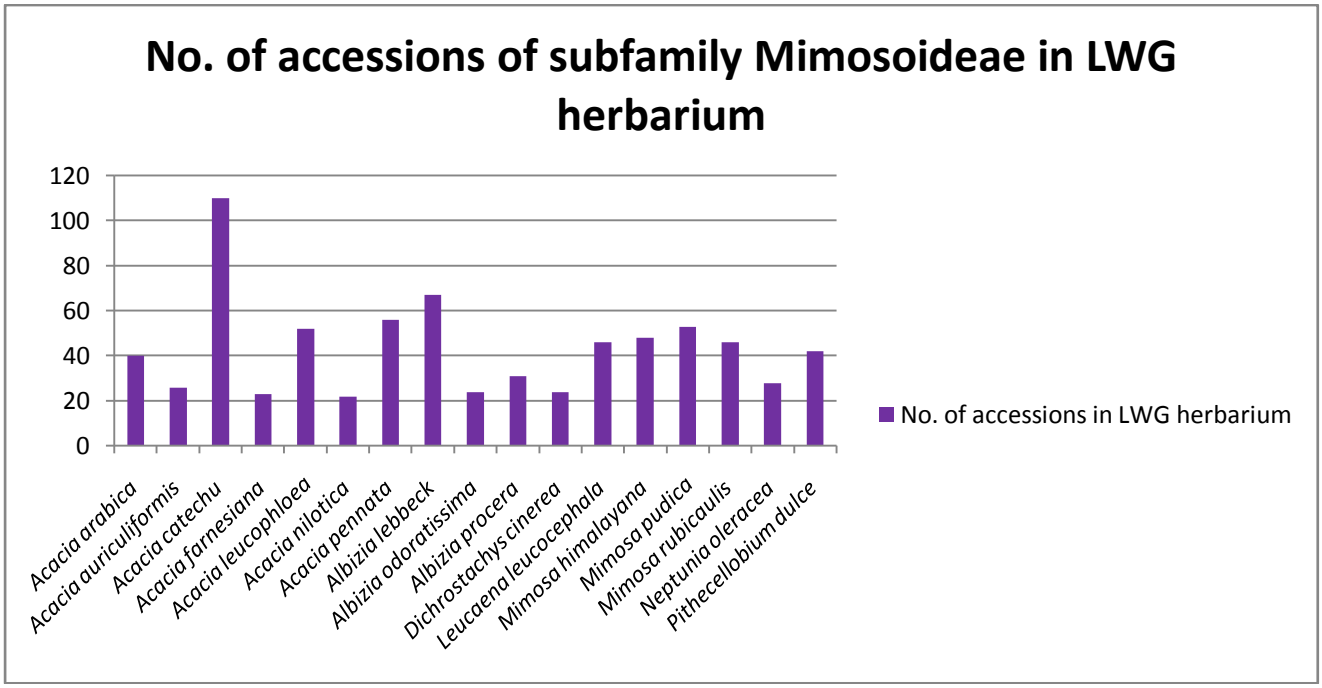

Fig 8: Graphical representation of accessions of subfamily Mimosoideae family Leguminoseae in LWG herbarium.

2.3 Sub family-Papilionoideae:

A sample test run using option 'Taxa' sub option 'Sub family' for Papilionoideae provides 795 species belonging to family Leguminosae in LWG herbarium and the sample list run is presented in Table 5. It revels maximum accessions of *Tephrosia purpurea (249)* followed by*Desmodium gangeticum (180), Indigofera linifolia (177), Desmodium triflorum (138), Alysicarpus vaginalis (128), Cajanus scarabaeoides (122), Crotalaria albida (121),*

Rhynchosia minima (119), Indigofera linnaei (118), Crotalaria medicaginea (114), Abrus precatorius (106), Dalbergia sissoo (102), Cicer arietinum (98), Indigofera heterantha (96), Flemingia strobilifera (95), Butea monosperma (90), Alysicarpus moifer (86), Teramnus labialis (78), Desmodium laxiflorum &Indigofera tinctoria (76), Alysicarpus rugosus (74), Indigofera cassioides (71),Indigofera cordifolia , Phyllodium pulchellum & Pongamia pinnata (66), Cajanus cajan (64), Crotalaria prostrata Willd. var. prostrata & Vicia sativa (60), Desmodium heterocarpon (58), Flemingia macrophylla, Lablab purpureus & Trifolium repens (57), Clitoria ternatea & Zornia diphylla (56), Medicago lupulina & Medicago polymorpha (53), Heylandia latebrosa (52), Crotalaria spectabilis (51), Lathyrus sativus (50), Aeschynomene indica, Alysicarpus bupleurifolius &Indigofera hirsuta (49), Vicia hirsuta (47), Indigofera trita (45), Lespedeza cuneata var. cuneate, Lotus corniculatus & Melilotus indicus (44), Codariocalyx motorius (43), Crotalaria juncea & Uraria picta (42), Desmodium velutinum ssp. velutinum & Millettia extensa (41), Alysicarpus longifolius &Desmodium oojeinense (40), Desmodium microphyllum (39), Cullen corylifolium & Lathyrus aphaca (37), Lespedeza bicolor & Tephrosia villosa (36), Indigofera glandulosa var. glandulosa (35), Indigofera dosua & Melilotus officinali sssp. alba (34), Pueraria tuberosa (33), Crotalaria calycina & Vigna vexillata (32), Crotalaria hirsute, Flemingia chappar & Sesbania bispinosa (31), Campylotropis stenocarpa, Crotalaria retusa, Medicago sativa, Mucuna pruriens , Prosopis juliflora, Trifolium pratense & Uraria lagopus var. lagopus (30), Crotalaria pallida, Pisum sativum, Vigna radiata (28), Astragalus leucocephalus , Crotalaria mysorensis , Flemingia prostrata, Pterocarpus marsupium & Sesbania sesban (27), Dumasia villosa, Vigna aconitifolia &Crotalaria prostrata (26), Desmodium elegans & Millettia peguensis (25), Alhagi maurorum, Astragalus chlorostachys, Crotalaria burhia , Crotalaria verrucosa & Spongiocarpella nubigena (24),Alysicarpus hamosus, Crotalaria alata, Crotalaria linifolia, Dalbergia lanceolaria,

Derris scandens, Parochetus communis & Spatholobus parviflorus (23), Rhynchosia rothii (22) Crotalaria orixensis &Indigofera oblongifolia (21)and remaining species are represented by less than 20 accessions in LWG herbarium as depicted in the Table 5.

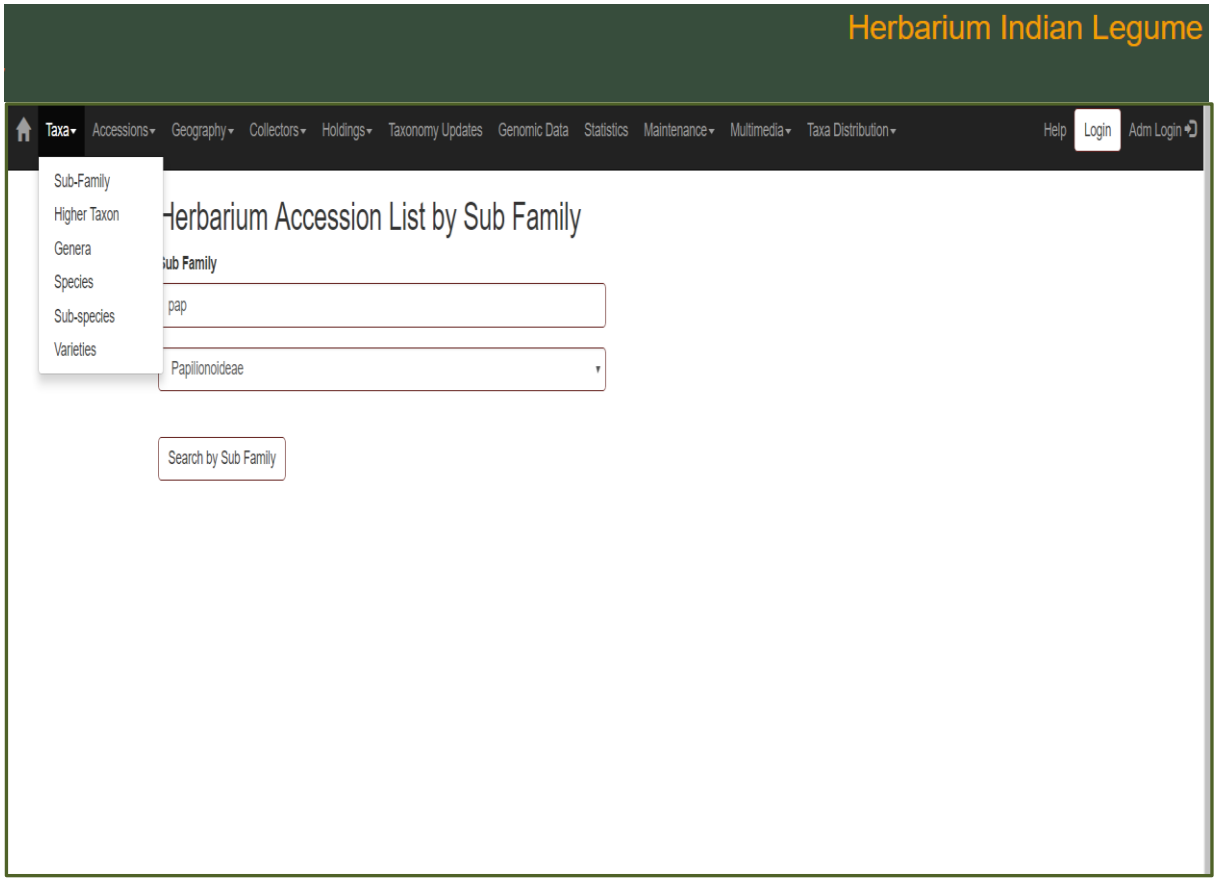

Fig 9: Screen shot showingsample test run from HILWeb option TAXA sub option subfamily Papilionoideae

Table 5: Sample test run showing 795 species belonging to of sub family Papiloinoideae of family Leguminosae

Species	Accession No.
Abelia triflora R.Br. ex Wall. (1)	[91476]
Abrus precatorius L. (106)	[92475][78770][65668][83111][92058][92055][90016][74794][92053][70028][80510][89350][79743][62024][88136][88137] [76293] [87823] [84408][88138][78772][76181] [76180][82915][78771][66063][89351][86800][89352][80509] [80849][96545][84407][90818][90819][81869] [84320] [81870] [91156] [75695] [93980] [68960][79744] [74418] [86798] [86799] [80508] [38949][13871][31726] [31150] [31119] [30957] [15110] [19642][30654][23193] [13393] [13345] [46642] [37921]

	[37301][36586][35806] [19653] [35174] [33349] [12602] [29443][19450][23476] [17547] [15062] [18231] [23633] [23634][23635][25684] [19253] [23194] [17396] [17356] [452][23499][19255] [23507] [17038] [19387] [19386] [28004][23540][19254] [21626] [44456] [46910] [40517] [45872][6694][22714] [43747] [7327] [7452] [21547] [42835][46512][39736]
Abrus pulchellus Thwaites (9)	[23530] [31913] [3975] [6539] [88184] [87046] [67636] [87047] [91106]
Adenaria carinata Meissner (1)	[101189]
Adenocarpus foliolosus (Aiton) DC. (1)	[60213]
Adhatoda microphyllum (Thunb.) DC. (1)	[33635]
Aeschynanthus parviflorus (D.Don) Spreng.. (1)	[70554]
Aeschynomene americana L. (1)	[63363]
Aeschynomene aspera L. (1)	[18805]
Aeschynomene indica L. (49)	[31683] [31006] [13870] [16295] [19617] [30467] [30465] [19289] [23238] [23483] [44441] [26232] [18538] [21900] [6947] [18580] [18641] [5626] [21564] [35054] [8464] [35150] [34725] [8559] [42475] [12374] [8465] [11879] [11880] [37689] [403] [22770] [70922] [80999] [60464] [80569] [86857] [81000] [88482] [81404] [58238] [56478] [88481] [82592] [71907] [78483] [86858] [82521] [78482]
Aganope thyrsiflora (Benth.) Polhill (3)	[42220] [49419] [50108]
Alhagi maurorum Medik. (24)	[27982] [38195] [37524] [36920] [7453] [16263] [6828] [11822] [23498] [19453] [23515] [53143] [35608] [19360] [402] [35607] [19586] [32686] [37365] [42632] [83201] [84835] [56465] [18778]
Alysicarpus auriculata Baker ex Brand. (1)	[33632]
Alysicarpus buplerifolius (L.)DC. (1)	[5110]
Alysicarpus bupleurifolius (L.)DC. (49)	[17990] [6829] [26298] [4161] [4164] [27758] [4160] [22703] [19306] [21654] [55626] [9001] [9002] [21429] [21428] [43226] [22702] [19313] [19314] [19315] [5111] [28895] [22888] [34239] [43584] [28896] [21921] [43585] [22889] [28010] [43079] [9000] [21655] [428] [27985] [82600] [82552] [82418] [71887] [82417] [81003] [81004] [74969] [68868] [83100] [81349] [92380] [66287] [92381]

Alysicarpus glumaceus (Vahl) DC. (1)	[66327]
Alysicarpus hamosus Edgew. (23)	[66355] [66832] [72277] [17989] [8997] [14637] [40858] [17486] [44597] [12751] [43598] [15685] [54959] [21911] [21427] [22886] [21912] [21913] [22884] [22887] [22885] [51857] [52120]
Alysicarpus heyneanus Wight & Arnott (3)	[3537] [3399] [29372]
Alysicarpus longifolius (Spreng.) Wight & Arn. (40)	[23625] [11934] [34764] [19307] [13349] [54150] [429] [7900] [7833] [4154] [14654] [14619] [47558] [19316] [40931] [4596] [5247] [6832] [6831] [6830] [11936] [8558] [19271] [11937] [16057] [33248] [5245] [11935] [11932] [11933] [21652] [92040] [77133] [77134] [77135] [92041] [69024] [65564] [68867] [67625]
Alysicarpus moifer (L.)DC. (86)	[88127] [88125] [88126] [74711] [84840] [62833] [71842] [66878] [66356] [70847] [93022] [82364] [83101] [82526] [76292] [83213] [83182] [82365] [76295] [82575] [76294] [68947] [82599] [30725] [35654] [16127] [15863] [54821] [35511] [35519] [35388] [30417] [33171] [35387] [36229] [11046] [33766] [33161] [3523] [12752] [34510] [22890] [13340] [13348] [21426] [13867] [22891] [22892] [425] [35061] [11182] [54284] [29632] [26299] [47366] [17485] [17394] [21919] [21920] [19312] [43352] [43351] [28200] [47364] [21918] [21649] [23629] [21648] [11983] [51010] [44502] [21914] [4517] [26282] [21923] [42990] [8484] [8485] [16254] [55651] [22705] [22704] [55795] [4158] [30926] [48568]
Alysicarpus pubescens J.S.Law (3)	[31711] [46058] [14730]
Alysicarpus rugosus (Willd.) DC. (74)	[43830] [21435] [21437] [39106] [21809] [43894] [21436] [39363] [8566] [34304] [45576] [21650] [46907] [21651] [5242] [43808] [34739] [47562] [42988] [4162] [48427] [35014] [22701] [34934] [54774] [35878] [34858] [47326] [34763] [36851] [34762] [43748] [21438] [34740] [22700] [19652] [28724] [30425] [19308] [21431] [19536] [19537] [430] [30987] [31011] [50944] [23627] [21430] [17991] [32098] [22894] [28762] [23628] [16256] [16255] [54194] [29395] [15670] [19527] [29274] [16474] [21434] [16056] [30424] [25080] [21433] [25081] [21432] [28871] [22893] [94227] [69932] [82589] [72127]
Alysicarpus scariosus (Spreng.) Thwaites (2)	[68846] [66877]
Alysicarpus scarious (Spreng.)Thwaites (1)	[7835]
Alysicarpus sp. (3)	[11939] [73556] [67630]
Alysicarpus tetragonolobus Edgew. (16)	[29617] [28894] [5246] [11938] [7902] [7901] [7480]

	[7834] [431] [34741] [42808] [16253] [41324] [11985] [21653] [33658]
Alysicarpus vaginalis (L.)DC. (127)	[5244] [43256] [47633] [18303] [18148] [18147] [7903] [4163] [19264] [4155] [4156] [26280] [4157] [18144] [4159] [46908] [19394] [21922] [21916] [21915] [18145] [26279] [5243] [23626] [45081] [18143] [18142] [18140] [21595] [44455] [26281] [17536] [21917] [19393] [6833] [47529] [6834] [6835] [17393] [47368] [47367] [19305] [18146] [26300] [19304] [44281] [426] [22878] [22876] [22882] [22875] [11984] [22874] [22877] [22873] [11930] [11931] [37175] [22879] [22880] [11694] [427] [14768] [35443] [30909] [34906] [22883] [19624] [22881] [36017] [22872] [22871] [12753] [55611] [16055] [8557] [8556] [39276] [22706] [39042] [12750] [55625] [22708] [22707] [40857] [12754] [8998] [8999] [91166] [103938] [66248] [91061] [66876] [91060] [66875] [66874] [66873] [86589] [86590] [91155] [91059] [70026] [91209] [88458] [88457] [77542] [90008] [77541] [102469] [77540] [77539] [62834] [82567] [68787] [68786] [88935] [90815] [91225] [74842] [68788] [88936] [81002] [91130] [67633] [84604] [82568] [59949]
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Amorphafruticosa L. (2)	[2923] [2922]
Amorpha glabra Poir. (1)	[4195]
Andrographis diphylla (L.)Pers. (1)	[33723]
Androsace geraniifolia Wallich (1)	[89752]
Antidesma pubescens Edgew. ex Baker (1)	[33636]
Aotus ericoides Smith (1)	[101634]
Arachis hypogaea L. (15)	[73357] [77767] [77766] [77765] [74519] [11855] [11993] [11994] [405] [47028] [33186] [19529] [14651] [13853] [53187]
Arachniodes sp. (1)	[61838]
Argyreia nervosa (Burm. f.) Bojer (1)	[63943]
Argyrolobium flaccidum (Royle) Jaub. & Spach (8)	[72684] [97968] [92027] [92028] [358] [46245] [23533] [23505]
Argyrolobium roseum (Cambess.) Jaub. & Spach (1)	[359]

Argyrolobium stenophyllum Boiss. (2)	[89938] [87814]
Astracantha longifolia (Lam.) Podl. (1)	[81007]
Astragalus (1)	[97421]
Astragalus adsurgens Pall. (2)	[2916] [2917]
Astragalus alpinus L. (3)	[2786] [2920] [2323]
Astragalus caespitosus (1)	[2918]
Astragalus canadensis L. (1)	[2919]
Astragalus candolleanus Royle (2)	[64434] [65396]
Astragalus chlorostachys Lindley (24)	[97743] [97742] [97744] [97745] [97746] [97749] [97750] [97754] [97747] [97748] [97751] [97752] [64089] [97753] [23645] [4181] [52092] [23646] [53269] [51626] [51728] [39719] [7267] [16302]
Astragalus danicus Nutt. var. *dasyglottis* (DC.) B.Boivin (1)	[63057]
Astragalus densiflorus Kar. & Kir. (1)	[97420]
Astragalus falconeri Bunge (1)	[29455]
Astragalus graveolens Benth. (8)	[28838] [46244] [28840] [23495] [44156] [97424] [97426] [97425]
Astragalus hamosus L. (3)	[54457] [45212] [43228]
Astragalus himalayanus Klotzsch. (6)	[4178] [23724] [44707] [4177] [4176] [64824]
Astragalus hosackioides Benth. ex Baker (1)	[60639]
Astragalus L.B.Chaudhary & Z.H.Khan (4)	[93776] [93780] [93777] [16286]
Astragalus latifolius Lam. (1)	[46242]
Astragalus leucocephalus Bunge (27)	[39428] [21583] [18098] [37964] [22756] [10194] [38202] [22755] [37963] [23537] [54550] [50623] [54986] [50511] [401] [97430] [97431] [97757] [97432] [97433] [97755] [97759] [97758] [70761] [70727] [97429] [97756]
Astragalus malacophyllus Benth. ex Bunge (6)	[97760] [97761] [97762] [97763] [97764] [97765]
Astragalus sp. Nutt. (1)	[63052]
Astragalus sp. Oliver (1)	[97422]

Astragalus sp. Pall. (2)	[67328] [2785]
Astragalus psilocentros Fisch. (1)	[16291]
Astragalus racemosus Pursh (1)	[97766]
Astragalus sp. (15)	[97416] [97428] [97415] [97419] [97414] [97413] [97418] [97427] [97417] [97408] [97409] [97410] [97411] [97412] [4180]
Astragalus strictus Graham (1)	[31712]
Astragalus subumbellatus Klotzsch. (4)	[46385] [35355] [34011] [48005]
Astragalus tribuloides Delile (1)	[55309]
Astragalus uttaranchalensis L.B.Chaudhary & Z.H.Khan (2)	[93779] [93778]
Astragalus verus Oliver (1)	[97423]
Atylosia *sp.* (2)	[67727] [67723]
Belamcandachinensis DC. (1)	[5982]
Bituminariabituminosa (L.) C.H.Stirt. (1)	[68365]
Boerhaviagangeticum (L.)DC. (1)	[38751]
Bolusanthusspeciosus (Bolus) Harms (6)	[22758] [46703] [44714] [44900] [44952] [58229]
Boseaampherstiana Hook.f. (1)	[51381]
Boseasp. (1)	[50849]
Bossiaearhombifolia DC. (1)	[103100]
Bossiaea sp. (1)	[87149]
Brachycorythis parviflora Schard. ex Wendl. (1)	[22166]
Brachysema celsianum Lem.. (1)	[100827]
Brachysema lanceolatum Meissner (1)	[100549]
Brya ebenus (L.)DC. (4)	[59737] [31423] [43284] [53377]
Bupleurum heterocarpon (L.)DC. (1)	[38473]
Butea monosperma (Lam.) Taub. (89)	[54055] [49980] [33072] [52556] [23538] [33920] [23210] [3540] [17822] [11726] [17821] [18370] [18372] [11828] [31732] [43744] [23614] [23613] [53641] [23142] [34491] [16924] [16845] [54436] [29644] [23425] [23141] [19451] [46632] [15577] [19559] [46634] [30492] [21585] [48775]

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Buteasp. (1)	[67446]
Buteasuperba Roxb. (15)	[80512] [64343] [69948] [69801] [26293] [26325] [54425] [22781] [23612] [31138] [19452] [26294] [19618] [26284] [53142]
Caesalpiniacucullatum Roxb. (1)	[14038]
Cajanumscarabaeoides (L.) Thouars (1)	[21584]
Cajanus cajan (L.) Millsp. (64)	[44287] [30480] [468] [36840] [23422] [30707] [30706] [44572] [23424] [47155] [17823] [40507] [23423] [21604] [25726] [34931] [36845] [19334] [16252] [16216] [19352] [16217] [13389] [13350] [2633] [29298] [32126] [29303] [16272] [16271] [16262] [13852] [38411] [26841] [23630] [45487] [31225] [19598] [38939] [469] [39051] [29724] [19333] [88050] [80918] [88049] [77771] [88051] [68723] [86777] [86775] [82812] [81318] [94228] [86776] [79722] [82811] [82813] [74971] [77770] [77769] [77768] [93242] [93241]
Cajanus crassus (King) Maesen (12)	[69799] [66230] [66694] [66624] [90058] [36520] [36518] [9024] [3989] [471] [22754] [52330]
Cajanus elongatus (Benth.) Maesen (1)	[4208]
Cajanus goensis Dalzell (2)	[71675] [71676]
Cajanus heynei Wight & Arnott (1)	[70341]
Cajanus mollis (Benth.) Maesen (2)	[50456] [3988]
Cajanus platycarpus (Benth.) Maesen (9)	[55641] [23528] [55642] [4207] [44908] [470] [31155] [55632] [22710]
Cajanus scarabaeoides (L.) Thouars (121)	[23196] [23197] [3730] [3729] [19582] [34241] [23195] [18575] [37617] [3797] [17231] [47662] [34686] [34685] [16999] [9023] [19581] [16843] [46913] [16148] [16147] [48795] [16077] [46519] [21643] [21644] [21645] [46850] [19524] [39162] [21882] [21883] [45652] [19571] [35135] [42488] [33523] [42541] [3514] [42063] [19570] [21884] [8460] [37251] [45333] [35394] [54871] [35395] [45301] [45215] [35396] [54791] [17400] [26305] [26312] [35803] [22897] [1956] [26311] [45214] [18527] [23714] [35301] [19270] [11050] [49678] [23127] [23126] [23615] [37479]

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Callerya atropurpurea (Wall.) Benth. (1)	[59727]
Callerya cinerea (Benth.) Schot (3)	[49208] [55742] [49197]
Calophaca sp. (1)	[5051]
Campylotropis eriocarpa (DC.) Schindl. (3)	[31898] [54957] [22717]
Campylotropis griffithii Schindl. (1)	[52011]
Campylotropis sp. (2)	[91457] [91458]
Campylotropis stenocarpa (Klotzsch) Schindl. (30)	[63884] [73303] [70737] [89762] [89761] [69622] [69621] [91151] [4017] [24408] [4019] [4018] [23428] [38421] [24409] [30074] [33998] [48821] [51339] [31909] [13193] [29181] [4170] [7460] [21540] [4169] [21539] [54917] [434] [21538]
Canavalia cathartica Thouars (1)	[82922]
Canavalia ensiformis (L.)DC. (18)	[86823] [70041] [77759] [86839] [68845] [56970] [69798] [56240] [29501] [14715] [52402] [33246] [26297] [51016] [34667] [27117] [19293] [460]
Canavalia gladiata (Jacq.) DC. (13)	[5240] [19327] [11899] [40790] [29584] [40847] [35049] [67632] [69247] [78632] [78633] [78634] [94232]
Canavalia hawaiiensis Degen. (1)	[63862]
Canavalia pubescens Hook. & Arn. (1)	[64029]
Canavalia rosea (Sw.) DC. (1)	[70030]
Caragana brevifolia Kom. (9)	[64769] [31860] [4144] [29175] [4146] [19056] [4145] [42921] [46341]
Caragana grandiflora (M.Bieb.)DC. (1)	[68419]
Caragana pygmaea (L.)DC. (1)	[23497]
Caragana sinica Lam. (1)	[22768]
Carissa retusa L. (1)	[33814]
Castanospermum australe A.Cunn.	[51019]

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Celosia gangeticum (L.)DC. (1) [38743]

Centrolobium paraense Tul. (1) [47359]

Centrosema pubescens Benth. (5) [25262] [47608] [25261] [91850] [91849]

Centrosema virginianum (L.) Benth. (2) [104305] [102764]

Chapmannia floridana Torr. & A.Gray (1) [101966]

Chorizema angustifolium Benth. (1) [102116]

Chorizema cordatum Lindley (2) [102283] [102281]

Chorizema reticulatum Meissner (1) [101186]

Chorizema sp. (2) [101187] [82217]

Cicer arientinium L. (3) [2420] [2419] [2417]

Cicer arietinum L. (98) [2482] [34936] [2430] [2463] [2426] [23139] [2480] [23133] [2440] [2453] [436] [2424] [2427] [2439] [2468] [2428] [30958] [2446] [2465] [2464] [39897] [6844] [2481] [2425] [2466] [2429] [2423] [2479] [16229] [2461] [2418] [2458] [2442] [29506] [2467] [2459] [7297] [2441] [2460] [2477] [2452] [2462] [2478] [435] [2454] [2455] [16228] [2456] [2422] [2476] [2444] [2457] [2421] [2443] [16227] [2435] [33288] [2470] [2432] [2450] [2447] [6845] [29297] [2486] [2445] [2433] [19597] [2472] [2436] [6846] [2434] [2437] [27983] [2448] [2471] [2438] [2449] [2473] [2487] [33174] [30490] [2475] [2451] [2484] [2469] [2474] [2431] [21548] [2483] [2485] [56282] [62392] [83054] [77874] [77875] [83055] [59492] [77657]

Cicer tragacanthoides Jaub. & Spach (1) [68196]

Clianthus puniceus (G.Don) Lindl. (1) [101818]

Cliloria ternatea L. (1) [94230]

Clitoria annua J.Graham (6) [15066] [23543] [14647] [7904] [19402] [7905]

Clitoria mariana L. (4) [49722] [49222] [49194] [104306]

Clitoria ternatea L. (56) [88941] [72894] [94649] [100315] [71919] [91720] [91722] [68775] [89339] [81198] [65739] [81065] [73885] [90440] [88942] [59077] [59076] [67945] [89337] [68774] [89340] [91721] [89338] [44446] [11917] [2632] [11918] [43814] [51024] [11911] [11912] [11913] [41183] [11914] [11915] [34683] [11916] [25774] [453] [13861] [31840] [5237] [5697] [19530] [6696] [27089] [19404] [5696] [16273]

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Codariocalyx gyroides (Link) Hassk. (7)	[43564] [26266] [13621] [26269] [26265] [31548] [9012]
Codariocalyx motorius (Houtt.) H.Ohashi (43)	[55987] [17543] [50288] [50287] [55786] [3767] [17511] [26247] [9013] [19375] [21855] [14310] [30331] [21852] [38518] [22937] [18537] [52794] [49035] [26246] [37030] [26245] [26244] [21854] [21853] [4122] [26243] [4121] [72412] [91131] [78792] [69568] [71193] [90829] [91260] [72269] [80519] [72268] [72270] [90017] [80518] [91261] [78793]
Codariocalyx motorius (Houtt.)H.Ohashi (1)	[421]
Collaea speciosa (Loisel.) DC. (1)	[61727]
Colutea atabajevii B. Fedtsch. (1)	[71760]
Colutea cilicica Boiss. & Balansa (1)	[68213]
Colutea nepalensis Sims. (1)	[15263]
Corola coronata L. (1)	[61637]
Cotoneaster buxifolia Wallich (1)	[4258]
Crotalaria acicularis Benth. (8)	[8967] [8968] [50652] [43428] [43131] [17500] [8966] [26291]
Crotalaria alata D.Don (23)	[39932] [21864] [17490] [15866] [17489] [23456] [29169] [23707] [44451] [21865] [21866] [77428] [77429] [87391] [77960] [93182] [75860] [70947] [76534] [76532] [93181] [75859] [76533]
Crotalaria albida Roth (121)	[66406] [73965] [66598] [66455] [74178] [73966] [97214] [81664] [74775] [69710] [69709] [66939] [66846] [85524] [76880] [85272] [74701] [69569] [66674] [70036] [74781] [97213] [81663] [87170] [87213] [72408] [91248] [87811] [90786] [73509] [91219] [91220] [89771] [71196] [63516] [89769] [90813] [87171] [89778] [92793] [89770] [90014] [87212] [92792] [65505] [40589] [4139] [14713] [2511] [17173] [39253] [8171] [23237] [23457] [23236] [21647] [23458] [30470] [34238] [8970] [34151] [29170] [30491] [4133] [23449] [30494] [23451] [23215] [30505] [4134] [4135] [19488] [19489] [40133] [8971] [39254] [40588] [23450] [14320] [32002] [26286] [24980] [26287] [26288] [26289] [26290] [21874] [13615] [54747] [21463] [53721] [1996] [32001] [21872] [35879] [3826] [36050] [36052] [19656] [31999] [19299] [19300] [48520] [30428] [331] [53105] [53106] [21873] [30429] [34752] [34751] [48572] [21859] [52415] [23600] [21860] [23599] [23598] [330] [53720] [53719]

Crotalaria allophylla Thulin. (1)	[352]
Crotalaria anthyllopsis Baker (1)	[353]
Crotalaria berteroana DC. (1)	[42034]
Crotalaria bialata Schrank (3)	[65502] [77430] [90012]
Crotalaria biflora L. (1)	[70324]
Crotalaria burhia Benth. (24)	[60265] [63177] [69028] [60365] [69033] [13352] [14617] [21646] [15828] [55652] [39541] [6543] [26001] [54524] [19533] [19650] [19285] [7568] [22698] [39202] [19362] [23601] [7906] [42422]
Crotalaria calycina Schrank (32)	[15568] [42177] [44452] [46243] [21868] [15569] [21449] [21448] [47508] [15683] [30456] [55661] [28727] [23455] [4141] [34055] [22694] [75861] [80526] [63478] [63479] [80527] [70450] [65471] [92391] [97883] [91157] [60734] [92048] [92042] [87660] [92394]
Crotalaria capitata Benth. ex Lam. (1)	[56296]
Crotalaria chinensis L. (2)	[28726] [31950]
Crotalaria clarkei Gamble (1)	[61688]
Crotalaria cunninghamii R.Br. (2)	[101453] [100318]
Crotalaria cuspidata Taub. (1)	[72076]
Crotalaria cytisoides DC. (3)	[49142] [14716] [50322]
Crotalaria digitata Hook. (1)	[8043]
Crotalaria distans Benth. (1)	[347]
Crotalaria dura J.M.Wood & M.S.Evans (1)	[344]
Crotalaria evolvuloides Benth. (2)	[9973] [51151]
Crotalaria ferruginea Benth. (8)	[21454] [18277] [8552] [32005] [54003] [32004] [3534] [33923]
Crotalaria filipes Benth. (4)	[21447] [19655] [5969] [70010]
Crotalaria fysonii Dunal (2)	[69098] [69082]
Crotalaria globifera E.Mey. (2)	[357] [356]
Crotalaria hebecarpa (DC.) Rudd. (1)	[36026]
Crotalaria hirsuta Wilid. (31)	[34856] [14711] [23222] [29068] [23223] [47528] [14710] [23225] [34336] [39393] [23224] [42434] [14945] [48669]

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Crotalaria humifusa Benth. (5)	[39485] [329] [17501] [53718] [3746]
Crotalaria incana L. (5)	[348] [31857] [31856] [29309] [84599]
Crotalaria juncea L. (42)	[81871] [74723] [78642] [74724] [77872] [77873] [91221] [75867] [75866] [74782] [80848] [76731] [76729] [76732] [76730] [66847] [45347] [43418] [34175] [23445] [3536] [11893] [19569] [34823] [12586] [26828] [6697] [31998] [31997] [31996] [337] [21867] [23448] [8251] [44594] [23447] [19463] [23446] [7907] [11894] [48776] [5119]
Crotalaria laburnifolia (Baker f.) Verd. ssp. *australis* (Baker f.) Polhill (2)	[354] [355]
Crotalaria laburnifolia L. (10)	[55388] [51007] [22709] [27093] [349] [33024] [350] [86534] [86535] [86533]
Crotalaria laevigata Lam. (1)	[70022]
Crotalaria leptostachya Benth (1)	[14709]
Crotalaria linifolia L. (23)	[42057] [23462] [23452] [23453] [23454] [23461] [8969] [23460] [30334] [13565] [5980] [21863] [21862] [21861] [31820] [47561] [47600] [5960] [7474] [70032] [70037] [66407] [70046]
Crotalaria lotoides Benth. (1)	[351]
Crotalaria medicaginea Lam. (114)	[16299] [17276] [27616] [28645] [54839] [15335] [338] [16267] [16998] [23231] [55922] [17198] [17210] [17137] [19481] [19542] [19480] [19479] [23444] [21452] [21451] [16236] [16237] [30414] [340] [23597] [19378] [23463] [23464] [23465] [23467] [341] [21606] [21450] [339] [19575] [19626] [19625] [19277] [23624] [19297] [23466] [36663] [35354] [11250] [50079] [31767] [34193] [34232] [46927] [6847] [50759] [43575] [4137] [13354] [8382] [6544] [6698] [8459] [46905] [42846] [47638] [11038] [4140] [11809] [46928] [39256] [34160] [11895] [39385] [45083] [39020] [45082] [45077] [39255] [11896] [34663] [8504] [34670] [34693] [4138] [45311] [14145] [11897] [8553] [60737] [66161] [91164] [90318] [90316] [76737] [90317] [91245] [76736] [74509] [91403] [58887] [71965] [58886] [71419] [75865] [59575] [91079] [90319] [82090] [82089] [80966] [91080] [73267] [86892] [91140] [86891] [75864] [86890]
Crotalaria mysorensis Roth (27)	[90197] [72621] [90196] [76735] [74779] [71894] [76734] [35491] [21871] [36841] [23221] [21459] [21458] [34971] [34978] [54895] [43383] [19576] [36051] [21460] [16013] [31037] [8551] [16034] [23443] [36846] [34904]

Crotalaria nana Burm.f. (1)	[51509]
Crotalaria occulta Benth. (4)	[49597] [49266] [72549] [56062]
Crotalaria orixensis Wilid. (21)	[71828] [68865] [72389] [72390] [71124] [32087] [35488] [23220] [18276] [31167] [23216] [23219] [23218] [23217] [47530] [43692] [14714] [37397] [30416] [34857] [34834]
Crotalaria pallida Aiton (28)	[8965] [50500] [39440] [37988] [12377] [23232] [55425] [50896] [24944] [30501] [342] [12378] [50371] [32078] [49866] [80525] [68981] [70040] [94647] [100319] [102468] [70021] [80524] [67991] [69132] [69133] [82246] [82247]
Crotalaria paniculata Wilid. (1)	[2623]
Crotalaria prostrata Willd. (27)	[46902] [46633] [46903] [46923] [14712] [46924] [4136] [52624] [19288] [66408] [66589] [66588] [87207] [74970] [87064] [76881] [87258] [87259] [91139] [76531] [84593] [70031] [84612] [73203] [84598] [78643] [76530]
Crotalaria prostrata Willd. var. *prostrata* Willd. (60)	[92384] [69803] [68966] [72324] [72327] [68847] [92789] [92788] [67058] [71032] [92385] [23436] [23442] [21597] [23441] [23229] [22699] [35131] [30431] [26292] [23440] [23433] [21453] [21592] [8972] [21870] [34849] [44346] [23431] [23432] [21810] [34852] [23230] [21869] [23434] [39441] [23435] [35219] [30432] [35389] [19487] [43171] [23228] [23437] [37989] [47564] [38009] [43066] [23013] [23602] [37659] [23439] [23438] [35319] [19484] [36145] [19485] [35386] [19486] [2204]
Crotalaria pusilla DC. (7)	[25696] [25698] [19370] [25697] [25695] [54972] [103937]
Crotalaria quinquefolia L. (1)	[31902]
Crotalaria ramosissima Roxb. (4)	[5975] [14904] [19490] [70038]
Crotalaria retusa L. (30)	[59036] [75863] [75862] [69131] [71856] [78640] [69130] [62839] [59037] [78641] [43244] [7110] [36921] [43687] [18504] [47142] [21462] [36922] [40266] [45553] [34724] [50084] [30455] [13488] [22697] [22696] [5970] [11987] [50080] [22695]
Crotalaria rigida B.Heyne (1)	[70011]
Crotalaria sessiliflora L. (3)	[97810] [97811] [10660]
Crotalaria sp. (16)	[37982] [2624] [67631] [73967] [67641] [67627] [66078] [67639] [66079] [67624] [72352] [67731] [67730] [67726] [103626] [76879]
Crotalaria spectabilis Roth (51)	[69618] [84961] [69128] [69129] [73202] [69617] [84960] [91044] [65758] [87420] [98526] [90011] [91244] [90787] [82838] [66810] [91249] [76733] [66593] [70079] [67012] [70331] [91043] [56382] [87421] [91045] [21445] [21446]

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Crotalaria sphaerocarpa DC. (1)	[346]
Crotalaria tetragona Andrews (1)	[336]
Crotalaria trichotoma Bojer (8)	[24942] [343] [24941] [24940] [24702] [24943] [24701] [46669]
Crotalaria trifoliastrum Wilid. (1)	[51156]
Crotalaria triquetra Dalzell (5)	[23469] [23468] [7908] [13566] [67626]
Crotalaria verrucosa L. (24)	[70080] [72114] [70095] [51003] [13869] [2622] [13868] [50083] [18053] [46252] [53373] [23226] [47143] [23227] [32801] [47629] [46906] [39442] [13489] [41213] [19482] [19483] [50082] [55390]
Crotalaria vestita Baker (2)	[68864] [71123]
Crotalaria virgulata Klotzsch (1)	[345]
Cullencorylifolium (L.)Medik. (37)	[19552] [23541] [35026] [50453] [15567] [19361] [19534] [50452] [34944] [42613] [34930] [30876] [19388] [36055] [19398] [19401] [21549] [16231] [19358] [19528] [15682] [19641] [46513] [19461] [17992] [50816] [53709] [40709] [19357] [81240] [79955] [77959] [79956] [72391] [66229] [94226] [68873]
Cullenplicatum Delile (1)	[18271]
Cyamopsispsoraloides DC. (6)	[23639] [11963] [53186] [53180] [13408] [379]
Cyamopsistetragonoloba (L.) Taub. (16)	[46059] [21545] [16261] [19420] [10985] [10986] [5322] [16278] [44085] [76941] [86774] [76940] [76939] [76942] [86773] [75858]
Cymbopogondiphylla (L.)Pers. (1)	[5616]
Cyrtococcumrepens L. (1)	[38595]
Cytisusalbus Link. (1)	[60454]
Cytisushybrid (1)	[60071]
Cytisusscoparius (Linn.)Link (5)	[60073] [73476] [100322] [73475] [43659]
Cytisus sp. (1)	[60128]
Dalbergia assamica Benth. (3)	[56168] [60489] [49269]
Dalbergia candenatensis (Dennst.)Prain	[17722]

(1)

Dalbergia cultrata Graham (1)	[46253]
Dalbergia dalbeergiods Guill. & Perr. (1)	[68735]
Dalbergia horrida Nimmo var. *horrida* (Dennst.) Mabb. (1)	[67640]
Dalbergia lanceolaria L.f. (23)	[88808] [98414] [98418] [98417] [98416] [98415] [83721] [67934] [88806] [83722] [91141] [82646] [82645] [71439] [82647] [91142] [93015] [93021] [46246] [41078] [21930] [25334] [22761]
Dalbergia lanceolaria L.f. ssp. *paniculata* (Roxb.) Thoth. (5)	[69800] [62618] [69909] [68843] [69216]
Dalbergia latifolia Roxb. (17)	[64283] [64868] [77876] [79930] [77877] [79570] [79929] [79928] [79571] [30271] [27397] [14720] [51023] [28019] [19661] [28018] [5231]
Dalbergia melanoxylon Guill. & Perr. (1)	[59711]
Dalbergia pinnata (Lour.) Prain (6)	[72833] [60444] [59804] [61639] [14719] [55847]
Dalbergia pinnata (Lour.) Prain var. *acaciifolia* (Dalzell) Thoth. (1)	[70068]
Dalbergia rimosa Roxb. (5)	[72854] [55097] [46254] [49147] [52306]
Dalbergia rubiginosa Roxb. (1)	[46249]
Dalbergia sericea G.Don. (4)	[484] [25332] [25333] [485]
Dalbergia sissoo DC. (103)	[31336] [19478] [11612] [43608] [19477] [11549] [23607] [19417] [50921] [23605] [19621] [23606] [14316] [19620] [30486] [30691] [30704] [28005] [45146] [27830] [19418] [38701] [49027] [23471] [19444] [19447] [21612] [22896] [21613] [48933] [29725] [21513] [21512] [21511] [34687] [23472] [480] [21929] [481] [482] [6470] [483] [13342] [36826] [23402] [17336] [478] [23404] [18134] [15106] [23713] [23403] [479] [96591] [95948] [79724] [88812] [88813] [70755] [82651] [97105] [93483] [93482] [91215] [73205] [91237] [79725] [86031] [86030] [83534] [90193] [81656] [56268] [89779] [76244] [89780] [83535] [83536] [82763] [82762] [82652] [75465] [75466] [82648] [82649] [81864] [81863] [58973] [82650] [83812] [83813] [97106] [96598] [96596] [96595] [85178] [80852] [84678] [85177] [96593] [96592] [67922] [96597]
Dalbergia spinosa Roxb. (1)	[59716]
Dalbergia stipulacea Roxb. (3)	[60756] [49263] [54399]
Dalbergia volubilis Roxb. (13)	[22684] [52533] [22685] [31887] [23208] [46248] [46247]

	[36351] [87799] [64698] [64924] [74788] [79723]
Dalhousiea bracteata (Roxb.) Benth. (1)	[49065]
Daviesia brevifolia Lindley (1)	[100323]
Daviesia corymbosa Smith (2)	[100324] [100325]
Daviesia crenulata Turcz. (1)	[60552]
Daviesia elongata Benth. (1)	[100326]
Daviesia genistifolia A.Cunn. (1)	[100327]
Daviesia latifolia R.Br. (1)	[100328]
Daviesia pectinata Lindley (1)	[100329]
Daviesia ulicina Smith (2)	[100330] [100331]
Dendrolobium triangulare (Retz.) Schindl. (9)	[70042] [98038] [92389] [66326] [92388] [14319] [23511] [23582] [1945]
Dendrolobium triangulare (Retz.)Schindl. (1)	[9003]
Dendrolobium triangulare Wallich (5)	[38516] [39002] [24989] [21414] [42711]
Dendrolobium triangulare Wallich ssp. *triangulare* (Retz.) Schindl. (4)	[3996] [55255] [18669] [22934]
Derrisbenthamii (Thwaites) Thwaites (1)	[69996]
Derris brevipes (Benth.) Baker (1)	[72859]
Derris canarensis (Dalzell) Baker (1)	[70039]
Derris elliptica (Wall.) Benth. (2)	[45906] [45905]
Derris ferruginea (Roxb.) Benth. (1)	[29496]
Derris hainesiana Thoth. (1)	[9975]
Derris heyneana (Wight & Arn.) Benth. (1)	[70045]
Derris indica (Lam.)Bennet (1)	[79946]
Derris microphylla Baker (1)	[31553]
Derris scandens (Roxb.) Benth. (23)	[3535] [18730] [7021] [2634] [23209] [37052] [486] [22678] [21582] [3515] [15611] [4527] [6101] [9033] [43526] [9034] [71418] [64768] [65914] [65991] [61960] [83150] [72640]

Derris trifoliata Lour. (4)	[30273] [44808] [45904] [5962]
Desmodiastrum racemosum Baker (1)	[32931]
Desmodiastrum racemosum Baker var. *rotundifolium* (Baker) A.Pramanik & Thoth. (1)	[32431]
Desmodiastrum rotundifolium (Michx.) DC. (1)	[29168]
Desmodium brachystachyum Schlecht. (1)	[2509]
Desmodium brevipes Benth. (1)	[38520]
Desmodium canadense (L.)DC. (1)	[60113]
Desmodium concinnum DC. (10)	[49579] [416] [3818] [49590] [3875] [49569] [3876] [3819] [19547] [13195]
Desmodium confertum DC. (5)	[9004] [412] [86150] [86151] [70821]
Desmodium dichotomum (Willd.) DC. (2)	[74975] [68872]
Desmodium diphylla (L.)Pers. (1)	[5628]
Desmodium elegans DC. (26)	[47047] [19606] [47052] [54670] [43012] [22938] [22909] [22910] [2227] [19343] [50499] [53413] [1825] [10201] [10202] [16284] [51449] [19342] [14731] [4118] [51447] [51653] [65239] [64446] [98075] [64689]
Desmodium gangeticum (L.)DC. (180)	[90768] [90767] [76938] [93951] [62394] [90194] [74976] [90195] [93186] [93185] [92043] [92044] [92052] [92056] [92065] [92367] [62027] [92368] [92476] [92784] [92785] [93934] [91120] [63782] [90828] [90827] [73197] [81996] [79727] [87210] [79726] [87169] [66805] [70384] [87411] [80515] [80965] [80896] [85661] [87800] [87211] [66058] [88453] [82767] [88454] [65550] [81657] [66804] [68778] [68777] [81997] [69494] [81658] [26480] [5631] [35141] [21418] [21417] [11614] [22911] [44516] [415] [11864] [11863] [17348] [47051] [6948] [43839] [34943] [47049] [413] [414] [43697] [22912] [51009] [47535] [22913] [33096] [17278] [7909] [19580] [47740] [35564] [41804] [18544] [21833] [11048] [22914] [22915] [22917] [22918] [22919] [22920] [22921] [22922] [35323] [26272] [26270] [19553] [22916] [5629] [21591] [31114] [30479] [30478] [30477] [14151] [31714] [13718] [6545] [29568] [30500] [30503] [14732] [5632] [46742] [46741] [46740] [46738] [21657] [21658] [21640] [21639] [5630] [13392] [29398] [6853] [6854] [6855] [6856] [22743] [22744] [28007] [17150] [27984] [27714] [34757] [6852] [6851] [6699] [29397] [6700] [16264] [50173] [16693] [28744] [6848] [6849] [6850] [34331] [27626] [19278] [9005] [9006]

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Desmodium griffithianum Benth. (2)	[51651] [49237]
Desmodium heterocarpon (L.)DC. (57)	[47260] [17519] [26271] [17520] [4126] [37522] [34758] [23235] [22924] [23234] [22925] [52429] [23583] [21828] [38607] [17484] [26309] [36120] [4120] [19591] [4123] [21840] [1939] [21841] [21842] [87247] [62619] [66848] [70798] [73195] [73196] [92915] [92556] [87246] [71195] [92916] [92557] [80516] [98039] [96689] [96690] [96691] [83671] [88150] [97970] [97971] [83672] [97972] [90817] [90816] [56471] [80517] [86187] [86186] [71733] [96688] [88149]
Desmodium khasianum Prain (3)	[61535] [49349] [49348]
Desmodium laxiflorum DC. (76)	[19351] [3809] [39383] [21827] [34833] [3810] [408] [37523] [3397] [409] [3812] [3811] [16250] [16249] [22752] [35289] [7478] [15581] [7915] [7914] [7913] [21851] [21850] [7912] [7911] [21849] [21848] [21847] [22936] [21845] [21846] [49294] [38752] [38750] [26273] [31014] [31046] [19555] [7910] [19556] [47527] [15565] [31015] [41315] [83169] [83168] [59956] [71185] [67638] [97965] [70428] [70408] [86389] [86388] [86387] [79731] [79730] [71368] [71367] [88385] [69933] [88384] [91160] [91165] [91235] [91236] [88383] [71366] [88450] [79728] [71242] [88451] [88452] [79729] [71239] [89766]
Desmodium lineatum (Michx.) DC. (1)	[101959]
Desmodium marilandicum Darl. (1)	[104307]
Desmodium microphyllum (Thunb.) DC. (39)	[86468] [86470] [71369] [87403] [93577] [93578] [86469] [90814] [91119] [90812] [65305] [66470] [87402] [70814] [70780] [61903] [70685] [61203] [70820] [1858] [17521] [55400] [3731] [40758] [23728] [3732] [34736] [10199] [10200] [2491] [21415] [31040] [19441] [422] [17522] [13617] [40653] [50320] [3513]
Desmodium multiflorum DC. (20)	[19551] [3769] [31606] [1815] [3778] [3833] [38517] [48999] [411] [48998] [36842] [12826] [1837] [3734] [19350] [1836] [59811] [60459] [64445] [65234]
Desmodium neomexicanum A.Gray (1)	[83162]
Desmodium oojeinense (Roxb.) H.Ohashi (40)	[56979] [67059] [75436] [81672] [78245] [77489] [73735] [82769] [73734] [81671] [78246] [82768] [78961] [91699] [60466] [78962] [31609] [52690] [46911] [30484] [30511] [53287] [22771] [52513] [46256] [30529] [30504] [26253] [26255] [26254] [26252] [26251] [26250] [23140] [26249] [53715] [29347] [4015] [4014] [40856]

Desmodium polycarpon (Poir.) DC. (2)	[3728] [417]
Desmodium procumbens DC. (1)	[25705]
Desmodium pubescens Edgew. ex Baker (1)	[33763]
Desmodium sequax Wallich (4)	[3814] [3813] [83170] [83172]
Desmodium sp. (8)	[84590] [67671] [67667] [66193] [67629] [91502] [67623] [67637]
Desmodium spirale Griseb. (1)	[50522]
Desmodium strictum (Pursh) DC. (2)	[56399] [102308]
Desmodium tenuifolium Torr. & A.Gray (4)	[52378] [49900] [52377] [50487]
Desmodium triflorum (L.)DC. (138)	[31140] [11539] [37174] [35819] [9014] [31113] [43632] [22926] [22927] [22928] [50894] [8179] [29621] [53372] [29629] [37457] [19443] [40380] [19442] [35555] [6225] [40518] [26241] [26242] [21829] [46517] [46520] [51008] [19531] [21830] [38955] [21832] [50819] [15340] [21637] [47701] [22929] [46386] [22933] [46387] [22930] [22931] [22932] [11047] [18009] [31036] [19339] [19347] [19348] [39722] [11856] [39936] [9018] [44052] [19337] [23577] [11706] [9017] [16868] [23576] [17140] [44185] [45144] [19338] [47046] [49800] [45300] [54729] [47048] [9019] [47050] [45394] [26478] [22745] [26474] [11960] [23575] [33765] [40150] [9015] [46112] [19371] [37459] [17537] [17525] [19372] [6701] [419] [12756] [9016] [50461] [32092] [6546] [17508] [26295] [420] [40070] [50338] [19446] [418] [16280] [92390] [86889] [86888] [101942] [86887] [82571] [82512] [92393] [82511] [82387] [92045] [79285] [90826] [91098] [91096] [91161] [87168] [93013] [90825] [91162] [90824] [90823] [92047] [92061] [80522] [76945] [91102] [74926] [92046] [78791] [60724] [71924] [70802] [65504] [66799] [64344] [60294]
Desmodium uncinatum (Jacq.) DC. (3)	[91817] [91816] [46251]
Desmodium velutinum (Willd.) DC. (21)	[3794] [35487] [36119] [29056] [23726] [40668] [26267] [92049] [74974] [94241] [79945] [73508] [91057] [92051] [93929] [66370] [91058] [65527] [91149] [92050] [90010]
Desmodium velutinum (Willd.) DC. ssp. *velutinum* (Willd.) DC. (35)	[74783] [92801] [94260] [92787] [94259] [92786] [92802] [21844] [21831] [34747] [49200] [41041] [24988] [29305] [37656] [21843] [21839] [21838] [21837] [21835] [21834] [22923] [21836] [26268] [18241] [17482] [19336] [21589] [9011] [19376] [17510] [19298] [21638] [4119] [17483]
Desmodium verrucosa L. (1)	[33633]

Dicerma biarticulatum (L.)DC. (1)	[2630]
Dicliptera albida Roth (1)	[33811]
Dillwynia cinerascens R.Br. (2)	[100336] [100335]
Dillwynia ericifolia Smith (1)	[100342]
Dillwynia floribunda Smith (2)	[101601] [101581]
Dillwynia genistifolia . Cunn. (1)	[104098]
Dillwynia glycinaefolia Smith (1)	[103742]
Dillwynia juniperina Lodd. (2)	[101553] [103109]
Dillwynia parvifolla Sims. (1)	[103741]
Dillwynia patula (F.Muell.) F.Muell. (1)	[101093]
Dillwynia retorta (Wendl.) Druce (2)	[102276] [102272]
Dillwynia uncinata (Turcz.) J.M.Black (1)	[102271]
Dipsacus trifoliata L. (1)	[33817]
Dolichandrone purpurea (L.)Pers. (1)	[5656]
Dolichos sp (1)	[73659]
Dolichos trilobus Klein (1)	[7916]
Dolichos trilobus Klein ssp. *trilobus* L. (1)	[69069]
Dorycnium pentaphyllum Scop. (1)	[62734]
Dumasia villosa DC. (26)	[71815] [82221] [86233] [88456] [89953] [86232] [86231] [66625] [88455] [66695] [91247] [66767] [91246] [73304] [55691] [52347] [49725] [454] [10203] [49221] [49186] [455] [49593] [50375] [53109] [4200]
Eleiotis monophyllos (Burm.f.)DC. (10)	[32711] [2631] [53525] [22940] [51011] [92474] [92473] [69012] [70280] [70250]
Elythrina suberosa Roxb. (1)	[91274]
Eriosema chinense Vogel (10)	[76555] [76557] [76556] [66498] [76554] [4201] [4117] [21580] [49612] [21887]
Ervum sissoo DC. (1)	[38700]
Erythraea blakei R.Parker (1)	[5665]
Erythrina arborescens Roxb. (6)	[4114] [4115] [93281] [87167] [87164] [93227]

Erythrina blakei R.Parker (4)	[68737] [82068] [10685] [10684]
Erythrina crista-galli L. (1)	[4113]
Erythrina fusca Lour. (1)	[69972]
Erythrina sp. (2)	[103734] [38828]
Erythrina suberosa Roxb. (13)	[11991] [7481] [17621] [21575] [5976] [95946] [81874] [91250] [85710] [85600] [85711] [85709] [70092]
Erythrina variegata L. (5)	[68327] [51017] [7572] [5977] [5232]
Erythrina vespertilio Benth. (2)	[98413] [104308]
Eutaxia microphylla (R.Br.) J.M.Black (1)	[100552]
Evolvulus arizonicus A.Gray (1)	[3393]
Flemingia chappar Benth. (31)	[19651] [19290] [53642] [3525] [19566] [19519] [22736] [46568] [40737] [22907] [63542] [66483] [76563] [76564] [78774] [62398] [78775] [78776] [78778] [78773] [78779] [84907] [84908] [84025] [84026] [74778] [56328] [93568] [85016] [85017] [84027]
Flemingia congesta Roxb. ex W.T.Aiton (18)	[79741] [79742] [66938] [78777] [3863] [19465] [19467] [52404] [52749] [3862] [53722] [55650] [52436] [477] [26310] [52496] [53708] [8155]
Flemingia fruticulosa Wallich (14)	[22908] [41181] [42176] [36658] [10204] [86093] [71716] [91386] [86095] [88448] [86094] [71841] [88449] [70771]
Flemingia involucrata Benth. (1)	[69804]
Flemingia macrophylla (Willd.) Merr. (57)	[82253] [86123] [87181] [87182] [91105] [91104] [72261] [86457] [72260] [86456] [86455] [89112] [87792] [83308] [87113] [82254] [87808] [87111] [83690] [69713] [69714] [69715] [69716] [83689] [86746] [87112] [86391] [89110] [77004] [85065] [77005] [85064] [80582] [71430] [86328] [77413] [77414] [22902] [49769] [39169] [21628] [39116] [22901] [55680] [23712] [17512] [53590] [51404] [21905] [21904] [19522] [23544] [19520] [36387] [3822] [3821] [26283]
Flemingia macrophylla (Willd.) Merr. var. *nana* (3)	[80584] [80514] [80583]
Flemingia paniculata Benth. (8)	[79738] [79740] [79739] [52512] [1970] [52623] [9021] [52622]
Flemingia procumbens Roxb. (5)	[22904] [41358] [22903] [1974] [47365]
Flemingia prostrata Roxb. (27)	[22900] [4502] [18243] [18572] [18664] [19274] [25701] [22737] [22898] [22899] [22738] [40738] [21906] [30532]

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Flemingia strobilifera (L.) W.T.Aiton (95)	[77957] [93275] [69345] [77958] [91085] [91854] [79942] [79943] [79947] [79948] [92063] [85019] [69236] [91855] [82759] [85018] [82758] [69226] [93277] [78781] [92060] [79737] [71363] [71364] [81660] [71365] [81659] [92059] [70043] [69712] [78780] [69711] [91252] [79736] [87363] [92062] [69566] [69567] [79735] [69657] [69658] [79734] [70003] [77956] [91067] [90013] [91076] [91068] [74777] [91077] [89767] [89768] [74323] [74322] [49797] [23427] [44517] [48289] [23644] [52324] [21572] [30076] [21570] [30077] [41308] [48375] [26264] [26263] [19523] [23426] [30512] [13619] [22906] [22905] [52422] [1846] [8167] [1931] [19521] [40937] [19429] [476] [28866] [52326] [19567] [52325] [23643] [9020] [5235] [54495] [4518] [21903] [53560] [21571] [21902]
Galactia elliottii Nutt. (3)	[101921] [64476] [102706]
Galactia regularis (L.)Bab. (1)	[63768]
Galactia sp. (1)	[93913]
Galactia striata Wight & Arnott var. *villosa* (1)	[70374]
Galactia tenuiflora (Willd.) Wight & Arn. (16)	[94233] [83848] [83847] [65662] [62617] [62616] [58223] [25225] [26285] [25308] [23539] [23501] [23502] [23503] [23504] [55968]
Galega officinalis L. (2)	[61627] [62735]
Gastrolobium dilatatum (Benth.) G. Chandler & Crisp (2)	[101464] [101463]
Gastrolobium ilicifolium Meissn. (1)	[62207]
Gastrolobium pusillum Meissn. (1)	[104316]
Genista canariensis L. (2)	[100320] [100321]
Genista hispanica L. (1)	[60242]
Genista microphylla DC. (1)	[60416]
Genista monspessulana L. (1)	[69080]
Genista pilosa L. (1)	[101999]
Genista suanica Schisch. (1)	[68192]
Geranium lupulina L. (1)	[38640]
Gliricidia sepium (Jacq.) Walp. (3)	[91278] [65432] [69890]

Glycine canescens (F.Muell.) Benth. (1)	[101566]
Glycine clandestina Wendl. (2)	[100306] [100551]
Glycine falcata Benth. (1)	[104309]
Glycine javanica L. (4)	[44806] [51155] [44807] [48456]
Glycine latrobeana (Meissner) Benth. (1)	[101263]
Glycine max (L.)Merr. (6)	[79949] [14725] [18272] [45743] [45207] [39104]
Glycine sp. (1)	[102872]
Glycine tabacina (Labill.) Benth. (1)	[101444]
Glycine tomentella Hayata (1)	[61261]
Glycyrrhiza glabra L. (4)	[65557] [72363] [34069] [29183]
Gompholobium grandiflorum Smith (1)	[59067]
Gompholobium huegelii Benth. (1)	[102280]
Gompholobium latifolium Smith (4)	[100296] [100297] [100299] [100298]
Gompholobium minus Smith (2)	[104310] [100300]
Gueldenstaedtia himalaica Baker (1)	[4191]
Guidonia tomentosa Kurz (1)	[33922]
Hardenbergia comptoniana (Andrews) Benth. (2)	[100353] [103182]
Hardenbergia violacea (Schneev.) Stearn (2)	[63086] [101435]
Hedera elegans Cambess. (1)	[38485]
Hedysarum alpinum L. (1)	[102224]
Hedysarum kumaonense Baker (1)	[4189]
Hedysarum microcalyx Baker (3)	[4213] [4214] [56179]
Heliotropium purpurea (L.)Pers. (1)	[33641]
Hemigraphis hirta (Vahl) T.Anderson (1)	[20539]
Heylandia latebrosa DC. (52)	[10980] [10978] [13860] [45211] [53725] [23411] [10977] [34490] [3400] [44298] [15294] [21621] [53977] [17344] [17345] [48049] [21623] [21624] [16240] [16239] [23470] [51154] [10979] [16238] [10982] [10981] [45252] [50663]

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Hippocrepis comosa L. (1)	[105110]
Hippocrepis emerus (L.) Lassen (2)	[60072] [54585]
Hovea chorizemifolia DC. (1)	[100301]
Hovea heterophyla A.Cunn. ex Hook (1)	[101155]
Hovea linearis (Sm.) R.Br. (1)	[101089]
Hovea longifolia R.Br. (1)	[100341]
Hovea trisperma Benth. (2)	[101095] [101094]
Hylodesmum podocarpum (DC.) H.Ohashi & R.R.Mill (10)	[53111] [42195] [39026] [16292] [3751] [19349] [31527] [3880] [49306] [410]
Hylodesmum podocarpum (DC.) H.Ohashi & R.R.Mill ssp. *oxyphyllum* (DC.) H.Ohashi & R.R.Mill (5)	[21416] [39723] [4125] [53717] [65776]
Indigofera aspalathoides DC. (1)	[70027]
Indigofera astragalina DC. (3)	[65706] [91091] [75857]
Indigofera atropurpurea Hornem. (6)	[72311] [67992] [88484] [4132] [41978] [46255]
Indigofera australis Wilid. (1)	[100340]
Indigofera caerulea Roxb. (3)	[68996] [70267] [69061]
Indigofera caroliniana Miller (1)	[101930]
Indigofera cassioides DC. (71)	[78115] [60281] [69822] [89764] [69076] [60661] [83440] [90199] [84600] [67054] [74581] [74498] [74582] [80097] [89765] [80099] [62397] [77129] [80505] [77130] [90200] [66233] [70225] [80098] [91243] [91242] [91241] [91129] [91238] [91239] [78969] [72323] [66359] [91240] [78970] [66328] [21494] [19249] [55021] [21876] [2113] [45285] [43215] [53724] [55521] [32219] [27514] [22692] [22691] [40926] [55701] [22693] [34826] [23214] [29731] [4127] [18704] [52292] [55981] [8979] [53415] [21495] [8980] [25491] [48758] [30499] [52499] [34829] [7224] [34828] [52484]
Indigofera colutea (Burm. f.) Merr. (2)	[4128] [7920]
Indigofera constricta (Thwaites) Trimen (1)	[70371]

Indigofera cordifolia Roth (66)	[68851] [68852] [65704] [60495] [65635] [68990] [66167] [62842] [70273] [3396] [53232] [44635] [16052] [16050] [44632] [16051] [54056] [5249] [5973] [10993] [10992] [35059] [10991] [17498] [13864] [10990] [10989] [41371] [41587] [10994] [37375] [21875] [11041] [53254] [36318] [21878] [8613] [36250] [40782] [10996] [10995] [48796] [34587] [10988] [17206] [17205] [19426] [19427] [14767] [19428] [17121] [37958] [34644] [45074] [23031] [49983] [49973] [45523] [23028] [45554] [23029] [23030] [23489] [17499] [14220] [34588]
Indigofera cylindracea Baker (3)	[97933] [97935] [97934]
Indigofera dosua D.Don (34)	[83418] [74099] [73964] [62025] [62026] [89763] [83417] [65056] [65108] [88367] [88368] [88369] [24597] [24598] [48521] [47777] [43800] [44091] [50130] [47791] [18215] [38006] [40888] [22690] [39435] [32142] [52097] [43794] [40393] [21600] [1997] [21601] [21602] [390]
Indigofera glabra L. (7)	[33285] [17397] [29167] [51005] [8479] [19458] [59517]
Indigofera glandulosa Wendl. (5)	[15669] [15566] [15675] [16046] [15684]
Indigofera glandulosa Wendl. var. *glandulosa* Wendl. (35)	[23037] [13568] [32143] [13567] [34591] [21877] [23038] [23036] [23591] [13569] [32012] [23590] [3395] [34831] [23018] [23017] [45070] [43582] [43689] [5967] [35632] [35639] [93179] [65616] [68861] [75936] [87309] [67672] [68862] [64715] [87308] [64634] [93180] [75937] [68863]
Indigofera hamiltonii Duthie & Prain (6)	[87383] [39439] [38007] [38606] [31888] [47144]
Indigofera hebepetala Benth. ex Baker (5)	[50770] [4130] [23136] [16297] [65020]
Indigofera hendecaphylla Jacq. (1)	[29417]
Indigofera heterantha Brandis (96)	[52130] [52050] [19616] [13343] [31896] [6857] [31897] [49760] [19405] [52204] [52199] [52100] [1877] [13194] [54918] [49005] [37987] [4129] [37966] [23199] [48761] [24596] [24595] [24594] [24593] [48405] [388] [389] [39414] [53266] [21492] [23584] [23585] [23586] [21493] [24592] [37986] [53414] [22689] [19048] [55973] [8084] [23138] [23137] [7780] [23204] [15234] [7779] [42589] [7781] [7783] [28748] [7782] [14729] [23203] [7778] [23200] [7776] [23201] [23156] [7777] [7775] [23202] [23198] [50622] [23157] [62028] [89782] [89243] [89242] [91589] [72004] [87941] [72003] [87942] [87943] [91586] [89241] [73963] [73962] [73961] [56295] [86828] [89781] [64694] [65065] [72724] [86158] [86829] [71711] [62628] [86160] [86159] [65064] [79298] [86830]
Indigofera heterantha Brandis. (1)	[13344]
Indigofera hirsuta L. (49)	[23039] [30653] [36296] [26274] [11004] [45068] [8488]

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Indigofera hochstetteri Baker (4) [65614] [68994] [60377] [68968]

Indigofera indica L. (1) [88483]

Indigofera linifolia (L.f.) Retz. (177) [87250] [92755] [92759] [82565] [60677] [91103] [68853] [91081] [66495] [84596] [68854] [65618] [89783] [87379] [65604] [87249] [90192] [90191] [81861] [81862] [75853] [69936] [75852] [87236] [68855] [56254] [87235] [94238] [97212] [79952] [79953] [79954] [64628] [66481] [19252] [44592] [18500] [44532] [7298] [34940] [36070] [38107] [35039] [11700] [35138] [16083] [19250] [16045] [43432] [29628] [16054] [16053] [29559] [19251] [35251] [35807] [37157] [43691] [37300] [35898] [10987] [48043] [44049] [31346] [17260] [31112] [17184] [14219] [40719] [32100] [26278] [26277] [43047] [32217] [43169] [14636] [31141] [6858] [31248] [41339] [6703] [26844] [6548] [17496] [17497] [8181] [26996] [14635] [32464] [40135] [25702] [8977] [8978] [39067] [38944] [43289] [47145] [38940] [34692] [29308] [11873] [39187] [5248] [12748] [8478] [13859] [16848] [11979] [46631] [30710] [16493] [45073] [45071] [15232] [34822] [381] [19614] [23205] [21472] [23491] [21473] [21474] [19292] [19384] [54935] [51855] [50719] [21475] [21476] [21477] [23006] [21471] [19574] [21470] [21886] [19518] [23592] [23593] [23594] [23595] [19383] [23490] [21885] [19445] [380] [50720] [19643] [21469] [19615] [21478] [23021] [23022] [21599] [23023] [23024] [23025] [21485] [21482] [23026] [23044] [50142] [21483] [21484] [23045] [50356] [21486] [21633] [21598] [19466] [21481] [54783] [21608] [23020] [21480] [21479] [19510] [23027]

Indigofera linnaei Ali (118) [21467] [19543] [21466] [2627] [10205] [35060] [382] [23587] [21464] [23500] [16076] [45072] [21465] [33295] [44335] [17665] [38906] [44602] [26276] [6547] [12749] [29560] [13341] [46515] [46516] [5646] [5647] [21468] [23035] [383] [23492] [13347] [384] [49733] [30612] [16049] [39188] [8976] [11000] [41792] [41696] [19248] [19247] [19246] [19245] [41583] [11039] [24981] [15345] [8188] [17187] [10999] [19422] [53326] [47840] [21630] [47769] [23034] [23033] [21629] [23032] [21619] [21879] [14262] [10997] [23019] [10998] [19423] [19588] [4565] [25682] [21881] [35163] [53589] [16802] [16753] [8204] [16048] [23588] [11974] [34541] [16937] [21880] [51006] [19424] [19425] [30496] [17141] [18766] [35381] [28642] [16653] [35318] [19318] [41202] [3532] [64287] [77131] [77132] [86863] [81005] [65701] [71442] [62844] [67014] [86862] [75938] [75851] [66162] [93016] [83160] [91040]

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Indigofera nummulariifolia (L.)Alston (1)	[22687]
Indigofera oblongifolia Forssk. (21)	[11977] [11976] [11975] [17203] [11978] [5239] [19406] [14648] [43377] [7473] [5250] [5328] [5329] [5330] [5978] [11872] [64133] [65621] [70090] [70276] [70088]
Indigofera officinalis (Medik.) H.Ohashi & Tateishi ssp. *alba* (Medik.) H.Ohashi & Tateishi (1)	[5645]
Indigofera purpurea (L.)Pers. (1)	[5327]
Indigofera sesquipedalis Sanjappa (1)	[48686]
Indigofera sessiliflora DC. (3)	[65613] [68992] [70275]
Indigofera sp. (16)	[78514] [77671] [77672] [75935] [77666] [75934] [91296] [75855] [78515] [94231] [75856] [66172] [91297] [78513] [45344] [15965]
Indigofera stachyodes Lindley (1)	[65717]
Indigofera tenuifolia Rottler ex Wight & Arn. (4)	[36185] [37293] [48004] [31899]
Indigofera tinctoria L. (75)	[51015] [7918] [8975] [51414] [30086] [21491] [7917] [21488] [15668] [39230] [53233] [32132] [16477] [32037] [21487] [19545] [21489] [11973] [41192] [23213] [28643] [19585] [21490] [39438] [17616] [11005] [19412] [26477] [36695] [19411] [19410] [18741] [37324] [19399] [23589] [35062] [54357] [18136] [17996] [34827] [35935] [21609] [17277] [38004] [19413] [17338] [96622] [96623] [65634] [65542] [69059] [75854] [96614] [96624] [96616] [96615] [65705] [96613] [67628] [81241] [64644] [84413] [74793] [63176] [63527] [68858] [96617] [96621] [63557] [96620] [84414] [68857] [96619] [96618] [81424]
Indigofera trifoliata Baker ssp. *trifoliata* L. (1)	[46259]
Indigofera trifoliata L. (20)	[385] [5979] [42529] [14903] [25305] [30540] [11001] [45431] [5968] [386] [32093] [30906] [65602] [56357] [66587] [97809] [66676] [68856] [81066] [72849]
Indigofera trigonelloides Jaub. & Spach (2)	[22688] [29166]
Indigofera trita L. (45)	[12380] [40747] [17211] [23043] [16047] [40970] [11981] [29553] [387] [23041] [30982] [23042] [7919] [34832] [37985] [11874] [34946] [44581] [37352] [36694] [21632] [15576] [23011] [21497] [36040] [11040] [41319] [36171] [36082] [8612] [18764] [36075] [28016] [17204] [26307]

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Indigofera villosa Lam. (1)	[41197]
Indigofera zollingeriana (Blume) Miq. (2)	[93573] [93574]
Irispurpurea (L.)Pers. (1)	[38652]
Kennediacoccinea Vent. (2)	[100317] [100316]
Kennedia F.Muell. (1)	[102103]
Kennediaprocurrens Benth. (1)	[100314]
Kennedia prostrata R.Br. (1)	[100313]
Kennedia rubicunda Vent. (1)	[100312]
Kennedia sp. (1)	[63085]
Kummerowia striata (Thunb.) Schindl. (1)	[49351]
Lablab purpureus (L.)Sweet (57)	[35534] [16221] [42666] [23534] [36843] [467] [11728] [34958] [30288] [15570] [19593] [19594] [15612] [17337] [16275] [12379] [28017] [39654] [39163] [50318] [23524] [22765] [66779] [60583] [77288] [77289] [76297] [82779] [67013] [82778] [77287] [74298] [74299] [75560] [75561] [76298] [78329] [69385] [78253] [78327] [78328] [78330] [74709] [74706] [81043] [75559] [75558] [78251] [76296] [74351] [93239] [93240] [97376] [78252] [75556] [75557] [74352]
Laburnum anagyroides Medik. (2)	[101816] [19054]
Lantana minima (L.)DC. (1)	[38482]
Lathyrus aphaca L. (37)	[7299] [8250] [34742] [55061] [19627] [8659] [444] [6865] [21391] [443] [6859] [19294] [11755] [36815] [30545] [6862] [6861] [6864] [6863] [445] [6860] [446] [37556] [94237] [95364] [95363] [64154] [69369] [84676] [62382] [75644] [83097] [62380] [77290] [81488] [75645] [66700]
Lathyrus emodi (Fritsch) Ali (9)	[23659] [23642] [7788] [50483] [50482] [50865] [2126] [2127] [4026]
Lathyrus humilis (Ser.) Spreng. (2)	[16300] [23660]
Lathyrus japonicus Wilid. (1)	[68170]
Lathyrus latifolius L. (1)	[72781]
Lathyrus laxiflorus (Desf.) Kuntze (1)	[61479]

Lathyrus ochroleucus Hook. (1)	[2924]
Lathyrus odoratus L. (7)	[6866] [6867] [19548] [40736] [449] [63785] [64685]
Lathyrus pratensis L. (6)	[62365] [67313] [58976] [71106] [19055] [22774]
Lathyrus sativus L. (50)	[23658] [447] [28597] [38829] [441] [6868] [23662] [50355] [23657] [45471] [43278] [39273] [19262] [6869] [21610] [36807] [21387] [21389] [8462] [54876] [34947] [29380] [29379] [21390] [18382] [13404] [27213] [39709] [11789] [21388] [25731] [44445] [16224] [16223] [35316] [16222] [8990] [77291] [78249] [62383] [93243] [78250] [80889] [83098] [84675] [77665] [78116] [82693] [83073] [93216]
Lathyrus sphaericus Retz. (9)	[89784] [62381] [89785] [30488] [23661] [51587] [448] [30487] [19561]
Lathyrus sylvestris L. (1)	[102343]
Lathyrus tuberosus L. (1)	[61649]
Lathyrus vernus (L.) Bernh. (3)	[104656] [105090] [104243]
Lens culinaris Medik. (17)	[78117] [69344] [77286] [93238] [93237] [21552] [21550] [442] [21565] [19302] [8517] [32090] [19599] [38698] [36808] [46977] [21551]
Lens culinaris Medik. ssp. *culinaris* (11)	[16226] [37537] [30502] [23525] [16225] [30527] [50361] [62399] [62384] [62385] [62386]
Lespedeza bicolor Turcz. (36)	[59271] [59205] [59317] [59839] [59316] [59165] [59328] [59266] [59102] [59356] [59355] [59202] [59353] [59352] [59103] [59134] [59203] [59161] [59279] [59318] [105195] [59152] [59273] [59144] [59155] [105146] [105190] [59278] [59276] [105191] [105192] [59275] [105194] [105196] [59277] [105193]
Lespedeza buergeri (Blume) Miq. (3)	[59211] [59322] [59270]
Lespedeza cuneata (Thunb.) Lace & Hauech (2)	[19051] [3829]
Lespedeza cuneata (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don (44)	[39027] [32239] [36708] [433] [39342] [37894] [53407] [10206] [55985] [34513] [51655] [38748] [432] [23206] [19513] [50315] [51471] [3744] [3521] [51453] [27470] [27469] [33844] [51519] [23636] [2490] [29184] [7459] [19512] [4171] [3766] [87172] [61902] [65328] [89961] [89960] [90189] [90190] [90188] [83330] [90187] [65784] [93548] [56351]
Lespedeza cyrtobotrya (Blume) Miq. (11)	[59314] [59157] [59160] [59149] [59315] [59156] [59167] [59158] [59153] [59173] [59171]

Lespedeza elegans Cambess. (3)	[31971] [31972] [31973]
Lespedeza gerardiana Maxim. (5)	[16891] [72843] [89760] [90198] [88479]
Lespedeza homoloba Nakai (15)	[59320] [59330] [59267] [59321] [59269] [59268] [59265] [59209] [59206] [59207] [59201] [59208] [59200] [59159] [59166]
Lespedeza japonica L.H.Bailey (12)	[59142] [59326] [59327] [59169] [59329] [59325] [59324] [59274] [59319] [59168] [72129] [59272]
Lespedeza juncea (L.f.) Pers. (5)	[83470] [59143] [59136] [16294] [51452]
Lespedeza juncea (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech (13)	[86383] [86382] [86381] [72128] [59137] [86380] [59313] [59354] [59210] [59796] [59170] [59323] [59351]
Lespedeza Miq. (1)	[59148]
Lespedeza Nakai (1)	[59154]
Lespedeza pilosa (Thunb.) Siebold & Zucc. (4)	[59150] [59164] [59162] [59151]
Lespedeza sp. Turcz. (1)	[59163]
Lespedeza thunbergii (DC.) Nakai (5)	[59147] [59145] [59331] [59204] [59146]
Lespedeza tomentosa (Thunb.) Maxim. (1)	[16293]
Lespedeza virginica (L.)Britton (1)	[104313]
Leucaena albida Roth (1)	[93554]
Leucascalycina Schrank (1)	[33595]
Lonchocarpus (Tul.) Malme (1)	[23506]
Lonchocarpus roseus (Mill.) DC. (1)	[54152]
Lonchocarpus sp. (1)	[4198]
Lotus australis Andrews (2)	[100310] [100311]
Lotus corniculatus L. (44)	[104657] [61648] [88119] [70757] [100309] [91612] [96128] [104242] [29328] [23520] [23521] [23522] [19500] [21553] [23523] [37983] [37967] [50934] [37965] [23518] [29329] [50495] [6873] [45758] [53411] [54195] [49742] [50752] [23512] [52693] [29385] [19501] [33282] [23519] [55020] [378] [19328] [18278] [19050] [37558] [14733] [18279] [48522] [43218]
Lotus pedunculatus Cav. (1)	[101984]
Lupinus Benth. (1)	[62845]

Lupinusbicolor Lindley (1)	[58954]
Lupinus C.P.Sm. (1)	[10048]
Lupinusdavidsonii Davidson (1)	[4149]
Lupinus densiflorus Benth. (1)	[103890]
Lupinus diffusus Nutt. (1)	[63806]
Lupinus luteolus Kellogg (1)	[47471]
Lupinus micranthus Guss. (5)	[23529] [8483] [22772] [101210] [60700]
Lupinus parviflorus Hook. & Arn. (1)	[72140]
Lupinus parvifolius Gardner (1)	[47470]
Lupinus paynei Davidson (1)	[81383]
Lupinus perennis L. (1)	[67609]
Lupinus pilosus L. (1)	[102112]
Lupinus sp. (2)	[65846] [102599]
Lupinus sparsiflorus Benth. (1)	[105154]
Lupinus villosus Wilid. (3)	[102063] [63053] [63117]
Machaerium opacum Vogel (1)	[62202]
Macrotyloma uniflorum (Lam.) Verdc. (6)	[74625] [74840] [91132] [74624] [80566] [75437]
Mahonia nepalensis DC. (1)	[1904]
Medicago agropyretorum Vassilcz. (1)	[68422]
Medicago arabica (L.) All. (1)	[100981]
Medicago edgeworthii Sirj. (3)	[4173] [4174] [4175]
Medicago falcata L. (1)	[101973]
Medicago grandiflora (L.)Pers. (1)	[5323]
Medicago lupulina L. (53)	[35580] [50538] [27472] [23719] [23691] [50406] [19499] [8469] [369] [16290] [8973] [40074] [23718] [39394] [23720] [23721] [23692] [2921] [36169] [50286] [39038] [34475] [37557] [23722] [30441] [11779] [27471] [19323] [19321] [19613] [54456] [19612] [23399] [23400] [19611] [30469] [26698] [23484] [30481] [23485] [23486] [23487] [23401] [19322] [62393] [91460] [66959] [65612] [91211] [102350] [84672] [100702] [64151]

Medicago minima (L.) L. (8)	[100304] [71753] [18251] [23147] [23003] [23407] [23148] [23146]
Medicago monantha (C.A.Mey.) Trautv. (5)	[363] [19363] [8396] [79291] [84825]
Medicago orthoceras (Kar. & Kir.)Trautv. (2)	[13390] [19364]
Medicago polycerata (L.) Trautv. (1)	[31908]
Medicago polyceratia (L.) Trautv. (4)	[54926] [43895] [56021] [42667]
Medicago polymorpha L. (53)	[8974] [23408] [23409] [8213] [23410] [34233] [44461] [27604] [8470] [13353] [366] [30440] [38442] [8361] [21581] [36743] [11780] [48539] [31520] [367] [44560] [365] [12718] [6875] [30863] [19324] [6874] [92026] [81418] [71390] [64137] [63153] [87233] [81505] [87232] [100305] [82388] [83222] [95362] [95953] [84674] [84673] [77419] [64643] [91214] [92023] [81182] [92024] [92021] [81183] [77420] [81278] [92022]
Medicago sativa L. (30)	[59577] [15233] [23604] [25468] [22718] [23695] [52253] [38938] [49889] [14040] [23694] [51604] [23693] [50331] [23488] [368] [23406] [28640] [50317] [39247] [38704] [39246] [50372] [19060] [28647] [42233] [18250] [28648] [22759] [23475]
Meizotropis buteiformis Voigt (1)	[49395]
Melilotus albus Medik. (11)	[50387] [50418] [11787] [44643] [31917] [51497] [54845] [66331] [104658] [102340] [64135]
Melilotus dentatus (Waldst. & Kit.) Pers. (1)	[104162]
Melilotus dosua Buch.-Ham. ex D. Don (1)	[5648]
Melilotus indicus (L.) All. (44)	[29217] [6550] [19609] [19610] [33063] [30538] [11786] [8206] [21558] [43648] [30474] [55205] [25501] [18360] [33064] [370] [6877] [14259] [48696] [31345] [8471] [50709] [44458] [29720] [371] [27018] [75978] [64155] [75977] [93397] [81865] [93396] [81866] [93419] [81504] [83210] [83209] [83208] [95361] [84671] [91143] [93055] [71391] [62786]
Melilotus officinalis (L.)Pall. (4)	[67347] [61628] [30655] [30886]
Melilotus officinalis (L.)Pall. ssp. alba (Medik.) H.Ohashi & Tateishi (33)	[32501] [3539] [27763] [49890] [31872] [8190] [37341] [31300] [27720] [39314] [31871] [32309] [5642] [55123] [37082] [50815] [23513] [373] [23514] [23145] [374] [23723] [48786] [36816] [45472] [27762] [25500] [21508] [53469] [62387] [75438] [62388] [75439]

Melilotus officinalis (L.)Pall. var. *alba* (Medik.) H.Ohashi & Tateishi (1)	[81503]
Melilotus officinalis (Medik.) H.Ohashi & Tateishi (1)	[6876]
Melilotus officinalis (Medik.) H.Ohashi & Tateishi ssp. *alba* (Medik.) H.Ohashi & Tateishi (4)	[5643] [8472] [5116] [5644]
Melilotus officinalis Medik. ssp. *alba* (Medik.) H.Ohashi & Tateishi (2)	[372] [13865]
Meristotropis triphylla Fisch. & C.A. Mey. (1)	[68212]
Millettia auriculata Baker ex Brand. (19)	[62227] [75440] [62948] [36742] [55949] [21593] [26261] [26262] [23239] [52861] [24982] [38412] [396] [8766] [38903] [28976] [32076] [3864] [48358]
Millettia auriculata Benth. ex Baker f. (1)	[33327]
Millettia cinerea Benth. (1)	[49145]
Millettia extensa (Benth.) Baker (41)	[395] [77380] [77381] [77415] [77416] [81873] [77417] [77418] [93017] [65315] [91226] [93090] [81872] [75821] [81674] [81673] [75820] [75822] [84021] [84022] [93925] [93091] [61777] [91087] [87121] [91227] [87122] [66365] [66496] [91136] [91213] [66364] [87325] [87326] [67056] [79247] [91228] [91229] [66363] [91210] [71451]
Millettia peguensis Ali (25)	[63790] [59866] [59365] [63702] [64813] [56167] [69139] [65709] [72528] [68767] [68766] [59366] [62177] [65763] [14708] [21614] [40041] [13396] [19385] [8395] [8986] [18344] [21607] [8987] [41316]
Millettia pulchra Benth. var. pulchra Kurz. (1)	[49358]
Millettia tetraptera Kurz (3)	[3522] [15851] [2200]
Mucuna gigantea (Willd.) DC. (1)	[45908]
Mucuna monosperma Wight (3)	[45909] [7112] [69968]
Mucuna pruriens (L.)DC. (30)	[76542] [88480] [60306] [74863] [74630] [88478] [80502] [83076] [80501] [72031] [76544] [76543] [75430] [75429] [82619] [82620] [45584] [6551] [8156] [7477] [19329] [459] [23603] [30420] [26233] [34812] [55082] [14707] [9956] [26275]
Mucuna sp. (2)	[78326] [78325]
Mundulea sericea (Willd.) A.Chev. (1)	[22679]

Myroxylon balsamum (L.) Harms (1)	[69976]
Nemcia acuta (Benth.) Domin (1)	[101354]
Nemcia capitata (Benth.) Domin (4)	[100302] [100303] [101670] [100352]
Neocollettia wallichii (Kurz)Schindl. (1)	[51153]
Ohwia caudata (Thunb.) H.Ohashi (2)	[3977] [19605]
Onobrychis sintenisii Bornm. (1)	[71754]
Onobrychis verae Sirj. (1)	[68399]
Ononis angustissima Lam. (1)	[60212]
Ononis spinosa L. (2)	[102705] [101976]
Ophrestia pentaphylla Dalzell (2)	[49258] [49547]
Ormosia travancorica Beddome (1)	[70044]
Ornithopus perpusillus L. (1)	[103580]
Ougeinia dalbergioides Benth. (1)	[14942]
Oxylobium ellipticum (Vent.) R.Br. (1)	[101804]
Oxylobium procumbens F.Muell. (1)	[101669]
Oxylobium scandens (Sm.) Benth. (1)	[72650]
Oxylobium undulatum (1)	[72067]
Oxytropis deflexa (Pallas)DC. (1)	[2787]
Oxytropis maydelliana Trautv. (2)	[2325] [2324]
Oxytropis thomsonii Bunge (1)	[44858]
Pachyrhizus erosus (L.)Urb. (2)	[68759] [68753]
Paracalyx scariosus (Roxb.) Ali (4)	[12376] [22760] [21576] [7111]
Paraserianthes lophantha Wilid. ssp. *montana* (Jungh.) I.C.Nielsen (1)	[102197]
Parochetus communis D.Don (23)	[92018] [92001] [92020] [92019] [86978] [70171] [92010] [70442] [92017] [92007] [92008] [92009] [92011] [60112] [77492] [56072] [92002] [64825] [18269] [4209] [49643] [43549] [4210]
Pedicularissp. (1)	[91299]
Phaseolus lunatus L. (10)	[79078] [79084] [79082] [79080] [79079] [79081] [79083]

	[21534] [18273] [19310]
Phaseolus montana (L.) Aiton var. *lobata* (1)	[50307]
Phyllodium pulchellum (L.)Desv. (66)	[7022] [42834] [9010] [52477] [52407] [52795] [46739] [9009] [47304] [4516] [3997] [9008] [52488] [1935] [38747] [50725] [3512] [11613] [21858] [30506] [19554] [30476] [21857] [15868] [30423] [19516] [21856] [21616] [21642] [15867] [27087] [21590] [21641] [26248] [21419] [35802] [19335] [90059] [90769] [59576] [91065] [92034] [92033] [92035] [60465] [90811] [98040] [61778] [91066] [65095] [82243] [87385] [88130] [83676] [82242] [85257] [88129] [88128] [87386] [85258] [87387] [83675] [80521] [85256] [80520] [87388]
Phyllota phylicoides (DC.)Benth. (1)	[100332]
Piscidia piscipula (L.) Sarg. (1)	[67557]
Pisum sativum L. (28)	[66926] [56162] [64686] [76260] [64731] [77421] [78242] [62389] [78241] [80890] [451] [6881] [22769] [6883] [39429] [2925] [450] [19295] [6882] [17342] [22782] [13391] [11548] [8463] [30489] [40032] [17341] [23542]
Pittosporum virginiana (L.)Pers. (1)	[103990]
Platylobium formosum Smith (1)	[102279]
Platylobium obtusangulum Hook. (1)	[102273]
Pongamia pinnata (L.) Pierre (66)	[66219] [98411] [91810] [98410] [91809] [97841] [78782] [98412] [84860] [75470] [83758] [84568] [84569] [75468] [82644] [60586] [75469] [84670] [78783] [74776] [78784] [79076] [83757] [79077] [71266] [94110] [78787] [94111] [94312] [94112] [94311] [93926] [90695] [78790] [78789] [78788] [78785] [91808] [90728] [78786] [16251] [16729] [21559] [6887] [39274] [487] [23007] [23008] [23009] [23132] [54564] [51020] [43618] [11964] [50684] [7024] [23131] [6889] [6888] [11965] [45916] [21594] [5785] [10983] [46504] [10984]
Pongamia sp. (1)	[35071]
Prosopis cineraria (L.)Druce (13)	[23016] [11898] [23656] [23015] [6890] [23715] [29498] [53184] [51038] [81276] [97844] [58844] [97843]
Prosopis glandulosa Torr. (5)	[56995] [11970] [19455] [19280] [19456]
Prosopis juliflora (Sw.) DC. (30)	[10677] [11972] [21563] [11969] [35186] [50093] [10674] [10675] [10676] [8505] [11971] [47927] [11967] [11968] [91111] [82381] [72544] [84680] [81001] [82482] [78759] [78758] [79098] [79099] [84679] [82523] [82380] [82483] [79101] [79100]

Pseudarthria hispida Hook.f. (1)	[67987]
Pseudarthria viscida (L.)Wight & Arn. ex Wight (2)	[23493] [23494]
Psoralea bituminosa L. (1)	[60214]
Psoralea eriantha Benth. (1)	[100344]
Psoralea patens Lindley (1)	[100346]
Psoralea physodes Douglas (1)	[59694]
Psoralea sp. (2)	[101771] [101770]
Pterocarpus indicus Wilid. (1)	[59783]
Pterocarpus macrocarpus Kurz (1)	[74968]
Pterocarpus marsupium Roxb. (27)	[80570] [80571] [59579] [80572] [80573] [75780] [79075] [79074] [75778] [75777] [75779] [58881] [78248] [78247] [19462] [26256] [19291] [26257] [45143] [19596] [50537] [9032] [3518] [26304] [19637] [51022] [47702]
Pterocarpus santalinus L. (6)	[51021] [36287] [70297] [63457] [60360] [63459]
Pueraria montana (L.) Aiton (3)	[35031] [34939] [33872]
Pueraria montana (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep (7)	[21618] [51157] [23429] [23430] [52045] [64156] [68874]
Pueraria montana Benth. var. *chinensis* (Ohwi) Sanjappa & Pradeep (1)	[52033]
Pueraria phaseoloides (Roxb.) Benth. (1)	[9974]
Pueraria tuberosa (Willd.) DC. (33)	[38979] [38977] [36438] [38978] [36445] [36439] [25693] [1964] [55595] [9025] [53713] [36444] [39272] [52362] [82276] [65627] [75467] [62023] [91063] [64954] [82277] [83832] [85666] [65340] [83716] [83831] [86696] [74599] [86697] [91251] [80574] [82122] [91064]
Pueraria wallichii DC. (1)	[49261]
Pultenaea acuminata R.T.Baker (1)	[63080]
Pultenaea daphnoides Wendl. (1)	[100355]
Pultenaea elliptica Smith (1)	[60698]
Pultenaea incurvata (A.Cunn.) Crisp & P.H.Weston (1)	[58943]
Pultenaea involucrata Benth. (1)	[100354]

Pultenaea largiflorens Benth. (2)	[100357] [100307]
Pultenaea pedunculata Hook. (1)	[100356]
Pultenaea prostrata Benth. (1)	[100333]
Pultenaea retusa Smith (1)	[100966]
Pultenaea sp. (2)	[59941] [60249]
Pultenaea staphyleoides A.Cunn. ex G.Don (1)	[60540]
Pultenaea stipularis Smith (2)	[100343] [100334]
Pultenaea teretifolia H.B.Will. (1)	[100338]
Pultenaea viscosa Benth. (1)	[63112]
Rhynchosia aurea (Willd.) DC. (13)	[63007] [58856] [47150] [3528] [40901] [8481] [3510] [10210] [10211] [19546] [17597] [17593] [15572]
Rhynchosia bracteata Benth. ex Baker (6)	[46257] [48793] [14646] [3801] [55657] [55391]
Rhynchosia capitata (Roth) DC. (3)	[44513] [66701] [65617]
Rhynchosia cinerea Nash (1)	[103936]
Rhynchosia difformis (Elliott) DC. (1)	[64478]
Rhynchosia minima (L.) DC. (1)	[14623]
Rhynchosia minima (L.)DC. (119)	[40769] [34149] [47792] [34148] [8466] [53112] [6892] [47978] [472] [8564] [22777] [47371] [473] [474] [475] [8614] [33250] [11961] [52088] [6706] [19449] [46392] [6893] [6894] [23631] [43637] [50817] [19279] [7479] [17765] [46260] [6705] [17339] [17036] [17551] [16281] [19416] [50214] [17608] [44598] [4147] [43309] [31001] [42967] [14263] [14129] [46951] [4148] [23129] [23128] [5236] [14899] [15063] [19573] [15271] [45643] [15117] [23207] [25986] [18643] [15065] [15064] [19273] [21524] [36158] [10969] [37476] [11051] [11703] [21523] [10975] [10972] [21811] [21522] [10973] [36148] [35293] [10970] [10976] [9022] [37805] [10971] [11702] [89786] [89787] [66808] [75157] [89927] [94235] [75154] [75054] [75156] [80998] [75153] [90149] [89332] [90150] [69513] [89333] [75155] [79087] [75944] [79533] [75942] [66159] [86861] [91163] [86860] [86859] [79085] [98041] [79086] [70317] [90821] [90822] [66057] [75943] [75052] [75053]
Rhynchosia reniformis (Pursh) DC. (1)	[63738]
Rhynchosia rothii Aitch. (22)	[68888] [77284] [77283] [89926] [59844] [77285] [89925] [31907] [19396] [4206] [53711] [31906] [12562] [15678] [19589] [19282] [48794] [42931] [31905] [8467] [39160]

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Rhynchosia rufescens (Willd.) DC. (6)	[46261] [53710] [52365] [55389] [52475] [53107]
Rhynchosia sp. (1)	[66368]
Rhynchosia suaveolens (L.f.)DC. (1)	[45969]
Rivea hypocrateriformis Choisy (1)	[90709]
Robinia pseudoacacia L. (12)	[14722] [41603] [53455] [47940] [40326] [50061] [4188] [45076] [32231] [23647] [42232] [10820]
Rothia indica (L.)Druce (3)	[51004] [7053] [80096]
*Securigera va*ria (L.) Lassen (4)	[61644] [103183] [66964] [104654]
Sesbania bispinosa (Jacq.) W.Wight (31)	[93142] [96425] [81410] [71027] [96427] [61782] [79534] [94229] [25707] [35447] [18679] [46952] [47801] [19564] [11875] [34765] [22948] [17322] [398] [19414] [29512] [4183] [21546] [33587] [34738] [21560] [37981] [36811] [14621] [34903] [7921]
Sesbania cannabina (Retz.)Pers. (1)	[8985]
Sesbania grandiflora (L.)Pers. (9)	[6898] [399] [6899] [400] [6897] [45038] [53481] [65313] [61784]
Sesbania hypogaea L. (1)	[33586]
Sesbania javanica (Blume) Miq. (5)	[22681] [8397] [25281] [25282] [61783]
Sesbania paludosa Jacq. (1)	[21611]
Sesbania procumbens (Roxb.)Wight & Arn. (1)	[25297]
Sesbania punicea (Cav.)DC. (1)	[68167]
Sesbania sativa L. (1)	[5324]
Sesbania sesban (L.)Merr. (40)	[19379] [22680] [19415] [13854] [14261] [19602] [397] [22950] [36839] [36844] [11701] [37118] [37094] [7437] [39721] [39720] [44589] [8249] [3394] [40768] [6896] [22949] [6895] [83010] [80506] [80507] [89275] [83011] [84839] [91137] [79503] [79504] [80892] [89276] [81181] [81277] [89526] [89527] [91138] [91135]
Sesbania tomentosa Hook. & Arn. (1)	[65874]
Shuteria hirsuta Baker (6)	[74653] [60570] [60569] [44839] [44840] [44842]
Shuteria involucrata (Wall.) Wight &Arn. (7)	[13618] [44970] [45086] [456] [23130] [66371] [66330]

Shuteria involucrata (Wall.) Wight & Arn. var. *glabrata* (2)	[4211] [4212]
Shuteria villosa Benth. (1)	[457]
Sida cordata (Burm.f.) Borss.Waalk (1)	[38063]
Smithia bigemina Dalzell (5)	[40602] [40601] [22716] [7223] [67993]
Smithia blanda Wallich (3)	[49284] [49332] [49339]
Smithia ciliata Royle (18)	[26239] [49320] [49201] [26240] [21924] [19493] [10212] [10213] [19562] [21925] [26235] [26234] [21926] [21927] [26236] [26238] [26237] [21928]
Smithia conferta Smith (10)	[52331] [43252] [35250] [44969] [21557] [35391] [23536] [13490] [5971] [35390]
Smithia sensitiva Aiton (20)	[404] [23211] [45293] [45910] [44056] [43842] [36917] [46393] [45208] [23212] [11871] [37092] [42951] [23144] [8993] [14620] [48760] [70455] [63472] [58898]
Smithia setulosa Dalzell (1)	[67669]
Sophora bakeri C.B.Clarke ex Prain (7)	[66482] [66801] [55598] [55597] [32134] [21901] [17550]
Sophora flavescens Aiton (1)	[19662]
Sophora interrupta Beddome (1)	[22779]
Sophora mollis (Royle) Baker (2)	[77490] [77491]
Sophora mollis (Royle) Baker ssp. griffithii (1)	[52227]
Sophora secundiflora (Ortega) DC. (1)	[10672]
Sophora sp. (1)	[68085]
Sophora tetraptera F.Muell. (1)	[101839]
Sophora tomentosa L. (11)	[68332] [68704] [60290] [68705] [488] [22780] [19448] [6902] [6901] [6900] [10673]
Sophora velutina Lindley (1)	[73436]
Spartina pectinata Link. (1)	[3075]
Spartina spartinae (Trin.) Merr. (1)	[64475]
Spartium junceum L. (9)	[91320] [91319] [21554] [33152] [21556] [21555] [360] [18423] [22939]
Spatholobus parviflorus (DC.) Kuntze (23)	[31713] [9027] [9028] [53723] [23709] [22763] [9026] [39445] [9955] [48253] [43414] [30073] [32402] [1973]

	[54261] [21808] [30485] [74575] [74577] [74576] [67105] [67084] [90009]
Spongiocarpella nubigena (D.Don) Yakovlev (24)	[71131] [72002] [19330] [23638] [23535] [4143] [23526] [50615] [50305] [19331] [23527] [23477] [23479] [23637] [40977] [23480] [38500] [23481] [23478] [2182] [51654] [19419] [34264] [23482]
Stellaria lucida Graham (1)	[38633]
Stizolobium imbricatum (Roxb.)Kuntze (4)	[55080] [54412] [67259] [70033]
Strophostyles umbellata (Willd.) Britton (1)	[103940]
Stylosanthes biflora (L.) Britton, Sterns & Poggenb. (1)	[102266]
Stylosanthes fruticosa (Retz.) Alston (6)	[58897] [79088] [79090] [79091] [79089] [51158]
Stylosanthes guianensis (Aubl.)Sw. (1)	[10109]
Stylosanthes sp. (3)	[74644] [74643] [74645]
Swainsona campylantha F.Muell. (1)	[101645]
Swainsona canescens (Lindl.) F.Muell. (1)	[100308]
Swainsona formosa (G.Don) J.Thompson (2)	[100337] [22757]
Swainsona galegifolia (Andrews) R.Br. (1)	[103739]
Swainsona laxa R.Br. (1)	[100348]
Swainsona lessertiifolia DC. (1)	[101520]
Swainsona microphylla A.Gray (1)	[100556]
Swainsona phacoides Benth. (1)	[100347]
Swainsonasp(1)	[102107]
Swainsona sp. (1)	[101767]
Tadehagi pseudotriquetrum (DC.) Y.C.Yang & P.H.Huang (4)	[3827] [23233] [27610] [22935]
Tadehagi triquetrum (L.) H.Ohashi (13)	[38508] [46514] [49745] [52400] [4559] [1936] [4560] [23578] [47261] [30493] [47256] [91853] [70081]
Taverniera cuneifolia (Roth)Ali (8)	[11921] [7454] [7426] [7455] [11922] [11919] [21573]

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Tephrosia bispinosa (Jacq.) W.Wight (1)	[5325]
Tephrosia canarensis J.R.Drumm. (1)	[71912]
Tephrosia candida (Roxb.) DC. (13)	[72676] [60285] [67052] [66599] [66432] [66484] [84597] [21892] [49519] [2226] [12676] [8981] [3995]
Tephrosia chrysophylla Pursh (1)	[101872]
Tephrosia collina V.S.Sharma (3)	[95391] [51407] [51406]
Tephrosia falciformis S.V.Ramaswamy (1)	[46683]
Tephrosia floridana Small (1)	[101958]
Tephrosia hookeriana Wight & Arnott (4)	[31610] [39486] [31607] [40503]
Tephrosia indicus (L.) All. (1)	[5649]
Tephrosia maxima . (L.) Pers (1)	[53110]
Tephrosia noctiflora Baker (1)	[35407]
Tephrosia nyikensis Baker (1)	[19059]
*Tephrosiaparvi*flora Wight ex Wall. (5)	[7922] [7923] [19636] [11958] [7924]
Tephrosia pumila (Lam.) Pers. (1)	[84592]
Tephrosia purpurea (L.)Pers. (249)	[87471] [91051] [65767] [94234] [86734] [76289] [78373] [71713] [78372] [94240] [77136] [78511] [97851] [78510] [78377] [85093] [78376] [97787] [85094] [97785] [78375] [76548] [76549] [91153] [78374] [91154] [73890] [66932] [79572] [79093] [87472] [62914] [87470] [79094] [91089] [79095] [72695] [79096] [79493] [79492] [62916] [79097] [79092] [78512] [73806] [86591] [86592] [80567] [86593] [58904] [58905] [86735] [86736] [80104] [80103] [80102] [80101] [91053] [91090] [69206] [90457] [56238] [65535] [75032] [103133] [69342] [75038] [84911] [60520] [67670] [75034] [79573] [90458] [84669] [89262] [89261] [69207] [75031] [83677] [75033] [68982] [83678] [74792] [89260] [76291] [85026] [84912] [65667] [85027] [69043] [76290] [60458] [75291] [75290] [18666] [5115] [36332] [48577] [48578] [26334] [5326] [25681] [18765] [23705] [23710] [19259] [19258] [19257] [19256] [21636] [23704] [23703] [23702] [23701] [23700] [47153] [21635] [26471] [23706] [36507] [6708] [36745] [6707] [23621] [23620] [10682] [35270] [17548] [23619] [23618] [10683] [19301] [6108] [4010] [23622] [23623] [5650] [18426] [26258] [26259] [45085] [5651] [17772] [5652] [5653] [5654] [5655] [11043] [35369] [11044] [26306] [2515] [14653] [7929]

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Tephrosia purpurea (L.)Pers. ssp. purpurea (1)	[14893]
Tephrosia sp. (6)	[37290] [37291] [95390] [66062] [97856] [67722]
Tephrosia strigosa (Dalzell) Santapau & Maheshw. (1)	[62917]
Tephrosia subtriflora Baker (11)	[70247] [68946] [28006] [7925] [7926] [37282] [7927] [7928] [45080] [15677] [38608]
Tephrosia tenuis Wall. (1)	[3527]
Tephrosia tenuis Wallich (17)	[8984] [48455] [8473] [6709] [23698] [21521] [8435] [6710] [31016] [11905] [11903] [11902] [19459] [4192] [11904] [70383] [66059]
Tephrosia tinctoria Pers. (4)	[103991] [73059] [67051] [44857]
Tephrosia villosa (L.)Pers. (36)	[39422] [19260] [38108] [47835] [21520] [39423] [17220] [19261] [53612] [49665] [43690] [13866] [43603] [52075] [11042] [34937] [8554] [50635] [41793] [51013] [40029] [23699] [8492] [37968] [70259] [75035] [92472] [64871] [92870] [92868] [69044] [75037] [66221] [69522] [68973] [75036]
Tephrosia vogelii Hook.f. (1)	[12677]
Teramnus labialis (L.f.) Spreng. (77)	[23640] [55739] [51018] [23135] [458] [23134] [21574] [55840] [47968] [21625] [23641] [22766] [19421] [11869] [16475] [5636] [29556] [29557] [44495] [29626] [41326] [39158] [5234] [5233] [45079] [34938] [11865] [11866] [11686] [26449] [35145] [34771] [11867] [11868] [28641] [16716] [18682] [16082] [13351] [13394] [36224] [31139] [36223] [14131] [36137] [35835] [10680] [32585] [16078] [16079] [30415] [11049] [11243] [30426] [16080] [16081] [69066] [66060] [80996] [66325] [68859] [80997] [69037] [64345] [66174] [65571] [73886] [65598] [86633] [86634] [65597] [59583] [86635] [68860] [68967] [69254] [65619]

Teramnus ternatea L. (1)	[5635]
Thermopsis barbata Benth. (5)	[44224] [10236] [10263] [71102] [77475]
Thermopsis lupinoides (Linn.)Link (1)	[68423]
Thermopsis macrophylla Hook. & Arn. (1)	[59698]
Tipuana tipu (Benth.)Kuntze (1)	[69973]
Trichodesma indicum (L.) Lehm. (1)	[31919]
Trifolium alexandrinum L. (7)	[31900] [31901] [45604] [31904] [49916] [95365] [59584]
Trifolium alpestre L. (1)	[102433]
Trifolium angustifolium L. (1)	[103629]
Trifolium arvense L. (3)	[103210] [103628] [101983]
Trifolium bonanni C. Presl. (1)	[72360]
Trifolium campestre Schreb. (1)	[72232]
Trifolium dubium Sibth. (12)	[71057] [60706] [69102] [19497] [39025] [39024] [47793] [39021] [45075] [40381] [38926] [37568]
Trifolium echinatum M.Beib. (1)	[71755]
Trifolium fragiferum L. (1)	[102390]
Trifolium hybridum L. (1)	[72361]
Trifolium lappaceum L. (1)	[72203]
Trifolium montanum L. (2)	[102425] [67343]
Trifolium pratense L. (30)	[61633] [56154] [21561] [53410] [21562] [50818] [53408] [55405] [23531] [30771] [23155] [30770] [23517] [23516] [16298] [43246] [375] [23149] [53409] [1818] [23609] [23608] [54753] [23610] [54996] [23152] [8089] [23150] [23421] [23151]
Trifolium repens L. (57)	[22715] [23696] [40073] [13616] [50926] [43411] [50426] [39029] [23420] [39028] [29469] [50870] [8569] [33149] [39609] [8568] [39022] [39023] [43400] [22999] [377] [10215] [7785] [23153] [10214] [38821] [7786] [23611] [54720] [23001] [8113] [376] [30767] [23532] [30772] [7784] [23000] [27685] [16301] [2192] [92013] [92016] [86210] [92012] [84555] [61901] [87165] [87166] [92003] [70530] [63562] [92014] [64770] [63517] [69146] [92015] [71058]
Trifolium resupinatum L. (6)	[64619] [23496] [53245] [50744] [50702] [33996]

Trifolium sp. (1)	[104320]
Trifolium subterraneum L. (1)	[103630]
Trifolium tomentosum L. (5)	[92004] [92005] [92006] [41513] [31655]
Trifolium trichocephalum M.Bieb. (2)	[71758] [72362]
Trigonella balansae Boiss. & Reut. (18)	[64136] [21541] [22767] [51652] [19047] [364] [51852] [48130] [15830] [12605] [16257] [21569] [19457] [21542] [22711] [16241] [17125] [17146]
Trigonella coerulescens (M.Bieb.) Halacsy (1)	[72227]
Trigonella emodi Benth. (11)	[97966] [97967] [5397] [4172] [19276] [55797] [16296] [21543] [10865] [46435] [43433]
Trigonella foenum-graecum L. (20)	[30537] [19365] [21544] [3524] [23632] [46746] [41043] [361] [13851] [19366] [35269] [31873] [16219] [19268] [6906] [66324] [81506] [97399] [97379] [60584]
Trigonella gracilis Benth. (6)	[16283] [362] [48059] [29160] [19296] [29718]
Trigonella hamosa L. (1)	[29182]
Trigonella occulta Delile (3)	[23154] [14724] [65605]
Trigonella pubescens Edgew. ex Baker (8)	[74555] [36573] [55638] [36574] [37265] [34268] [34269] [46797]
Trigonella rugosus (Willd.) DC. (1)	[33634]
Trigonella spruneriana Boiss. (1)	[68358]
Ulex europaeus L. (7)	[73474] [70299] [102277] [56065] [40998] [36903] [2625]
Uraria (L.)DC. (1)	[8996]
Uraria hamosa Wallich (7)	[40907] [43771] [30430] [49206] [49276] [49470] [58845]
Uraria lagopodoides (L.)DC. (13)	[77431] [90015] [77432] [75285] [77433] [77435] [63869] [75284] [73732] [73733] [59983] [75286] [30475]
Uraria lagopus DC. (20)	[3967] [1932] [3815] [1941] [19317] [26322] [3802] [8995] [47403] [43765] [24983] [52432] [21423] [55502] [21424] [21425] [8994] [43612] [73198] [93550]
Uraria lagopus DC. var. *lagopus* DC. (26)	[70639] [85105] [70638] [88459] [82288] [76551] [76552] [76553] [79496] [79497] [80576] [80575] [85106] [82289] [92677] [79498] [92678] [83983] [83984] [88460] [33921] [17487] [19629] [21893] [47865] [18316]
Uraria lagopus DC. var. *neglecta* (Prain)	[92753] [85029] [85028] [92756] [92757] [92758] [92760]

H.Ohashi (8) [74340]

Uraria logopodioides (L.)DC. (2) [18123] [11574]

Uraria picta (Jacq.) DC. (42) [21422] [22740] [21420] [424] [423] [21894] [26303] [30688] [28710] [19514] [17544] [17545] [17546] [24984] [16713] [43579] [43620] [26302] [21421] [26301] [41671] [44522] [92646] [92630] [80577] [79501] [66849] [79499] [79500] [79502] [59518] [79951] [79950] [80578] [92649] [80579] [92650] [69343] [91159] [92647] [92648] [63772]

Uraria rufescens (DC.) Schindl. (1) [69077]

Vicia americana Muhl. ex Willd. (2) [63058] [63051]

Vicia amurensis Oett. (4) [64974] [17732] [438] [41941]

Vicia canescens Wilid. (1) [71757]

Vicia cassubica L. (1) [103579]

Vicia cracca L. (1) [67315]

Vicia faba L. (16) [81487] [62376] [88117] [77425] [64152] [77424] [82977] [69373] [88118] [44483] [37904] [22726] [40730] [39105] [22727] [30528]

Vicia hirsuta (L.) Gray (47) [23664] [30075] [52707] [39270] [36744] [21396] [8487] [5634] [44462] [53265] [8490] [39271] [23663] [8491] [16087] [29558] [19592] [37559] [19303] [13403] [17346] [19628] [40658] [17347] [35750] [91134] [78405] [78406] [84611] [65624] [84666] [78407] [60463] [84667] [84668] [64623] [71728] [91037] [62788] [80891] [77423] [77422] [91216] [62787] [91038] [81009] [66696]

Vicia lutea Boiss. (1) [31229]

Vicia monantha Retz. (1) [100767]

Vicia narbonensis L. (1) [68366]

Vicia pisiformis L. (1) [67330]

Vicia rigidula Royle (2) [4116] [21397]

Vicia sativa L. (61) [52912] [28610] [19377] [439] [39170] [38695] [8988] [6870] [44465] [440] [8989] [38830] [38697] [38696] [29378] [5114] [21392] [21393] [21394] [21395] [8197] [8489] [35456] [25314] [31903] [35455] [23717] [23727] [39862] [30539] [13356] [15571] [24591] [84665] [67057] [72912] [83108] [89789] [89788] [78404] [62379] [62378] [82978] [91115] [62377] [91112] [91113] [102925] [78403] [78402] [81417] [91114] [91110] [81184] [91109] [87503] [87502] [62789] [87504] [100350] [64134]

Vicia sativa L. (L.) Ehrh. (1)	[101161]
Vicia sativa L. (Moris) Arcang. (1)	[31895]
Vicia sativa L. ssp. *macrocarpa* (Moris) Arcang. (1)	[37555]
Vicia sativa L. ssp. *nigra* (L.) Ehrh. (2)	[102334] [104849]
Vicia sepium L. (2)	[103211] [67316]
Vicia sphaericus Retz. (1)	[38699]
Vicia tenera Graham (3)	[10854] [2539] [37974]
Vicia tenuifolia Roth (1)	[25313]
Vicia tetrasperma (L.) Schreb. (2)	[49524] [22728]
Vicia triflorum (L.)DC. (1)	[5633]
Vicia villosa Roth (1)	[102333]
Vigna aconitifolia (Jacq.) Marechal (26)	[65603] [71437] [79958] [65622] [62913] [79959] [79957] [65629] [74973] [66061] [14618] [39011] [19540] [40395] [21536] [53524] [4153] [50289] [39010] [44511] [46912] [19359] [26296] [36323] [11929] [19509]
Vigna cataiang Endl. (1)	[73801]
Vigna dalzelliana (Kuntze)Verdc. (1)	[70091]
Vigna marina (Burm.f.)Merrill (4)	[100431] [72351] [104321] [100430]
Vigna montana (L.) Verdc. var. lobata (1)	[58903]
Vigna mungo (L.) Hepper (11)	[79960] [78414] [72963] [78415] [78416] [74972] [91101] [46258] [14132] [36838] [27860]
Vigna radiata (L.) R.Wilczek (28)	[21533] [21537] [11827] [26324] [34927] [21898] [21899] [19309] [11925] [11923] [39159] [463] [462] [14036] [11924] [16220] [22998] [78411] [78412] [65630] [74233] [65707] [93938] [63783] [73014] [71920] [78413] [67634]
Vigna sp. (8)	[78420] [77658] [78419] [78409] [78418] [78410] [78417] [78408]
Vigna trilobata (L.) Aiton (2)	[5319] [4152]
Vigna trilobata (L.) Verdc. (16)	[11926] [11928] [5961] [19508] [11986] [6879] [9029] [6880] [5320] [461] [7482] [11927] [82544] [86788] [86787] [62915]
Vigna trilobata (L.)Verdc. (5)	[19506] [19507] [19505] [6878] [21535]

Vigna umbellata (Thunb.) Ohwi & H.Ohashi (11)	[17617] [16465] [4151] [13850] [4150] [9030] [66361] [65615] [66362] [62912] [663361]
Vigna unguiculata (L.) Walp. (5)	[74810] [65703] [74062] [42031] [46060]
Vigna unguiculata (L.) Walp. ssp. *unguiculata* (5)	[16274] [11990] [22895] [80581] [80580]
Vigna vexillata (L.) A.Rich. (32)	[86086] [88047] [86836] [78120] [78119] [81348] [86085] [88048] [78118] [75435] [86835] [86834] [75434] [88046] [86084] [21566] [21897] [21896] [24985] [9957] [10216] [21895] [26313] [26315] [26314] [7113] [466] [465] [9031] [31883] [464] [26316]
Viminaria juncea Sm. (1)	[100554]
Viola canescens Wallich (1)	[31855]
Wisteria sinensis (Sims) Sweet (2)	[47045] [32125]
Ziziphus mauritiana Lam. (1)	[37746]
Zornia diphylla (L.)Pers. (56)	[51152] [41180] [41803] [13862] [2629] [23415] [23416] [23417] [23418] [23005] [23414] [40849] [19539] [19538] [23004] [40560] [8468] [19525] [32892] [23413] [23419] [5615] [19389] [407] [406] [6711] [54499] [11862] [11861] [11860] [21910] [11859] [21907] [21908] [19390] [8992] [5627] [22778] [7026] [44460] [26260] [3529] [3530] [21530] [11638] [21531] [21532] [8991] [21909] [71719] [61725] [56448] [77427] [77426] [60624] [60452]
Zornia gibbosa Span. (17)	[75432] [75433] [91223] [59585] [91052] [73200] [89910] [63216] [74809] [91222] [66228] [61675] [91050] [73201] [89909] [91148] [91224]
Zornia sp. (1)	[67719]
Zornia virgata Moric. (1)	[60718]

Total no of species 795 and specimen 7633

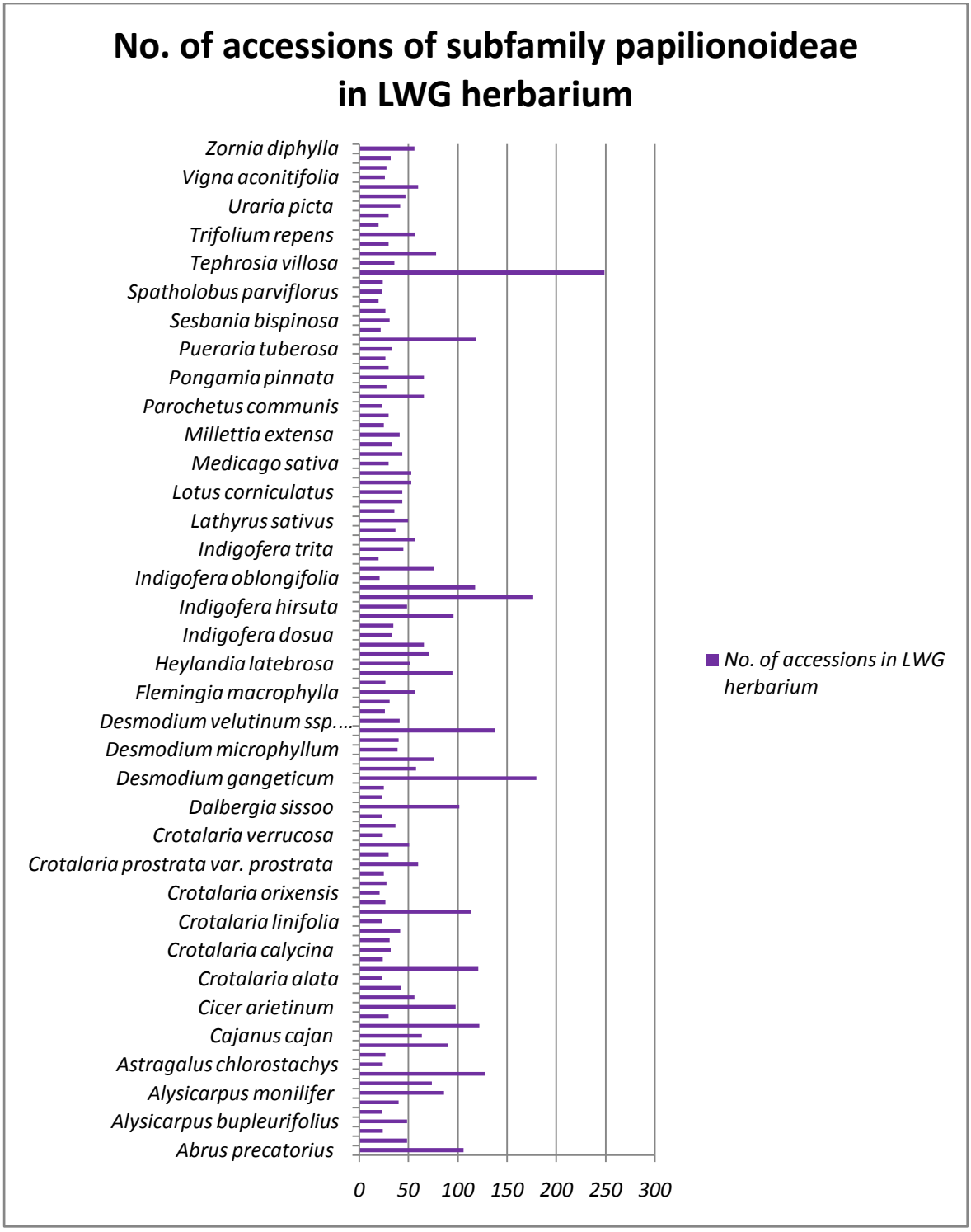


Fig 10 Graphical representation of accessions of subfamily papilionoideae family Leguminoseae in LWG herbarium.

2.4 Sub option 2: Genera:

HILWeb Software allowed reterival of representative herbarium accessions of a species belonging to a genus of family Leguminosae. A sample text run for genus *Abrus* in given Table 6 and it revels108 accessions in *Aburs precatorius* and 9 accessions in *Abrus pulchellus.*

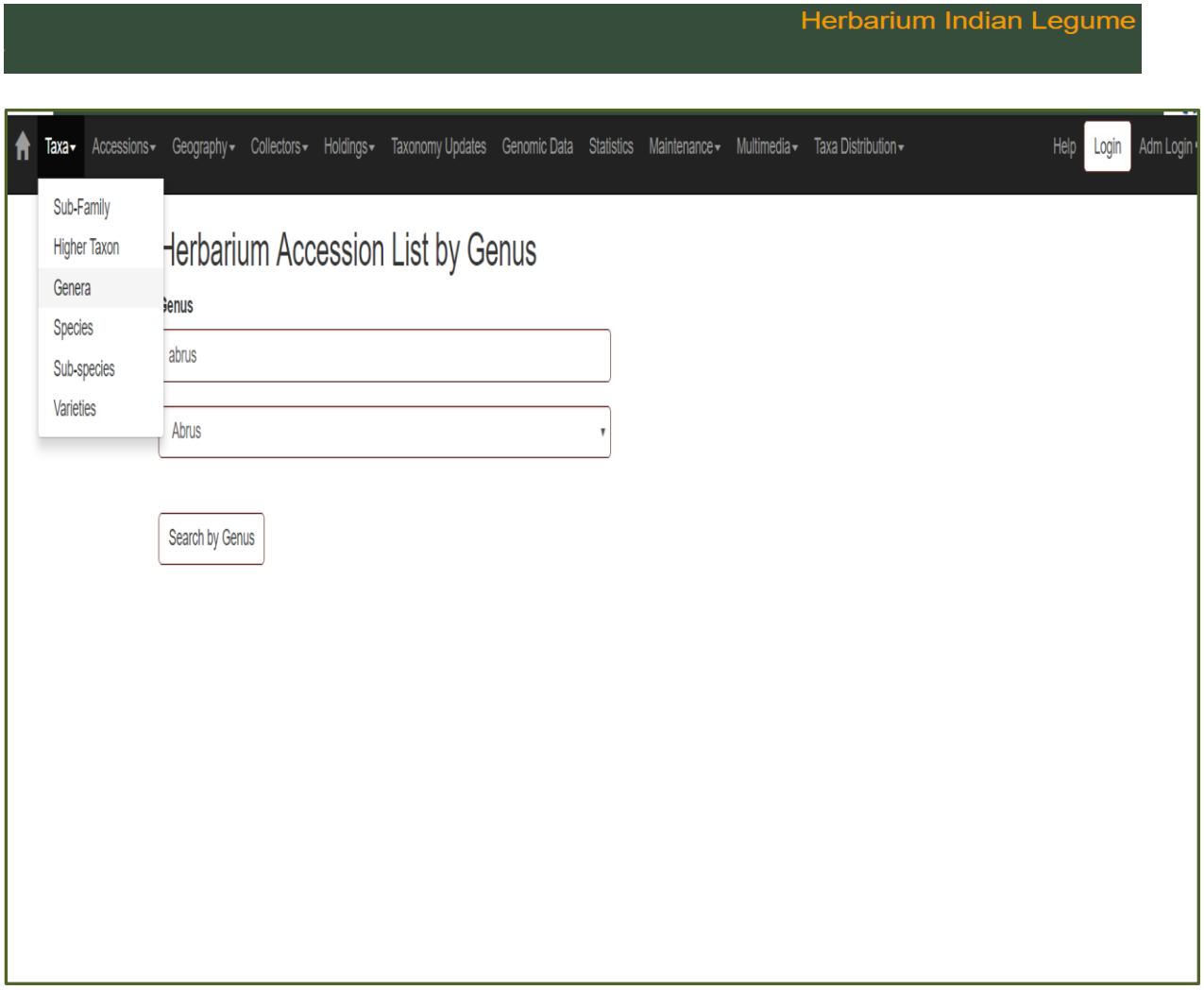


Fig. 11: Screen shot of HILWeb Software facilitates reterieval of accessions of a species belonging to a genus-Abrus

Table 6:Reterieval shows 117 specimens of genus *Abrus* family Leguminosae in LWG herbarium.

Species	Accession no.
Abrus precatorius L. (108)	[40517] [75695] [76180] [76181] [76293] [78770] [78771] [78772] [79743] [79744] [80508] [80509] [80510] [74794] [74418] [42835] [43747] [44456] [45872] [46512] [46642] [46910] [62024] [65668] [66063] [68960] [70028] [80849] [81869] [89351] [89352] [90016] [90818] [90819] [91156] [92053] [92055] [92058] [92475] [93980] [96545] [89350] [88138] [81870] [82915] [83111] [84320] [84407] [84408] [86798] [86799] [86800] [87823] [88136] [88137] [96546] [452] [18231] [19253] [19254] [19255] [19386] [19387] [19450] [19642] [19653] [21547] [21626] [17547] [17396] [17356] [6694] [7327] [7452] [12602] [13345] [13393] [13871] [15057] [15062] [15110] [17038] [22714] [23193] [23194] [30957] [31119] [31150] [31726] [33349] [35174] [35806] [36586] [37301] [37921] [38949] [30654] [29443] [39736] [23476] [23499] [23507] [23540] [23633] [23634] [23635] [25684] [28004]
Abrus pulchellus Thwaites (9)	[31913] [3975] [6539] [87046] [88184] [23530] [67636] [91106] [87047]

Total no of species 2 and specimen 117

Table 7: Genus wise analysis reveals that 10477 accessions belong to a198 genera of Leguminosae in LWG herbarium.

List of Genera

S. No.	*Genus*	Total Accessions
1	*Abrus*	117
2	*Acacia*	678
3	*Adenanthera*	9
4	*Aeschynomene*	51
5	*Afzelia*	1
6	*Aganope*	3
7	*Albizia*	157
8	*Alhagi*	24
9	*Alysicarpus*	431
10	*Amherstia*	6
11	*Amorpha*	4
12	*Andira*	1
13	*Arachis*	16
14	*Archidendron*	12
15	*Argyrolobium*	11
16	*Astracantha*	1
17	*Astragalus*	125
18	*Atylosia*	3
19	*Baptisia*	1
20	*Bauhinia*	461
21	*Bolusanthus*	6
22	*Brachysema*	2
23	*Broussonetia*	17
24	*Brownea*	14
25	*Brya*	4
26	*Butea*	106
27	*Caesalpinia*	144
28	*Cajanus*	213
29	*Calliandra*	30
30	*Calophaca*	1
31	*Campylotropis*	36
32	*Canavalia*	35
33	*Cantharospermum*	1
34	*Caragana*	13
35	*Cassia*	155
36	*Castanospermum*	1

37	*Centrolobium*	1
38	*Centrosema*	8
39	*Ceratonia*	1
40	*Cercis*	3
41	*Chamaecrista*	113
42	*Chorizema*	5
43	*Cicer*	102
44	*Clianthus*	1
45	*Clitoria*	68
46	*Codariocalyx*	50
47	*Collaea*	1
48	*Colutea*	3
49	*Corola*	1
50	*Crotalaria*	818
51	*Cullen*	38
52	*Cyamopsis*	23
53	*Cynometra*	6
54	*Cytisus*	10
55	*Dalbergia*	192
56	*Dalhousiea*	1
57	*Delonix*	19
58	*Dendrolobium*	18
59	*Derris*	37
60	*Desmanthus*	3
61	*Desmodiastrum*	3
62	*Desmodium*	699
63	*Dicerma*	1
64	*Dichrostachys*	30
65	*Dillwynia*	14
66	*Dolichos*	3
67	*Doodia*	4
68	*Dorycnium*	2
69	*Dumasia*	29
70	*Eleiotis*	10
71	*Elephantorrhiza*	1
72	*Entada*	6
73	*Enterolobium*	2
74	*Eriosema*	10
75	*Ervum*	1
76	*Erythrina*	43
77	*Eutaxia*	4
78	*Flemingia*	265

79	*Galactia*	23
80	*Galega*	2
81	*Genista*	6
82	*Gleditsia*	6
83	*Gliricidia*	3
84	*Glycine*	18
85	*Glycyrrhiza*	4
86	*Gueldenstaedtia*	1
87	*Haematoxylum*	5
88	*Hardenbergia*	4
89	*Hardwickia*	8
90	*Hedysarum*	5
91	*Heylandia*	52
92	*Hippocrepis*	3
93	*Hovea*	9
94	*Humboldtia*	2
95	*Hymenaea*	1
96	*Hypaphorus*	1
97	*Indigofera*	897
98	*Indopiptadenia*	3
99	*Inga*	1
100	*Kennedia*	7
101	*Kummerowia*	1
102	*Lablab*	57
103	*Laburnum*	4
104	*Lathyrus*	130
105	*Lens*	28
106	*Lespedeza*	165
107	*Leucaena*	48
108	*Lonchocarpus*	3
109	*Lotus*	47
110	*Lupinus*	23
111	*Macrotyloma*	6
112	*Matoa*	1
113	*Medicago*	165
114	*Meizotropis*	1
115	*Melilotus*	105
116	*Meristotropis*	1
117	*Millettia*	91
118	*Millingtonia*	3
119	*Mimosa*	177
120	*Mirbelia*	2

121	*Moghania*	2
122	*Moullava*	3
123	*Mucuna*	36
124	*Mundulea*	1
125	*Myroxylon*	1
126	*Neptunia*	35
127	*Nogra*	1
128	*Onobrychis*	2
129	*Ononis*	3
130	*Ophrestia*	2
131	*Ormosia*	1
132	*Ornithopus*	1
133	*Ougeinia*	1
134	*Oxylobium*	5
135	*Oxytropis*	4
136	*Pachyrhizus*	2
137	*Paracalyx*	4
138	*Paraserianthes*	2
139	*Parkia*	7
140	*Parkinsonia*	24
141	*Parochetus*	26
142	*Peltophorum*	9
143	*Phaseolus*	12
144	*Phyllodium*	66
145	*Phyllota*	3
146	*Piliostigma*	1
147	*Piptadenia*	1
148	*Piptanthus*	6
149	*Piscidia*	1
150	*Pisum*	28
151	*Pithecellobium*	42
152	*Platylobium*	3
153	*Pongamia*	70
154	*Prosopis*	63
155	*Pseudarthria*	3
156	*Psilorhegma*	1
157	*Psoralea*	6
158	*Pterocarpus*	36
159	*Pterolobium*	3
160	*Ptychosema*	1
161	*Pueraria*	65
162	*Rhynchosia*	176

163	*Robinia*	13
164	*Rothia*	3
165	*Saraca*	32
166	*Securigera*	4
167	*Senna*	518
168	*Sesbania*	92
169	*Shuteria*	16
170	*Sindora*	1
171	*Smithia*	57
172	*Sophora*	28
173	*Spartium*	9
174	*Spatholobus*	23
175	*Spongiocarpella*	24
176	*Stizolobium*	4
177	*Strophostyles*	2
178	*Stylosanthes*	11
179	*Swainsona*	11
180	*Tadehagi*	17
181	*Tamarindus*	32
182	*Taverniera*	9
183	*Tephrosia*	366
184	*Teramnus*	81
185	*Thermopsis*	7
186	*Trachylobium*	1
187	*Trifolium*	138
188	*Trigonella*	70
189	*Ulex*	7
190	*Uraria*	121
191	*Vachellia*	1
192	*Vicia*	154
193	*Vigna*	138
194	*Viminaria*	1
195	*Wisteria*	4
196	*Xylia*	10
197	*Zapoteca*	1
198	*Zornia*	77

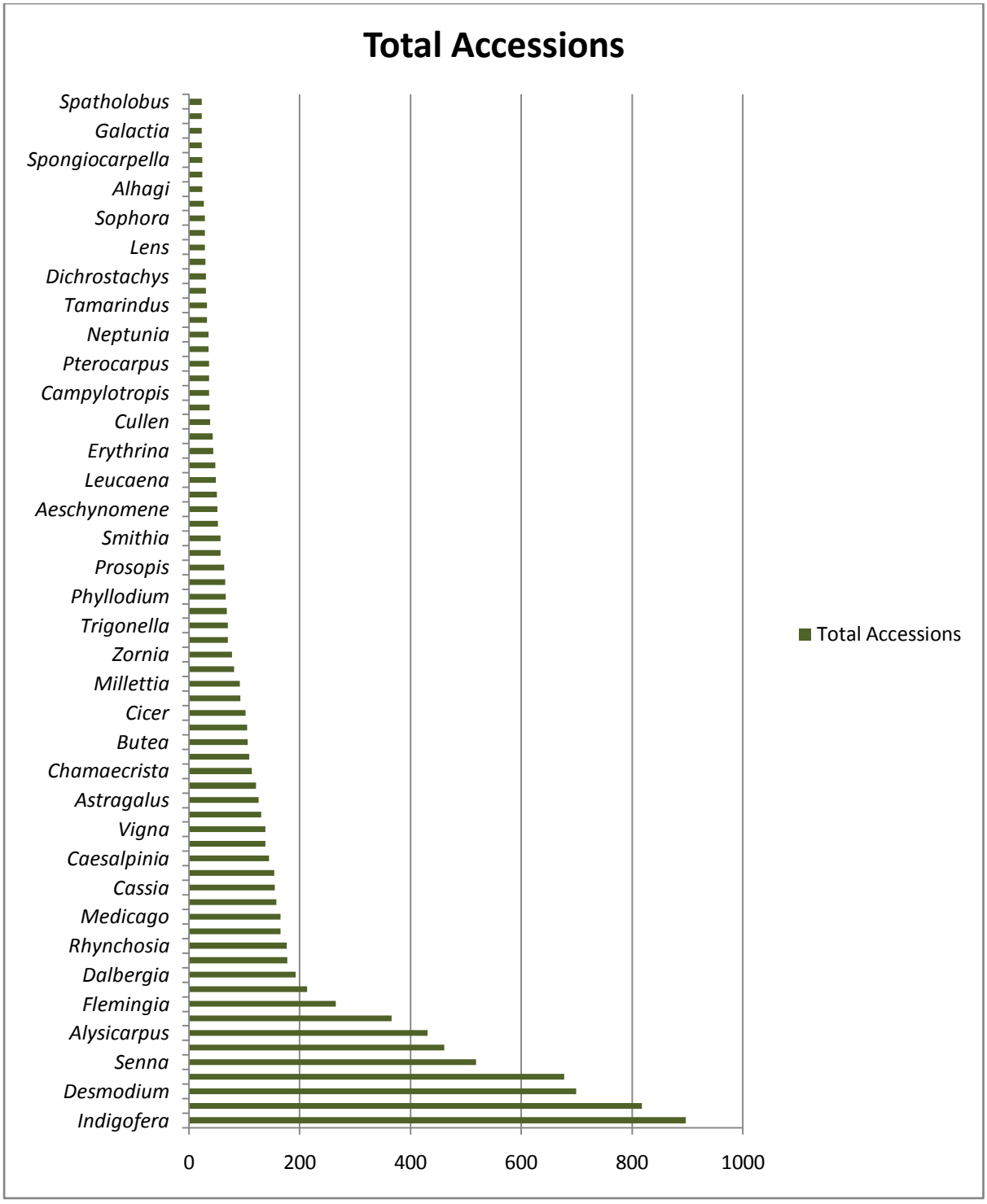


Fig12: Genus wise graphical representation reveal maximum no. 897 accession belong to genus *Indigofera* followed by *Desmodium* , *Senna* and *Alysicarpus* and minimum no. of accession in *Galactia* followed by *sptholobus*.

2.5 Sub option 3: Species:

User can retrieve information for a given species profile and it shows value addition to herbarium label data. It may be mentioned that a herbarium label contains information on mainly nomenclature, family, genus, species ant author etc. occurrence (locality, district, field note, collector and determinative etc. However, digitization of herbarium specimens data allows value additions on various aspects namely upgration of taxonomy, GPS data, Live images, video and genomics information of the specimen

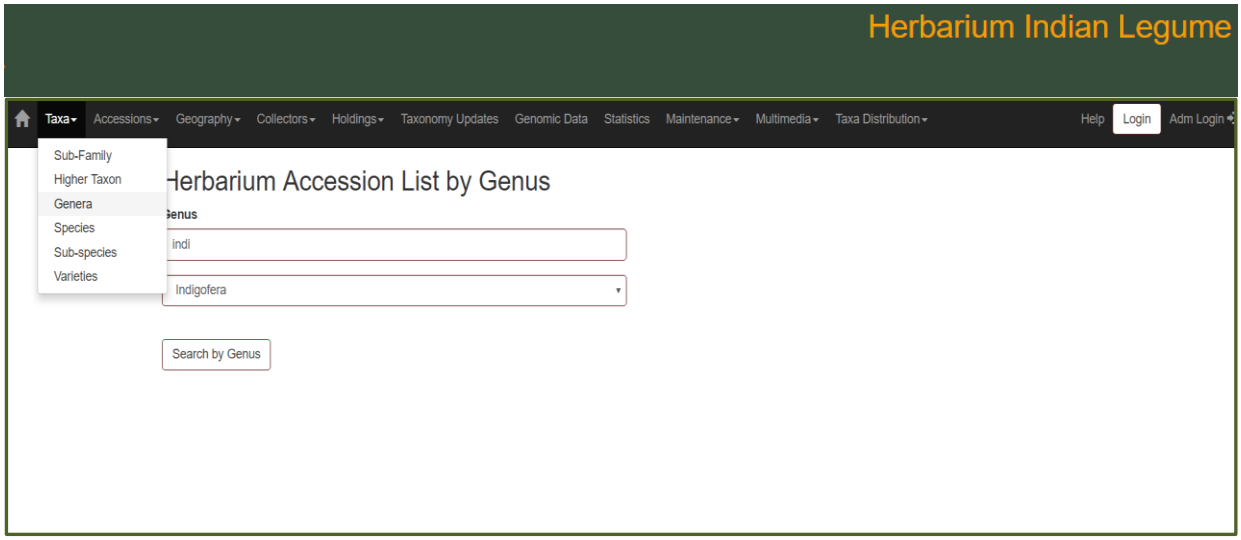


Fig. 13Screen shot showing retrieval of digitized information of specimen of *Indigofera tinctoria* represented in LWG herbarium Step 1 select Taxa

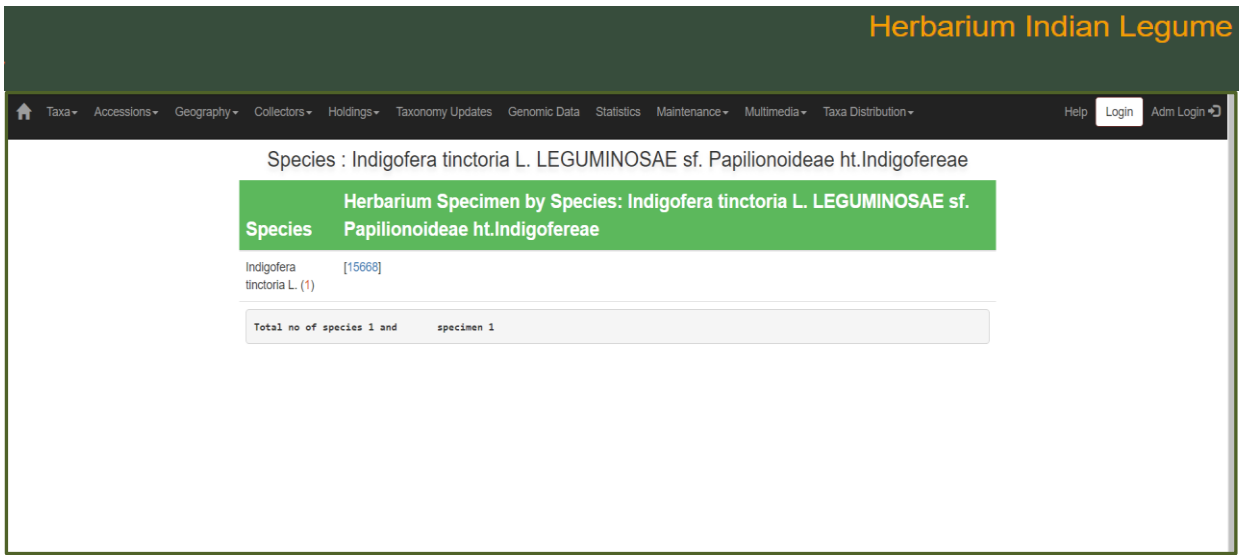


Fig. 13.1 Screen shot showing retrieval of digitized information of specimen of *Indigofera tinctoria* represented in LWG herbarium Step 2 select sub option species

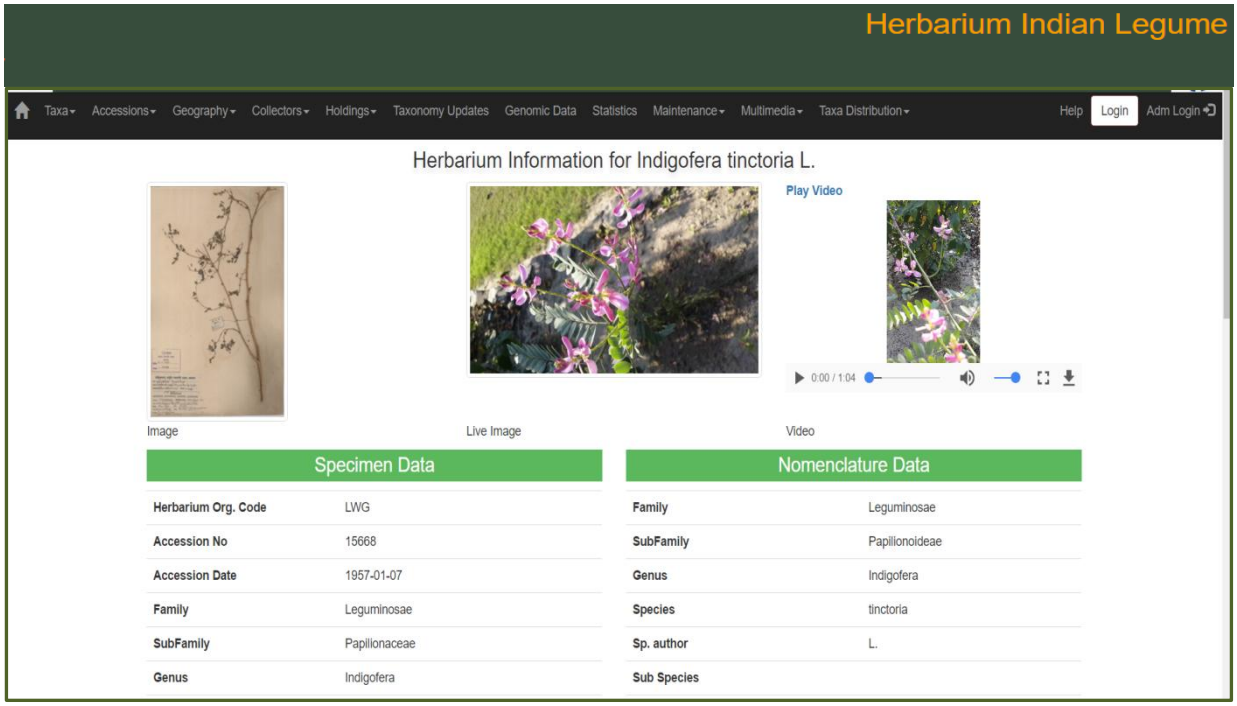


Fig. 13.2 Screen shot showing retrieval of digitized information of specimen of *Indigofera tinctoria* represented in LWG herbarium Step 3 accession no.

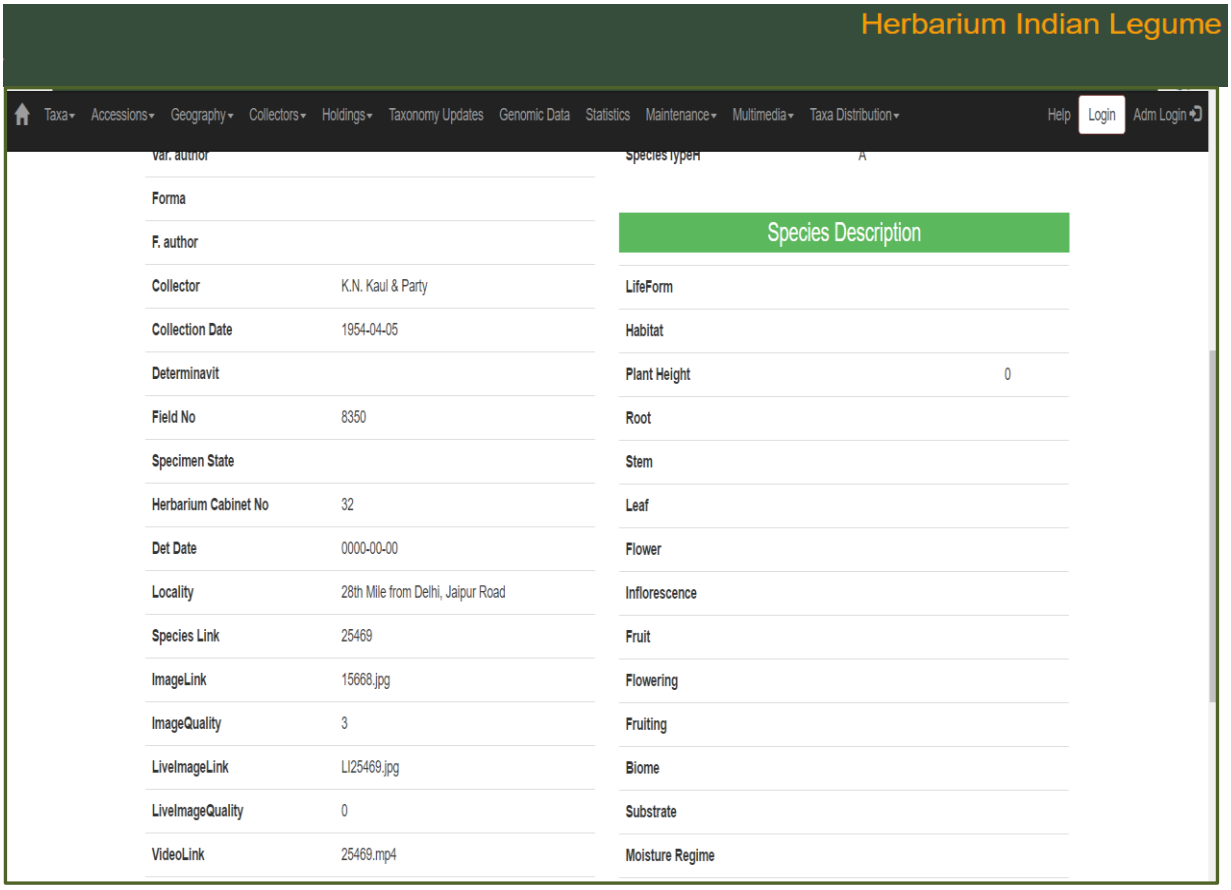


Fig. 13.3 Screen shot showing retrieval of digitized information of specimen of *Indigofera tinctoria* represented in LWG herbarium Step 4 species description

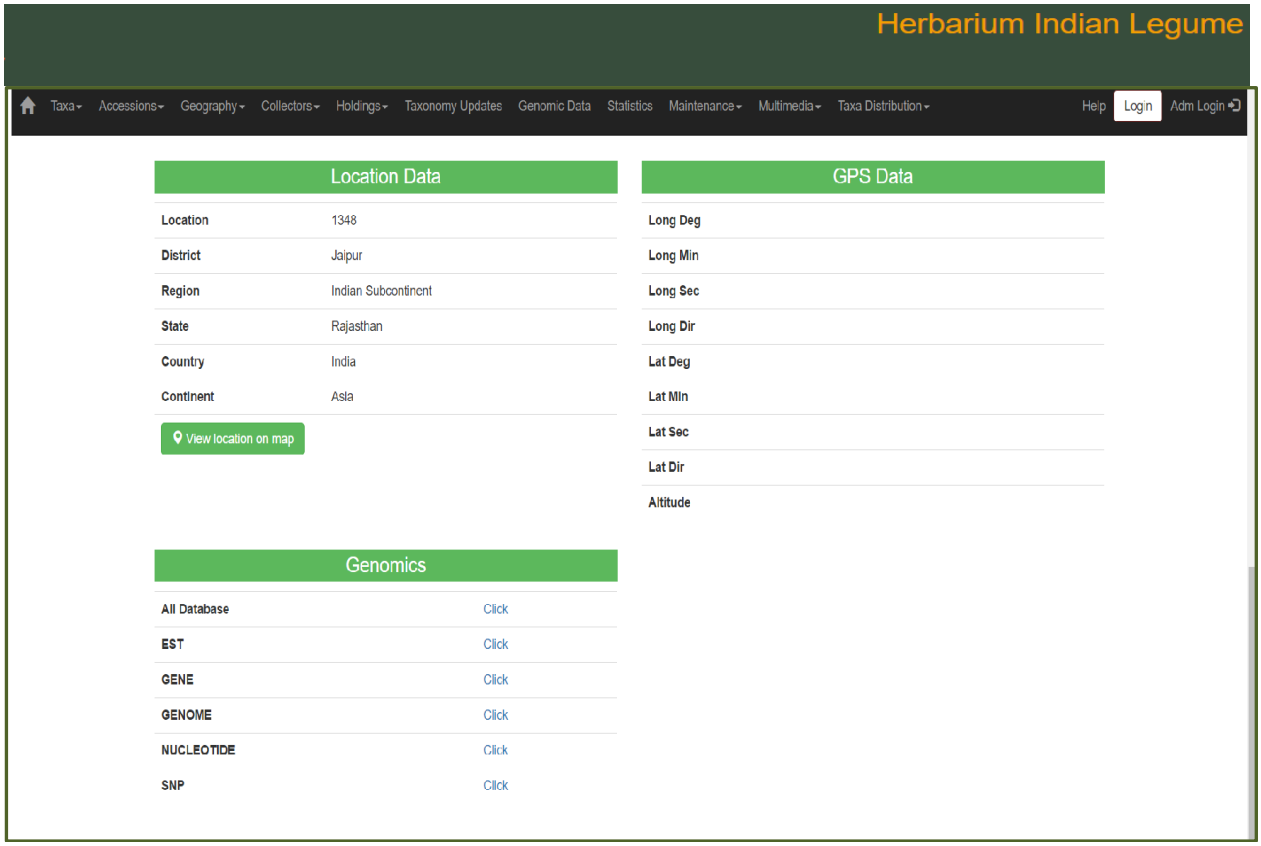


Fig. 13.4 Screen shot showing retrieval of digitized information of specimen of *Indigofera tinctoria* represented in LWG herbarium Step 5 Location and GPS data.

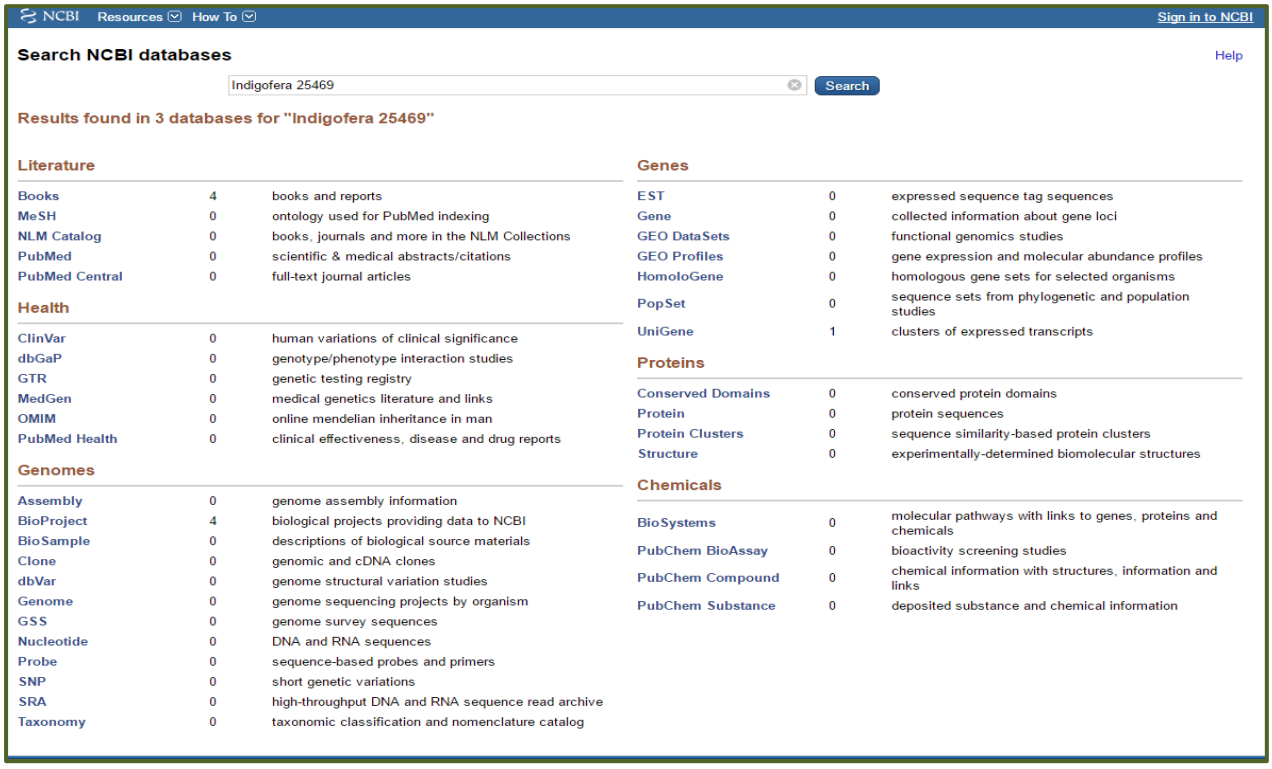


Fig. 13.5Screen shot showing retrieval of digitized information of specimen of *Indigofera tinctoria* represented in LWG herbarium Step Genomic data.

3. Option-2: Accessions:

3.1. Sub option : By Common name:

HILWeb software option 'Accessions' sub option ' By common name' allows search of species representative speciemens on the basis of common names and thus making the system common man friendly. A sample test runs using option 'accession' sub option 'by common name 'i' of *Indigofera* tinctoria is presented in the Fig 14.

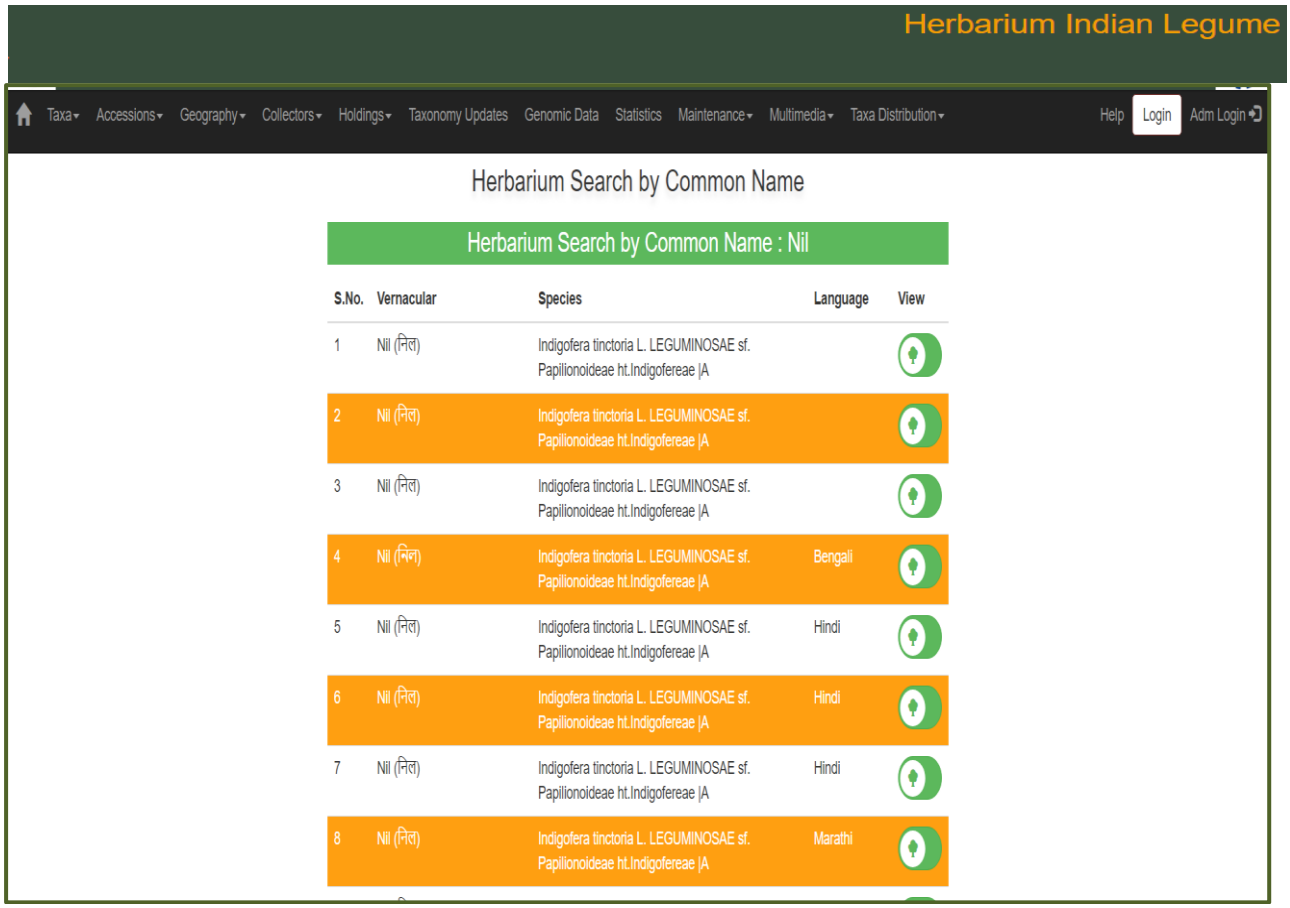


Fig 14: Screen shot showing HIL Web software provides search of information on the basis of common name.

3. Option-2: Accessions:

3.2. Sub option : By Accession no.

User can retrieve information about list of plant species on the basis of accessions for a given range of specimens. A sample test runs for a range of accession no 1-500 in the given Table 8.

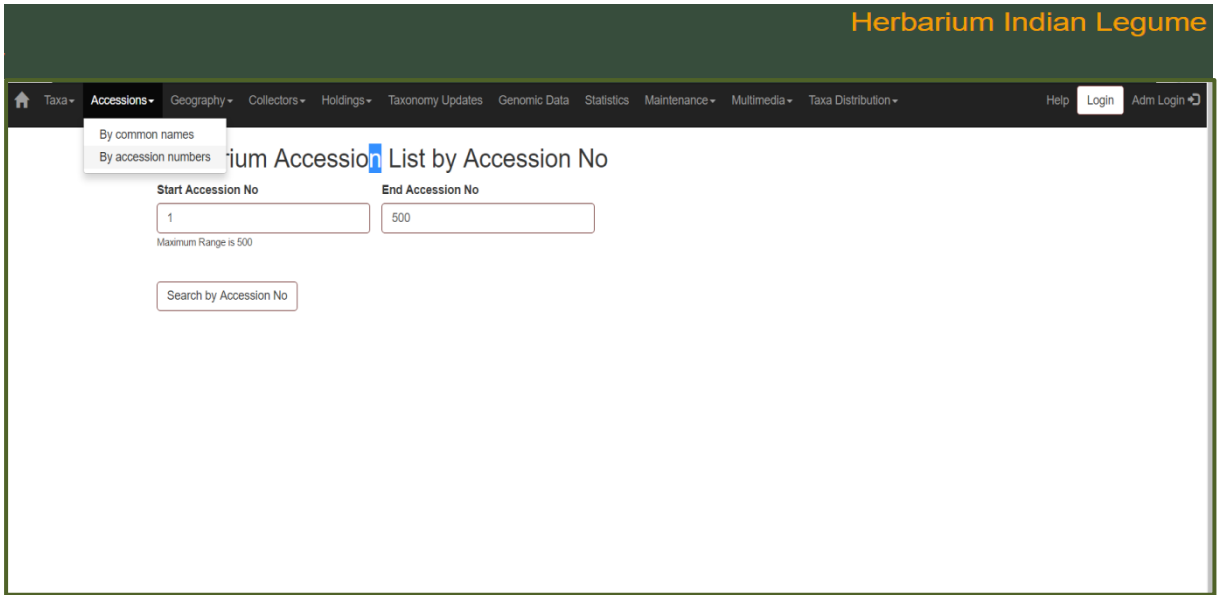


Fig 15: Screen shot showing retrieval of information on herbarium specimen represented in LWG on the basis of accession no.

Table 8 :Retrieval of information on plant specimens for a test range of accession number from 1-500 in LWG Herbarium

S.No.	Accession No.	Species	Cabinet no.	Status	View
1	452	*Abrus precatorius* L.	28	Ok	
2	403	*Aeschynomene indica* L.	28	Ok	
3	402	*Alhagi maurorum* Medik.		Ok	
4	428	*Alysicarpus bupleurifolius* (L.)DC.	28	Ok	
5	429	*Alysicarpus longifolius* (Spreng.) Wight & Arn.	28	Ok	
6	425	*Alysicarpus* moifer (L.)DC.	28	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
7	430	*Alysicarpus* rugosus (Willd.) DC.	28	Ok	
8	431	*Alysicarpus* tetragonolobus Edgew.	28	Ok	
	427	*Alysicarpus* vaginalis (L.)DC.	28	Ok	
10	426	*Alysicarpus* vaginalis (L.)DC.	28	Ok	
11	405	*Arachis hypogaea* L.	28	Ok	
12	358	*Argyrolobium flaccidum* (Royle) Jaub. & Spach	28	Ok	
13	359	*Argyrolobium roseum* (Cambess.) Jaub. & Spach	28	Ok	
14	401	*Astragalus leucocephalus* Bunge		Ok	
15	500	*Bauhinia acuminata* L.	38	Ok	
16	499	*Bauhinia acuminata* L.	38	Ok	
17	491	*Caesalpinia bonduc* (L.) Roxb.	38	Ok	
18	490	*Caesalpinia bonduc* (L.) Roxb.	38	Ok	
19	495	*Caesalpiniacoriaria* (Jacq.) Willd.	38	Ok	
20	494	*Caesalpiniadecapetala* (Roth) Alston	38	Ok	
21	493	*Caesalpiniapulcherrima* (L.)Sw.	38	Ok	
22	492	*Caesalpiniapulcherrima* (L.)Sw.	38	Ok	
23	469	*Cajanus cajan* (L.) Millsp.	29	Ok	
24	468	*Cajanus cajan* (L.) Millsp.	29	Ok	
25	471	*Cajanus crassus* (King) Maesen var. -	28	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
26	470	*Cajanus platycarpus* (Benth.) Maesen	28	Ok	
27	434	Campylotropis *stenocarpa* (Klotzsch) Schindl.	33	Ok	
28	460	Canavalia *ensiformis* (L.)DC.	29	Ok	
29	436	*Cicer arietinum* L.	29	Ok	
30	435	*Cicer arietinum* L.	29	Ok	
31	453	*Clitoriaternatea* L.	30	Ok	
32	330	*Crotalaria albida* Roth	30	Ok	
33	331	*Crotalaria albida* Roth	30	Ok	
34	352	*Crotalaria allophylla* Thulin.	30	Ok	
35	353	*Crotalaria anthyllopsis* Baker	30	Ok	
36	347	*Crotalaria distans* Benth.	30	Ok	
37	344	*Crotalaria dura* J.M.Wood & M.S.Evans	30	Ok	
38	357	*Crotalaria globifera* E.Mey.	30	Ok	
39	356	*Crotalaria globifera* E.Mey.	30	Ok	
40	329	*Crotalaria humifusa* Benth.		Ok	
41	348	*Crotalaria incana* L.	30	Ok	
42	337	*Crotalaria juncea* L.	30	Ok	
43	355	*Crotalaria laburnifolia* (Baker f.) Verd. ssp. *australis* (Baker f.) Polhill	30	Ok	
44	354	*Crotalaria laburnifolia* (Baker f.) Verd. ssp.	30	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
		australis (Baker f.) Polhill			
45	349	*Crotalaria laburnifolia* L.	30	Ok	
46	350	*Crotalaria laburnifolia* L.	30	Ok	
47	351	*Crotalaria lotoides* Benth.	30	Ok	
48	340	*Crotalaria medicaginea* Lam.	30	Ok	
49	341	*Crotalaria medicaginea* Lam.	30	Ok	
50	339	*Crotalaria medicaginea* Lam.	30	Ok	
51	338	*Crotalaria medicaginea* Lam.	30	Ok	
52	342	*Crotalaria pallida* Aiton	30	Ok	
53	333	*Crotalaria spectabilis* Roth	30	Ok	
54	332	*Crotalaria spectabilis* Roth	30	Ok	
55	334	*Crotalaria spectabilis* Roth	30	Ok	
56	335	*Crotalaria spectabilis* Roth	30	Ok	
57	346	*Crotalaria sphaerocarpa* DC.	30	Ok	
58	336	*Crotalaria tetragona* Andrews	30	Ok	
59	343	*Crotalaria trichotoma* Bojer	30	Ok	
60	345	*Crotalaria virgulata* Klotzsch	30	Ok	
61	379	*Cyamopsispsoraloides* DC.	30	Ok	
62	485	*Dalbergia sericea* G.Don.	30	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
63	484	*Dalbergia sericea* G.Don.	30	Ok	
64	481	*Dalbergia sissoo*DC.	30	Ok	
65	480	*Dalbergia sissoo*DC.	30	Ok	
66	478	*Dalbergia sissoo*DC.	30	Ok	
67	483	*Dalbergia sissoo*DC.	30	Ok	
68	479	*Dalbergia sissoo*DC.	30	Ok	
69	482	*Dalbergia sissoo*DC.	30	Ok	
70	486	Derris *scandens* (Roxb.) Benth.	30	Ok	
71	416	*Desmodium concinnum*DC.	31	Ok	
72	412	*Desmodium confertum*DC.	31	Ok	
73	414	*Desmodium gangeticum* (L.)DC.	31	Ok	
74	413	*Desmodium gangeticum* (L.)DC.	31	Ok	
75	415	*Desmodium gangeticum* (L.)DC.	31	Ok	
76	421	*Desmodium hookerianum* D.Dietr.	31	Ok	
77	410	*Desmodium hookerianum* D.Dietr.	31	Ok	
78	409	*Desmodium laxiflorum*DC.	31	Ok	
79	408	*Desmodium laxiflorum*DC.	31	Ok	
80	422	*Desmodium microphyllum* (Thunb.) DC.	30	Ok	
81	411	*Desmodium multiflorum*DC.	31	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
82	417	*Desmodium polycarpon* (Poir.) DC.	31	Ok	
83	419	*Desmodium triflorum* (L.)DC.	31	Ok	
84	418	*Desmodium triflorum* (L.)DC.	31	Ok	
85	420	*Desmodium triflorum* (L.)DC.	31	Ok	
86	454	*Dumasiavillosa*DC.	31	Ok	
87	455	*Dumasia villosa*DC.	31	Ok	
88	477	*Flemingia congesta* Roxb. ex W.T.Aiton	32	Ok	
89	476	*Flemingia strobilifera* (L.) W.T.Aiton	32	Ok	
90	496	*Haematoxylum campechianum* L.		Ok	
91	390	*Indigofera dosua* D.Don		Ok	
92	388	*Indigofera heterantha* Brandis	32	Ok	
93	389	*Indigofera heterantha* Brandis	32	Ok	
94	381	*Indigofera linifolia* (L.f.) Retz.	32	Ok	
95	380	*Indigofera linifolia* (L.f.) Retz.	32	Ok	
96	382	*Indigofera linnaei* Ali		Ok	
97	383	*Indigofera linnaei* Ali	32	Ok	
98	384	*Indigofera linnaei* Ali	32	Ok	
99	386	*Indigofera trifoliata* L.	32	Ok	
100	385	*Indigofera trifoliata* L.	32	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
101	387	*Indigofera trita* L.	32	Ok	
102	467	*Lablab purpureus* (L.)Sweet	31	Ok	
103	444	*Lathyrus aphaca* L.	33	Ok	
104	443	*Lathyrus aphaca* L.	33	Ok	
105	445	*Lathyrus aphaca* L.	33	Ok	
106	446	*Lathyrus aphaca* L.	33	Ok	
107	449	*Lathyrus odoratus* L.	33	Ok	
108	447	*Lathyrus sativus* L.	33	Ok	
109	441	*Lathyrus sativus* L.	33	Ok	
110	448	*Lathyrus sphaericus* Retz.	33	Ok	
111	442	*Lens culinaris* Medik.	33	Ok	
112	432	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don	33	Ok	
113	433	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don	33	Ok	
114	378	*Lotus corniculatus* L.	33	Ok	
115	369	*Medicago lupulina* L.	34	Ok	
116	363	*Medicago monantha* (C.A.Mey.) Trautv.	37	Ok	
117	366	*Medicago polymorpha* L.	34	Ok	
118	367	*Medicago polymorpha* L.	34	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
119	365	*Medicago polymorpha* L.	34	Ok	
120	368	*Medicago sativa* L.	34	Ok	
121	370	*Melilotus indicus* (L.) All.	33	Ok	
122	371	*Melilotus indicus* (L.) All.	33	Ok	
123	374	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi	33	Ok	
124	373	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi	33	Ok	
125	372	*Melilotus officinalis* Medik. ssp. *alba* (Medik.) H.Ohashi & Tateishi	33	Ok	
126	396	*Millettia auriculata* Baker ex Brand.	34	Ok	
127	395	*Millettia extensa* (Benth.) Baker	34	Ok	
128	459	*Mucuna pruriens* (L.)DC.	34	Ok	
129	498	*Parkinsonia aculeata* L.	39	Ok	
130	497	*Parkinsonia aculeata* L.	39	Ok	
131	489	*Peltophorum pterocarpum* (DC.) K.Heyne	39	Ok	
132	451	*Pisum sativum* L.	34	Ok	
133	450	*Pisum sativum* L.	34	Ok	
134	487	*Pongamia pinnata* (L.) Pierre	34	Ok	
135	475	*Rhynchosia minima* (L.)DC.	35	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
136	474	*Rhynchosia minima* (L.)DC.	35	Ok	
137	472	*Rhynchosia minima* (L.)DC.	35	Ok	
138	473	*Rhynchosia minima* (L.)DC.	35	Ok	
139	398	*Sesbania bispinosa* (Jacq.) W.Wight	34	Ok	
140	400	*Sesbania grandiflora* (L.)Pers.	34	Ok	
141	399	*Sesbania grandiflora* (L.)Pers.	34	Ok	
142	397	*Sesbania sesban* (L.)Merr.	34	Ok	
143	457	*Shuteria sp.*	35	Ok	
144	456	*Shuteria involucrata* (Wall.) Wight & Arn.	35	Ok	
145	404	*Smithia sensitiva* Aiton	35	Ok	
146	488	*Sophora tomentosa* L.	35	Ok	
147	360	*Spartium junceum* L.	35	Ok	
148	394	*Tephrosia purpurea* (L.)Pers.	36	Ok	
149	392	*Tephrosia purpurea* (L.)Pers.	36	Ok	
150	391	*Tephrosia purpurea* (L.)Pers.	36	Ok	
151	393	*Tephrosia purpurea* (L.)Pers.	36	Ok	
152	458	*Teramnus labialis* (L.f.) Spreng.	37	Ok	
153	375	*Trifolium pratense* L.	37	Ok	
154	376	*Trifolium repens* L.	37	Ok	

S.No.	Accession No.	Species	Cabinet no.	Status	View
155	377	*Trifolium repens* L.	37	Ok	
156	364	*Trigonella balansae* Boiss. & Reut.	37	Ok	
157	361	*Trigonella foenum-graecum* L.	37	Ok	
158	362	*Trigonella gracilis* Benth.		Ok	
159	423	*Uraria picta* (Jacq.) DC.	37	Ok	
160	424	*Uraria picta* (Jacq.) DC.	37	Ok	
161	438	*Vicia amurensis* Oett.	37	Ok	
162	440	*Vicia sativa* L.	37	Ok	
163	439	*Vicia sativa* L.	37	Ok	
164	462	*Vigna radiata* (L.) R.Wilczek	34	Ok	
165	463	*Vigna radiata* (L.) R.Wilczek	34	Ok	
166	461	*Vigna trilobata* (L.) Verdc.	34	Ok	
167	465	*Vigna vexillata* (L.) A.Rich.	37	Ok	
168	466	*Vigna vexillata* (L.) A.Rich.	37	Ok	
169	464	*Vigna vexillata* (L.) A.Rich.	37	Ok	
170	406	*Zornia diphylla* (L.)Pers.	37	Ok	
171	407	*Zornia diphylla* (L.)Pers.	37	Ok	

4. Option-3: Geography

4.1. Sub option : Species list by State

HILWeb software option 'Geography' sub option allows occurrence of species from a county, state, district or a locality based on herbarium specimens. A sample test run results for species represented from Maharashtra states is given in the Table 9.

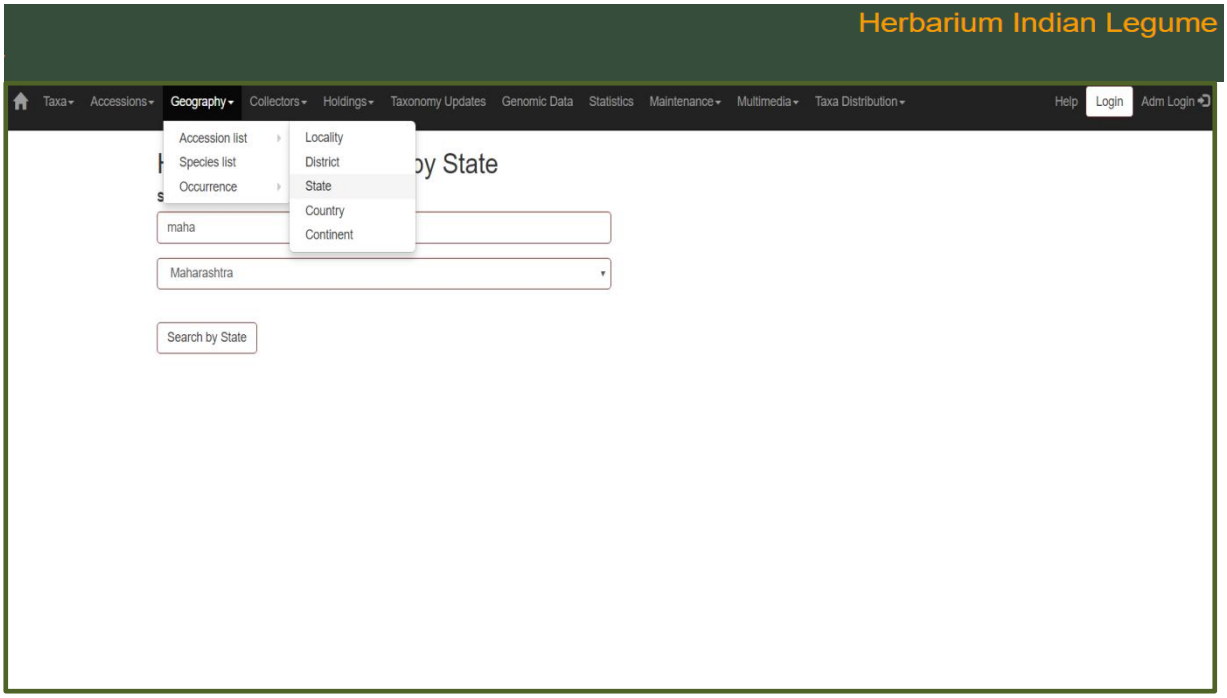


Fig. 16:Screen shot showing retrieval of information on herbarium specimen represented in LWG on the basis of geographical distribution

Table 9: Sample test run showing retrieval of information on state wise distribution of legumes on the basis of herbarium specimens of LWG Herbarium

Species for State: Maharashtra

Species	Accessions
Abrus precatorius L.	[33349] [43747]
Acacia arabica (Lam.) Willd. (6)	[34982] [34688] [12373] [31823] [21500] [22748]
Acaciacaesia (L.)Willd.	[23729]
Acaciacanescens (Britton & Killip) Garcia-Barr.	[16279]

Acaciacatechu (L.f.) Willd.	[47613] [55294]
Acaciachundra (Rottler) Willd.	[90763] [90762]
Acaciafarnesiana (L.)Willd.	[34981]
Acacialeucophloea (Roxb.) Willd. (6)	[34950] [45309] [5966] [17351] [23731] [46579]
Acaciapennata (L.)Willd. (4)	[22746] [34948] [13570] [45308]
Acaciaserra Benth.	[538]
Acaciasinuata (Lour.)Merril	[90713]
Albizia amara (Roxb.) B.Boivin	[36531]
Albizia lebbeck (L.) Benth.	[31881] [31889]
Albizia odoratissima (L.f.) Benth.	[71026]
Albizia procera (Roxb.) Benth. (3)	[36530] [14721] [36528]
Alysicarpus bupleurifolius (L.)DC.	[43584]
Alysicarpus hamosus Edgew.	[43598]
Alysicarpus heyneanus Wight & Arnott	[3399]
Alysicarpus longifolius (Spreng.) Wight & Arn.	[47558]
Alysicarpus moifer (L.)DC.	[48568]
Alysicarpus rugosus (Willd.) DC. (12)	[48427] [35014] [22700] [54774] [43830] [46907] [34934] [43748] [47562] [21432] [34858] [21433]
Alysicarpus vaginalis (L.)DC. (4)	[45081] [46908] [44281] [47529]
Amherstia nobilis Wall.	[59515]
Bauhiniapurpurea L.	[36512]
Bauhiniaracemosa Lam. (9)	[49870] [44304] [34605] [34819] [45145] [45560] [17106] [15575] [13564]
Bauhiniatomentosa L.	[34889]
Bauhiniavariegata L. (3)	[19355] [36513] [36511]
Belamcanda chinensis DC.	[5982]

Buteamonosperma (Lam.) Taub. (3)	[34491] [21585] [19495]
Caesalpiniabonduc (L.) Roxb.	[19473]
Caesalpiniacucullata Roxb.	[14037]
Caesalpiniacucullatum Roxb.	[14038]
Caesalpiniadecapetala (Roth) Alston	[21577]
Caesalpiniapulcherrima (L.)Sw.	[34942]
Cajanus cajan (L.) Millsp. (3)	[34931] [16272] [19334]
Cajanus crassus (King) Maesen	[22754] [36520]
Cajanus crassus (King) Maesen	[36518]
Cajanus scarabaeoides (L.) Thouars (3)	[34685] [48795] [45301]
Cassia fistula L. (3)	[59516] [8565] [43627]
Chamaecristaleschenaultiana (DC.) Degener	[525]
Chamaecrista pumila (Lam.) K.Larsen	[46509] [50311]
Cicer arietinum L. (4)	[34936] [39897] [59492] [33174]
Clitoria annua J.Graham	[8051]
Codariocalyx motorius (Houtt.) H.Ohashi	[55786]
Crotalaria albida Roth	[34151]
Crotalaria filipes Benth. (3)	[19655] [21447] [5969]
Crotalaria hirsuta Wilid. (3)	[34856] [56248] [47528]
Crotalaria juncea L.	[19463] [34823]
Crotalaria leptostachya Benth	[14709]
Crotalaria linifolia L. (4)	[47561] [47600] [5980] [5960]
Crotalaria medicaginea Lam. (7)	[45077] [45082] [46928] [19479] [46927] [19480] [45311]
Crotalaria mysorensis Roth (4)	[34904] [34978] [16013] [34971]
Crotalaria orixensis Wilid. (3)	[34857] [43692] [47530]
Crotalaria prostrata Willd.	[14712]

Crotalaria prostrata Willd. var. *prostrata* Willd. (4)	[19484] [71032] [19485] [47564]
Crotalaria ramosissima Roxb.	[19490]
Crotalaria retusa L. (7)	[45553] [22695] [71856] [43687] [40266] [13488] [5970]
Crotalaria verrucosa L. (3)	[13489] [19483] [55390]
Cullen corylifolium (L.)Medik. (6)	[19357] [34930] [50452] [34944] [50453] [46513]
Cyamopsis tetragonoloba (L.) Taub.	[16261] [19420]
Dalbergia candenatensis (Dennst.)Prain	[17722]
Dalbergia pinnata (Lour.) Prain	[14719]
Dalbergia sissoo DC.	[34687] [43608]
Delonix elata (L.) Gamble	[7820] [15580]
Dendrolobium triangulare Wallich ssp. *triangulare* (Retz.) Schindl.	[21414]
Derris scandens (Roxb.) Benth. (3)	[43526] [6101] [21582]
Derris trifoliata Lour.	[5962]
Desmodium gangeticum (L.)DC. (6)	[35323] [34943] [19341] [19346] [16264] [17348]
*Desmodium laxiflorum*DC. (4)	[22752] [3397] [34833] [47527]
Desmodium triflorum (L.)DC. (4)	[44052] [40380] [43632] [6225]
Dichrostachys cinerea (L.)Wight & Arn. ex Wight	[32082]
Entada gigas (L.) Fawc. & Rendle	[34282]
Erythrina suberosa Roxb.	[21575]
Flemingia strobilifera (L.) W.T.Aiton	[21572]
Hardwickia binata Roxb. (3)	[90760] [14728] [90761]
*Heylandia latebrosa*DC. (8)	[15294] [3400] [21507] [21506] [44298] [43746] [45252] [34146]
Indigofera cassioides DC.	[34828] [7224]

Indigofera cordifolia Roth (6)	[45074] [36318] [3396] [45554] [34587] [48796]
Indigofera glandulosa Wendl. var. *glandulosa* Wendl. (6)	[5967] [34831] [43689] [3395] [34591] [45070]
Indigofera hirsuta L. (4)	[45575] [45069] [45391] [19408]
Indigofera sp.	[15965]
Indigofera linifolia (L.f.) Retz. (6)	[21471] [21477] [21478] [43691] [34822] [21469]
Indigofera linnaei Ali (3)	[45072] [49733] [83160]
Indigofera tinctoria L. (3)	[21488] [19413] [17338]
Indigofera trifoliata L.	[5968]
Indigofera trita L. (3)	[34832] [34946] [44581]
Lablab purpureus (L.)Sweet (4)	[12379] [34958] [15570] [15612]
Lathyrus sativus L.	[21389] [34947]
Leucaena leucocephala (Lam.) de Wit	[34809]
Millettia peguensis Ali	[14708]
Mimosa hamata Wilid. (3)	[47152] [90704] [90705]
Mimosa himalayana Gamble	[71897] [34935]
Mimosa pudica L.	[90733] [92592]
Paracalyx scariosus (Roxb.) Ali	[12376]
Parkia biglandulosa Wight & Arnott	[25315] [54582]
Parkia timoriana (DC.) Merr.	[22773]
Phaseolus lunatus L.	[21534]
Pongamia pinnata (L.) Pierre (3)	[21559] [90695] [90728]
Pueraria montana (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep	[34939]
Pueraria tuberosa (Willd.) DC.	[36444]
Rhynchosia bracteata Benth. ex Baker	[48793] [55391]

Rhynchosia minima (L.)DC. (5)	[43637] [46392] [34149] [15271] [19416]
Rhynchosia rothii Aitch.	[48794]
Rivea hypocrateriformis Choisy	[90709]
Senna auriculata (L.) Roxb (3)	[34778] [71029] [19646]
Senna hirsuta (L.) H.S.Irwin & Barneby	[7796] [7797]
Senna occidentalis (Linn.)Link	[15750] [34662]
Senna siamea (Lam.) H.S.Irwin & Barneby	[34145]
Senna tora Roxb. (7)	[6187] [45067] [43630] [15933] [17094] [515] [48008]
Sesbania bispinosa (Jacq.) W.Wight	[71027] [34903]
Sesbania sesban (L.)Merr.	[3394]
Smithia bigemina Dalzell	[7223]
Smithia sensitiva Aiton (3)	[45208] [44056] [43842]
Spatholobus parviflorus (DC.) Kuntze	[39445]
Tamarindus indica L. (3)	[45066] [19430] [45392]
Taverniera cuneifolia (Roth)Ali	[21573]
Tephrosia purpurea (L.)Pers. (5)	[45085] [35182] [34945] [58905] [6108]
Tephrosia villosa (L.)Pers. (5)	[34937] [47835] [43603] [43690] [49665]
Teramnus labialis (L.f.) Spreng. (3)	[16078] [34771] [34938]
Uraria lagopus DC.	[43612]
Uraria picta (Jacq.) DC.	[43620]
Vigna aconitifolia (Jacq.) Marechal	[40395]
Vigna radiata (L.) R.Wilczek	[21537] [34927]
Vigna vexillata (L.) A.Rich.	[31883]
Total no of species 124 and specimen 307	

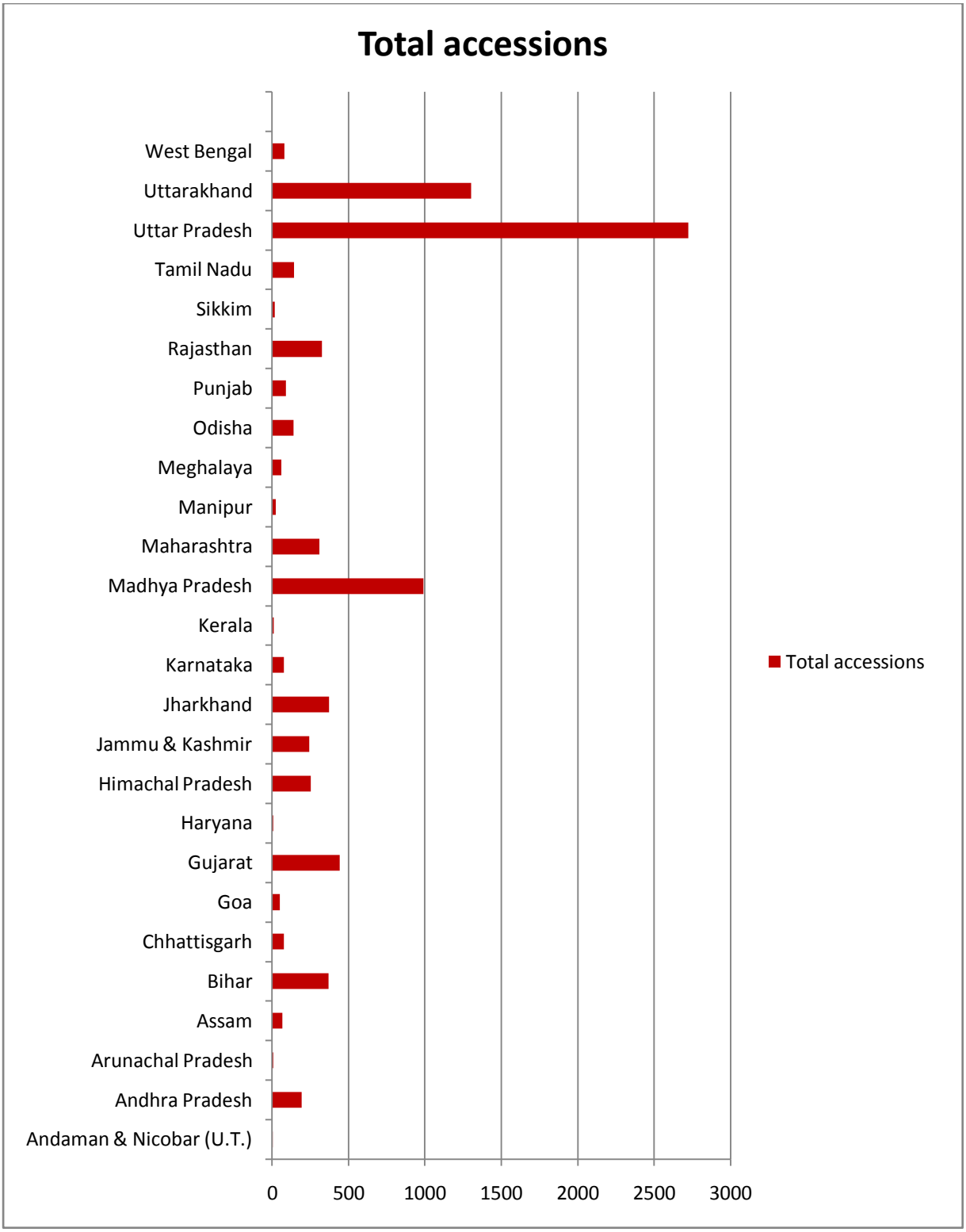


Fig 17: Showing state wise distribution of legumes on the basis of accessions of legumes with maximum collections from U.P. followed by Uttarakhand and Madhya Pradesh and minimum inManipur and no collection from few states in LWG herbarium

4.2 Sub option :Species list by district

HILWeb software option 'Geography' sub option allows occurrence of species from a county, state, district or a locality. A sample test run results for species represented from district Lucknow is given in the Table 10.

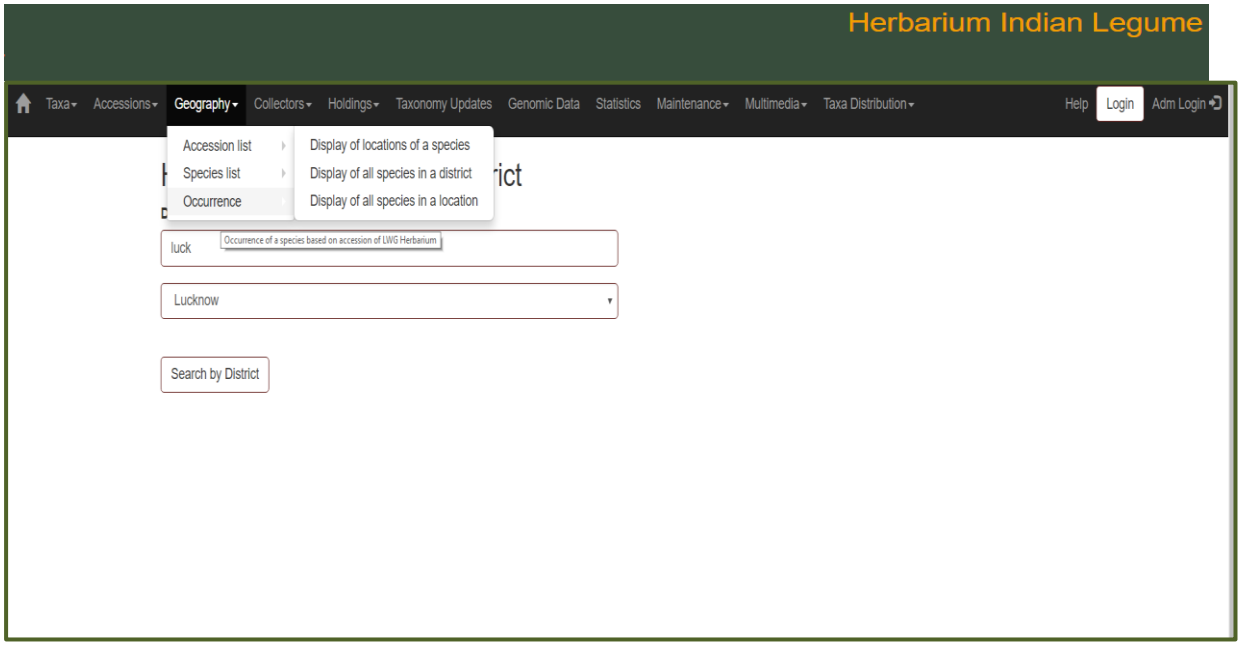


Fig 18:Screen shot showing sample test run showing selection of species for particular district- Lucknow in LWG herbarium

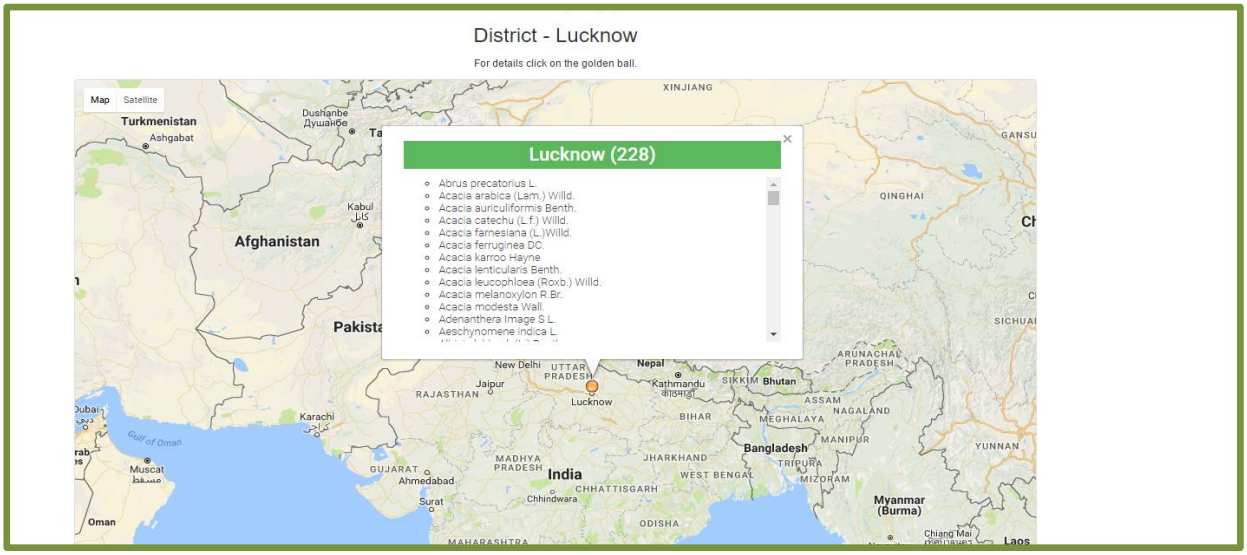


Fig. 19:Showing occurrence of 228 Species from Lucknow

Table 10: Screen shot showing occurrence of legumes from a particular district on the basis of herbarium specimens of LWG Herbarium

1. *Abrus precatorius* L.
2. *Acacia arabica* (Lam.) Willd.
3. *Acacia auriculiformis* Benth.
4. *Acacia catechu* (L.f.) Willd.
5. *Acacia farnesiana* (L.)Willd.
6. *Acacia ferruginea* DC.
7. *Acacia karroo* Hayne
8. *Acacia lenticularis* Benth.
9. *Acacia leucophloea* (Roxb.) Willd.
10. *Acacia melanoxylon* R.Br.
11. *Acacia modesta* Wall.
12. *Adenanthera sp.*
13. *Aeschynomene indica* L.
14. *Albizia lebbeck* (L.) Benth.
15. *Albizia lucidior* (Steud.) I.C.Nielsen
16. *Albizia odoratissima* (L.f.) Benth.
17. *Albizia procera* (Roxb.) Benth.
18. *Albizia saman* (Jacq.) Merr.
19. *Alhagi maurorum* Medik.
20. *Alysicarpus bupleurifolius* (L.)DC.
21. *Alysicarpus hamosus* Edgew.
22. *Alysicarpus heyneanus* Wight & Arnott
23. *Alysicarpus longifolius* (Spreng.) Wight & Arn.
24. *Alysicarpus moifer* (L.)DC.

25. *Alysicarpus rugosus* (Willd.) DC.
26. *Alysicarpus sp.*
27. *Alysicarpus vaginalis* (L.)DC.
28. *Arachis hypogaea* L.
29. *Arachniodes sp.*
30. *Astracantha longifolia* (Lam.) Podl.
31. *Astragalus hamosus* L.
32. *Astragalus racemosus* Pursh
33. *Astragalus subumbellatus* Klotzsch.
34. *Bauhinia acuminata* L.
35. *Bauhinia blakeana* Dunal
36. *Bauhinia campechianum* L.
37. *Bauhinia divaricata* L.
38. *Bauhinia hookeri* F.Muell.
39. *Bauhinia malabarica* Roxb.
40. *Bauhinia purpurea* L.
41. *Bauhinia racemosa* Lam.
42. *Bauhinia tomentosa* L.
43. *Bauhinia variegata* L.
44. *Brownea ariza* Benth.
45. *Brownea coccinea* Jacq.
46. *Brya ebenus* (L.)DC.
47. *Butea monosperma* (Lam.) Taub.
48. *Caesalpinia bonduc* (L.) Roxb.
49. *Caesalpinia coriaria* (Jacq.) Willd.

50. *Caesalpinia crista* L.
51. *Caesalpinia decapetala* (Roth) Alston
52. *Caesalpinia pannosa* Brandegee
53. *Caesalpinia pulcherrima* (L.)Sw.
54. *Caesalpinia sappan* L.
55. *Cajanus cajan* (L.) Millsp.
56. *Cajanus platycarpus* (Benth.) Maesen
57. *Cajanus scarabaeoides* (L.) Thouars
58. *Calliandra brevipes* Benth.
59. *Calliandra haematocephala* Hassk.
60. *Calliandra harrisii* (Lindl.) Benth.
61. *Calliandra houstoniana* (Mill.) Standl.
62. *Calliandra tweedii* Benth.
63. *Canavalia ensiformis* (L.)DC.
64. *Cassia artemisioides* DC.
65. *Cassia fistula* L.
66. *Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
67. *Cassia multijuga* (Rich.)Irwin & Barneby
68. *Cassia roxburghii*DC.
69. *Centrosema pubescens* Benth.
70. *Chamaecrista absus* (L.) H.S.Irwin & Barneby.
71. *Chamaecrista pumila (*Lam.) K.Larsen
72. *Cicer arietinum* L.
73. *Clitoria ternatea* L.
74. *Codariocalyx motorius* (Houtt.) H.Ohashi

75. *Collaea speciosa* (Loisel.) DC.
76. *Corola coronata* L.
77. *Crotalaria chinensis* L.
78. *Crotalaria juncea* L.
79. *Crotalaria laburnifolia* L.
80. *Crotalaria medicaginea* Lam.
81. *Crotalaria mysorensis* Roth
82. *Crotalaria pallida* Aiton
83. *Crotalaria prostrata* Willd.
84. *Crotalaria retusa* L.
85. *Crotalaria spectabilis* Roth
86. *Crotalaria trichotoma* Bojer
87. *Crotalaria verrucosa* L.
88. *Cullen corylifolium* (L.)Medik.
89. *Cyamopsis psoraloides* DC.
90. *Dalbergia dalbeergiods* Guill. & Perr.
91. *Dalbergia lanceolaria* L.f.
92. *Dalbergia sissoo*DC.
93. *Daviesia wyattiana* Bailey
94. *Delonix regia* (Hook.) Raf.
95. *Dendrolobium triangulare* Wallich ssp. *triangulare* (Retz.) Schindl.
96. *Derris scandens* (Roxb.) Benth.
97. *Derris trifoliata* Lour.
98. *Desmanthus virgatus* (L.)Willd.
99. *Desmodium gangeticum* (L.)DC.

100. *Desmodium spirale* Griseb.
101. *Desmodium triflorum* (L.)DC.
102. *Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
103. *Dichrostachys cinerea* (L.)Wight & Arn. ex Wight
104. *Dumasia villosa*DC.
105. *Erythrina blakei* R.Parker
106. *Erythrina vespertilio* Benth.
107. *Galega officinalis* L.
108. *Gastrolobium ilicifolium* Meissn.
109. *Gleditsia macracantha* Desf.
110. *Glycine javanica* L.
111. *Glycyrrhiza glabra* L.
112. *Haematoxylum campechianum* L.
113. *Heylandia latebrosa*DC.
114. *Hippocrepis emerus* (L.) Lassen
115. *Humboldtiadecurrens* Oliver
116. *Indigofera colutea* (Burm. f.) Merr.
117. *Indigofera cordifolia* Roth
118. *Indigofera dosua* D.Don
119. *Indigofera glabra* L.
120. *Indigofera heterantha* Brandis
121. *Indigofera linifolia* (L.f.) Retz.
122. *Indigofera linnaei* Ali
123. *Indigofera tinctoria* L.
124. *Indigofera trifoliata* L.

125. *Indigofera trita* L.
126. *Indigofera zollingeriana* (Blume) Miq.
127. *Indopiptadenia oudhensis* (Brandis) Brenan
128. *Lablab purpureus* (L.)Sweet
129. *Lathyrus aphaca* L.
130. *Lathyrus laxiflorus* (Desf.) Kuntze
131. *Lathyrus sativus* L.
132. *Lathyrus tuberosus* L.
133. *Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
134. *Leucaena leucocephala* (Lam.) de Wit
135. *Lotus corniculatus* L.
136. *Lupinus davidsonii* Davidson
137. *Lupinus luteolus* Kellogg
138. *Lupinus micranthus* Guss.
139. *Lupinus parvifolius* Gardner
140. *Lupinus paynei* Davidson
141. *Machaerium opacum* Vogel
142. *Medicago lupulina* L.
143. *Medicago polymorpha* L.
144. *Medicago sativa L.*
145. *Melilotus albus* Medik.
146. *Melilotus indicus* (L.) All.
147. *Melilotus officinalis* (L.)Pall.
148. *Melilotus officinalis* (L.)Pall. ssp. a*lba* (Medik.) H.Ohashi & Tateishi
149. *Melilotus officinalis* (L.)Pall. var. *alba* (Medik.) H.Ohashi & Tateishi

150. *Melilotus officinalis* Medik. ssp. *alba* (Medik.) H.Ohashi & Tateishi
151. *Millettia extensa* (Benth.) Baker
152. *Millettia peguensis* Ali
153. *Millettia tetraptera* Kurz
154. *Mimosa asperata* L.
155. *Mimosa polycarpa* Burkart
156. *Mimosa polycarpa* Pirotta var. *spegazzinii* Burkart
157. *Mimosa pudica* L.
158. *Mimosa rubicaulis* Lam.
159. *Mucuna pruriens* (L.)DC.
160. *Neptunia oleracea* Lour.
161. *Pachyrhizus erosus* (L.)Urb.
162. *Parkia biglandulosa* Wight & Arnott
163. *Parkinsonia aculeata* L.
164. *Peltophorum pterocarpum* (DC.) K.Heyne
165. *Phyllodium pulchellum* (L.)Desv.
166. *Pisum sativum* L.
167. *Pithecellobium dulce* (Roxb.) Benth.
168. *Pongamia pinnata* (L.) Pierre
169. *Prosopis cineraria* (L.)Druce
170. *Prosopis juliflora* (Sw.) DC.
171. *Pterocarpus marsupium* Roxb.
172. *Pueraria tuberosa* (Willd.) DC.
173. *Rhynchosia aurea* (Willd.) DC.
174. *Rhynchosia minima* (L.)DC.

175. *Rhynchosia rothii* Aitch.

176. *Saraca declinata* (Blume) Miq.

177. *Saraca indica* L.

178. Saraca sp.

179. *Securigera varia* (L.) Lassen

180. *Senna alata* (L.) Roxb

181. *Senna appendiculata* Vell.

182. *Senna auriculata* (L.) Roxb

183. *Senna bicapsularis* Roxb.

184. *Senna cana* Nees & Mart.

185. *Senna didymobotrya* (Fresen.) H.S.Irwin & Barneby

186. *Senna floribunda* (Cav.) H.S.Irwin & Barneby

187. *Senna multijuga* (Rich.)Irwin & Barneby

188. *Senna obtusifolia* (L.) H.S.Irwin & Barneby

189. *Senna occidentalis* (L.) Link

190. *Senna occidentalis* (Linn.)Link

191. *Senna pallida* L.

192. *Senna podocarpa* (Guill. & Perr.) Lock

193. *Senna siamea* (Lam.) H.S.Irwin & Barneby

194. *Senna sophera* Roxb.

195. *Senna sulfurea (*Collad.) H.S.Irwin & Barneby

196. *Senna surattensis* (Burm.f.) H.S.Irwin & Barneby

197. *Senna tora* Roxb.

198. *Sesbania bispinosa* (Jacq.) W.Wight

199. *Sesbania grandiflora* (L.)Pers.

200. *Sesbania hypogaea* L.
201. *Sesbania javanica* (Blume) Miq.
202. *Sesbania sesban* (L.)Merr.
203. *Sesbania sesban* (L.)Merr.
204. *Shuteria hirsuta* Baker
205. *Smithia sensitiva* Aiton
206. *Sophora secundiflora* (Ortega) DC.
207. *Sophora tomentosa* L.
208. *Swainsona formosa* (G.Don) J.Thompson
209. *Tamarindus indica* L.
210. *Tephrosia purpurea* (L.)Pers.
211. *Tephrosia subtriflora* Baker
212. *Tephrosia villosa* (L.)Pers.
213. *Teramnus labialis* (L.f.) Spreng.
214. *Trifolium alexandrinum* L.
215. *Trifolium pratense* L.
216. *Trigonella foenum-graecum* L.
217. *Uraria picta* (Jacq.) DC.
218. *Veronica coccinea* Jacq.
219. *Vicia faba* L.
220. *Vicia hirsuta* (L.) Gray
221. *Vicia sativa* L.
222. *Vicia sphaericus* Retz.
223. *Vigna aconitifolia* (Jacq.) Marechal
224. *Vigna radiata* (L.) R.Wilczek

225. *Vigna vexillata* (L.) A.Rich.

226. *Zapoteca formosa* (Kunth) H.M.Hern.

227. *Zornia diphylla* (L.)Pers.

228. *Zornia gibbosa* Span.

4.3. Sub option : Occurrence

HILWeb software option 'Taxa distribution' sub option 'species' allows occurrence of a particular legumes species in India. A sample test run results for*Bauhinia* represented from India.

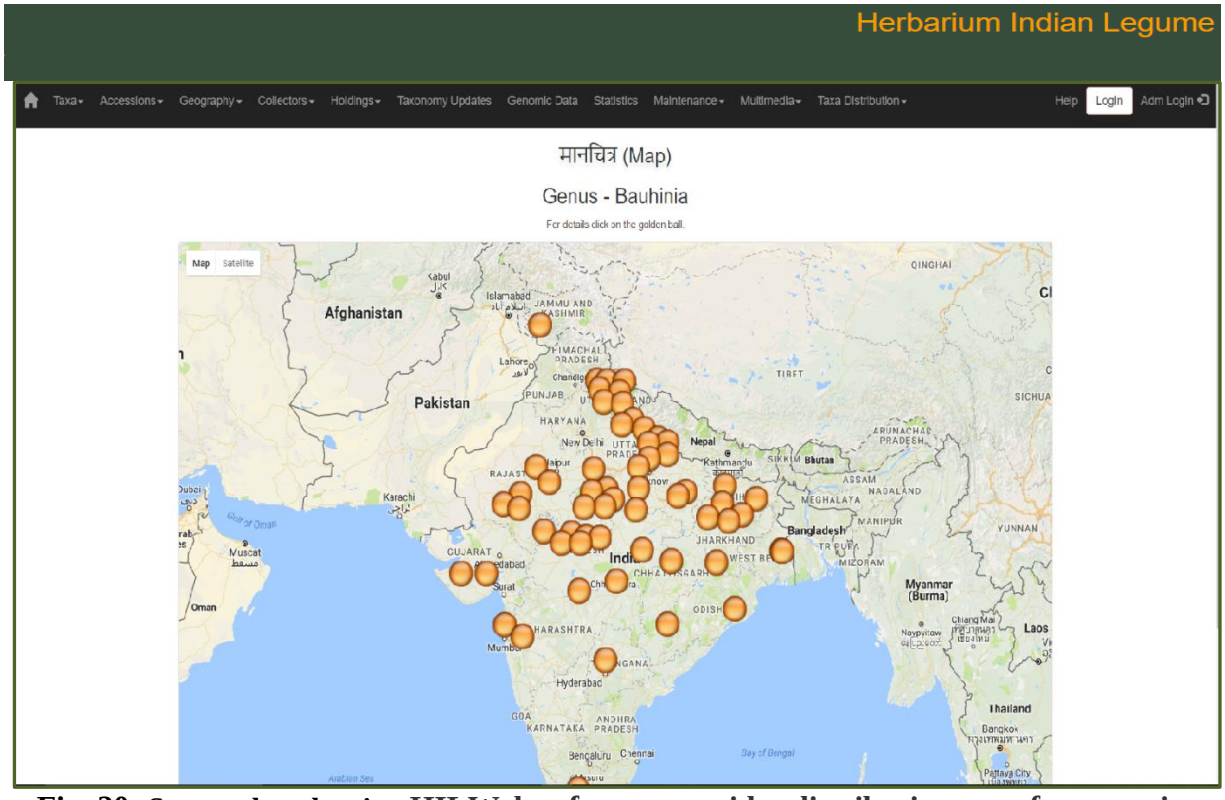


Fig. 20: Screen shot showing HILWeb software provides distribution map for a species

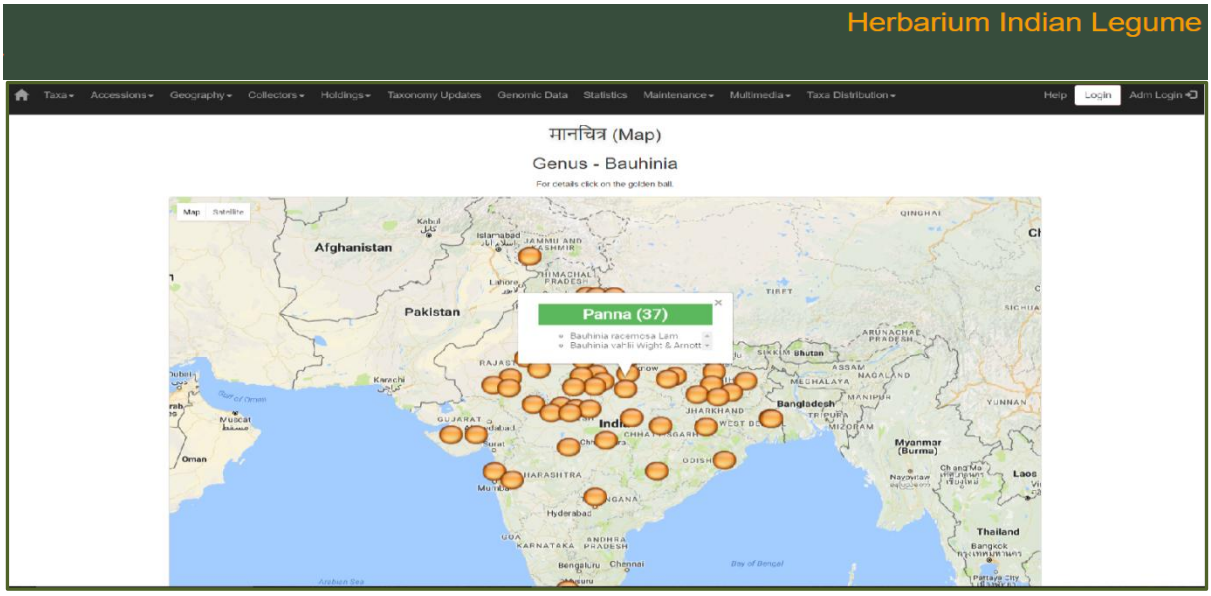


Fig. 21: Screen shot showing HILWeb software provides distribution map and user can find total species in a location

5 Option Collectors:

5.1. Sub option :List of specimens of a collector

HILWeb software option 'Collector' sub option ' List of specimens of a collector ' allows list of individual collector for a given period . A sample test run results forS.L.Kapoor represented from India.

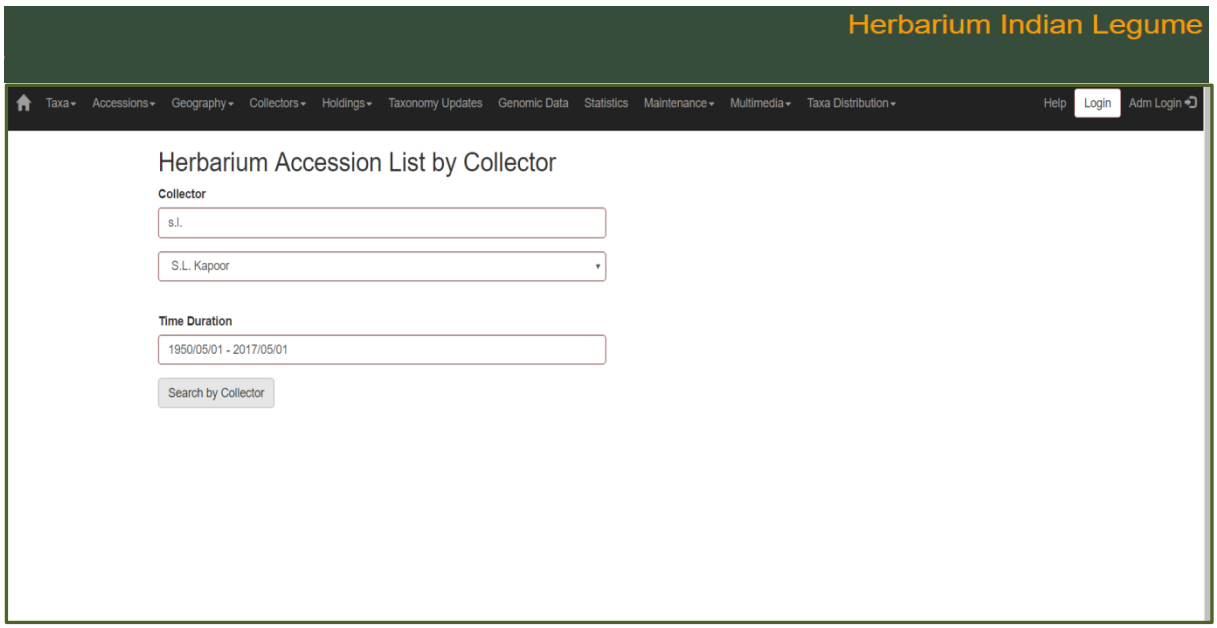


Fig 22: Screen shot showingHILWeb software provides total specimens collected by a collector-Dr. S.L. Kapoor

Table 11: Showing trend of collections made by an individual plant collectors in LWG Herbarium

S. No.	Accession No.	Species	Cabinet No.	Status	View
1	7327	*Abrus precatorius* L.		Ok	
2	40517	*Abrus precatorius* L.		Ok	
3	19387	*Abrus precatorius* L.		Ok	
4	11836	*Acacia jacquemontii* Benth.	40	Ok	
5	11883	*Acacia jacquemontii* Benth.	40	Ok	
6	11884	*Acacia jacquemontii* Benth.	40	Ok	
7	47146	*Acacia karroo* Hayne	40	Ok	
8	11881	*Acacia leucophloea* (Roxb.) Willd.	40	Ok	
9	11885	*Acacia pennata* (L.)Willd.	40	Ok	
10	18600	*Acacia senegal* (L.)Willd.	40	Ok	
11	81960	*Acacia sinuata* (Lour.)Merril	40	Ok	
12	81962	*Acacia sinuata* (Lour.)Merril	40	Ok	
13	81961	*Acacia sinuata* (Lour.)Merril	40	Ok	
14	12751	*Alysicarpus hamosus* Edgew.		Ok	
15	7900	*Alysicarpus longifolius* (Spreng.) Wight & Arn.	28	Ok	
16	12752	*Alysicarpus moifer* (L.)DC.	28	Ok	
17	13348	*Alysicarpus moifer* (L.)DC.	28	Ok	
18	11182	*Alysicarpus moifer* (L.)DC.	28	Ok	

S. No.	Accession No.	Species	Cabinet No.	Status	View
19	12753	*Alysicarpus vaginalis* (L.)DC.	28	Ok	
20	12750	*Alysicarpus vaginalis* (L.)DC.	28	Ok	
21	12754	*Alysicarpus vaginalis* (L.)DC.	28	Ok	
22	14768	*Alysicarpus vaginalis* (L.)DC.	28	Ok	
23	11989	*Bauhiniamalabarica* Roxb.	38	Ok	
24	11849	*Bauhiniaracemosa* Lam.	38	Ok	
25	44304	*Bauhiniaracemosa* Lam.	38	Ok	
26	19559	*Butea monosperma* (Lam.) Taub.	28	Ok	
27	16924	*Butea monosperma* (Lam.) Taub.	28	Ok	
28	46909	*Caesalpiniacrista* L.	38	Ok	
29	48001	*Caesalpiniaviolacea* (Mill.) Standl.	39	Ok	
30	31225	*Cajanus cajan* (L.) Millsp.	29	Ok	
31	16843	*Cajanus scarabaeoides* (L.) Thouars	29	Ok	
32	19437	*Cassiafistula* L.	39	Ok	
33	19397	*Chamaecrista* pumila (Lam.) K.Larsen	38	Ok	
34	11946	*Chamaecristapumila* (Lam.) K.Larsen	38	Ok	
35	11947	*Chamaecristapumila* (Lam.) K.Larsen	38	Ok	
36	49982	*Chamaecristapumila* (Lam.) K.Larsen	39	Ok	
37	11912	*Clitoria ternatea* L.	29	Ok	

S. No.	Accession No.	Species	Cabinet No.	Status	View
38	11913	*Clitoria ternatea* L.	29	Ok	
39	11911	*Clitoria ternatea* L.	29	Ok	
40	34683	*Clitoria ternatea* L.	30	Ok	
41	11892	*Crotalaria hirsuta* Wilid.	29	Ok	
42	7475	*Crotalaria hirsuta* Wilid.	29	Ok	
43	11893	*Crotalaria juncea* L.	29	Ok	
44	8251	*Crotalaria juncea* L.	30	Ok	
45	22709	*Crotalaria laburnifolia* L.	30	Ok	
46	23463	*Crotalaria medicaginea* Lam.	30	Ok	
47	19576	*Crotalaria mysorensis* Roth	29	Ok	
48	32078	*Crotalaria pallida* Aiton	30	Ok	
49	24944	*Crotalaria pallida* Aiton	30	Ok	
50	24943	*Crotalaria trichotoma* Bojer	30	Ok	
51	24942	*Crotalaria trichotoma* Bojer	30	Ok	
52	24702	*Crotalaria trichotoma* Bojer	30	Ok	
53	24941	*Crotalaria trichotoma* Bojer	30	Ok	
54	24940	*Crotalaria trichotoma* Bojer	30	Ok	
55	46906	*Crotalaria verrucosa* L.	30	Ok	
56	47143	*Crotalaria verrucosa* L.	30	Ok	

S. No.	Accession No.	Species	Cabinet No.	Status	View
57	18053	*Crotalaria verrucosa* L.	30	Ok	
58	46252	*Crotalaria verrucosa* L.	30	Ok	
59	55847	*Dalbergia pinnata* (Lour.) Prain	30	Ok	
60	7478	*Desmodium laxiflorum*DC.	31	Ok	
61	8179	*Desmodium triflorum* (L.)DC.	31	Ok	
62	12756	*Desmodium triflorum* (L.)DC.	31	Ok	
63	43632	*Desmodium triflorum* (L.)DC.	31	Ok	
64	47048	*Desmodium triflorum* (L.)DC.	31	Ok	
65	44185	*Desmodium triflorum* (L.)DC.	31	Ok	
66	10979	*Heylandia latebrosa*DC.	32	Ok	
67	10980	*Heylandia latebrosa* DC.	32	Ok	
68	10990	*Indigofera cordifolia* Roth	32	Ok	
69	14767	*Indigofera cordifolia* Roth	32	Ok	
70	13567	*Indigofera glandulosa* Wendl. var. *glandulosa* Wendl.	32	Ok	
71	11002	*Indigofera hirsuta* L.	32	Ok	
72	11003	*Indigofera hirsuta* L.	32	Ok	
73	36296	*Indigofera hirsuta* L.	32	Ok	
74	14635	*Indigofera linifolia* (L.f.) Retz.	32	Ok	
75	12748	*Indigofera linifolia* (L.f.) Retz.	32	Ok	

S. No.	Accession No.	Species	Cabinet No.	Status	View
76	8181	*Indigofera linifolia* (L.f.) Retz.	32	Ok	
77	23027	*Indigofera linifolia* (L.f.) Retz.	32	Ok	
78	16848	*Indigofera linifolia* (L.f.) Retz.	32	Ok	
79	8188	*Indigofera linnaei* Ali	32	Ok	
80	10999	*Indigofera linnaei* Ali	32	Ok	
81	8204	*Indigofera linnaei* Ali	32	Ok	
82	12749	*Indigofera linnaei* Ali	32	Ok	
83	10998	*Indigofera linnaei* Ali	32	Ok	
84	16477	*Indigofera tinctoria* L.	32	Ok	
85	8250	*Lathyrus aphaca* L.	33	Ok	
86	47149	*Leucaena leucocephala* (Lam.) de Wit	40	Ok	
87	8213	*Medicago polymorpha* L.	34	Ok	
88	12718	*Medicago polymorpha* L.	34	Ok	
89	8206	*Melilotus indicus* (L.) All.	33	Ok	
90	8190	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi	33	Ok	
91	7484	*Mimosa hamata* Wilid.	41	Ok	
92	11876	*Mimosa hamata* Wilid.	41	Ok	
93	11852	*Mimosa hamata* Wilid.	41	Ok	
94	82381	*Prosopis juliflora* (Sw.) DC.	41	Ok	

S. No.	Accession No.	Species	Cabinet No.	Status	View
95	19637	*Pterocarpus marsupium* Roxb.	35	Ok	
96	14899	*Rhynchosia minima* (L.)DC.	35	Ok	
97	18643	*Rhynchosia minima* (L.)DC.	35	Ok	
98	43637	*Rhynchosia minima* (L.)DC.	35	Ok	
99	10972	*Rhynchosia minima* (L.)DC.	35	Ok	
100	12005	*Senna occidentalis* (Linn.)Link	38	Ok	
101	19577	*Senna sophera* Roxb.	39	Ok	
102	8253	*Senna tora* (L.) Roxb.	39	Ok	
103	11944	*Senna tora* Roxb.	39	Ok	
104	11245	*Senna tora* Roxb.	39	Ok	
105	11945	*Senna tora* Roxb.	39	Ok	
106	11200	*Senna tora* Roxb.	39	Ok	
107	7921	*Sesbania bispinosa* (Jacq.) W.Wight	34	Ok	
108	11875	*Sesbania bispinosa* (Jacq.) W.Wight	34	Ok	
109	8249	*Sesbania sesban* (L.)Merr.	34	Ok	
110	44842	*Shuteriahirsuta*Baker	35	Ok	
111	44839	*Shuteria hirsuta* Baker	35	Ok	
112	11871	*Smithiasensitiva* Aiton	35	Ok	
113	11919	*Taverniera cuneifolia* (Roth)Ali	35	Ok	

S. No.	Accession No.	Species	Cabinet No.	Status	View
114	7924	*Tephrosia parviflora* Wight ex Wall.	36	Ok	
115	11907	*Tephrosia purpurea* (L.)Pers.	36	Ok	
116	11910	*Tephrosia purpurea* (L.)Pers.	36	Ok	
117	12755	*Tephrosia purpurea* (L.)Pers.	36	Ok	
118	8252	*Tephrosia purpurea* (L.)Pers.	36	Ok	
119	11903	*Tephrosia tenuis* Wallich	36	Ok	
120	66221	*Tephrosia villosa* (L.)Pers.	36	Ok	
121	47835	*Tephrosia villosa* (L.)Pers.	36	Ok	
122	11243	*Teramnus labialis* (L.f.) Spreng.	37	Ok	
123	8197	*Vicia sativa* L.	37	Ok	
124	13356	*Vicia sativa* L.	37	Ok	
125	21536	*Vigna aconitifolia* (Jacq.) Marechal	34	Ok	
126	14132	*Vigna mungo* (L.) Hepper	34	Ok	
127	7482	*Vigna trilobata* (L.) Verdc.	34	Ok	
128	11859	*Zornia diphylla* (L.)Pers.	37	Ok	

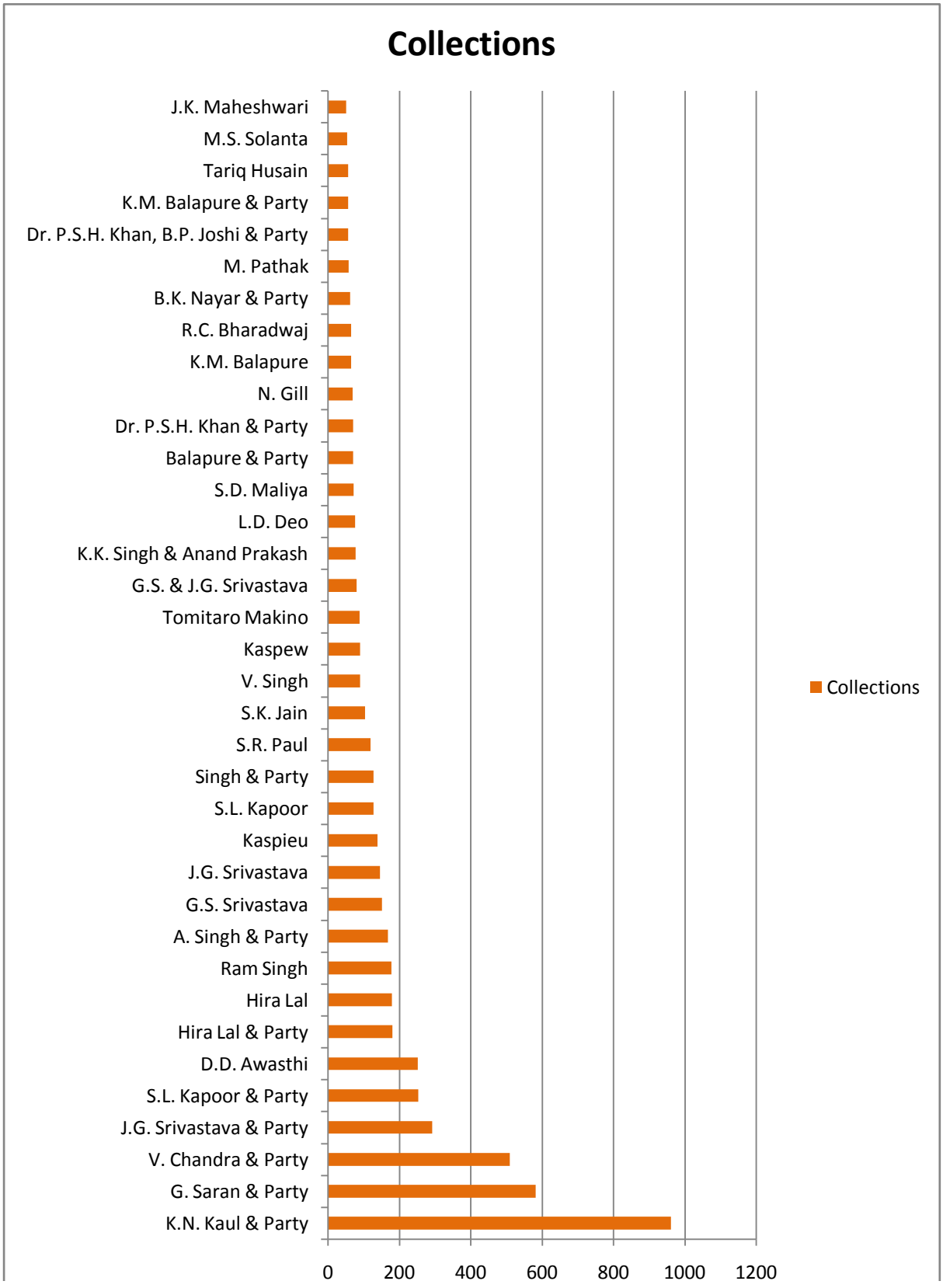


Fig 23: Showing the no. of legumes collections by each collector in LWG herbarium

6.Option -5: Holding

6.1 Sub option:Sub families

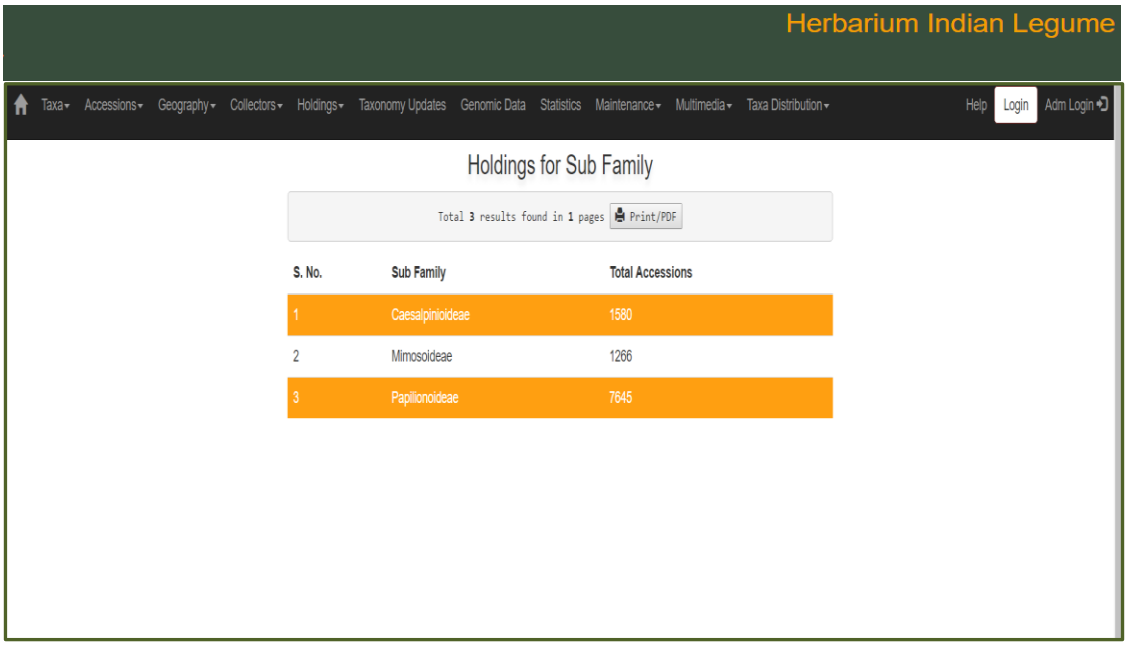


Fig. 24: Screen shot showing retrieval of information holding sub family wise holdings of leguminoseae in LWG herbarium

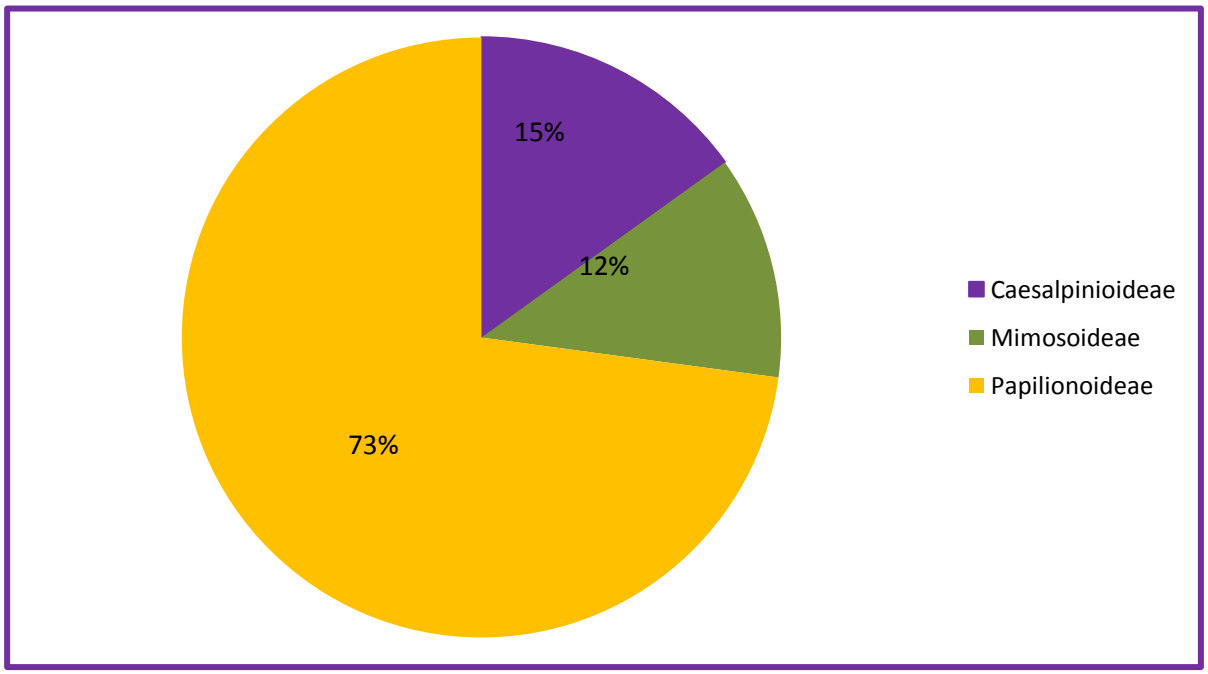


Fig 25: Pie chat showing comparative representation of specimens of three sub families of leguminosae

7. Option 65: Taxonomic updates

HILWeb has a unique feature of generating information on taxonomic upgradation. Name changes is a continues feature.

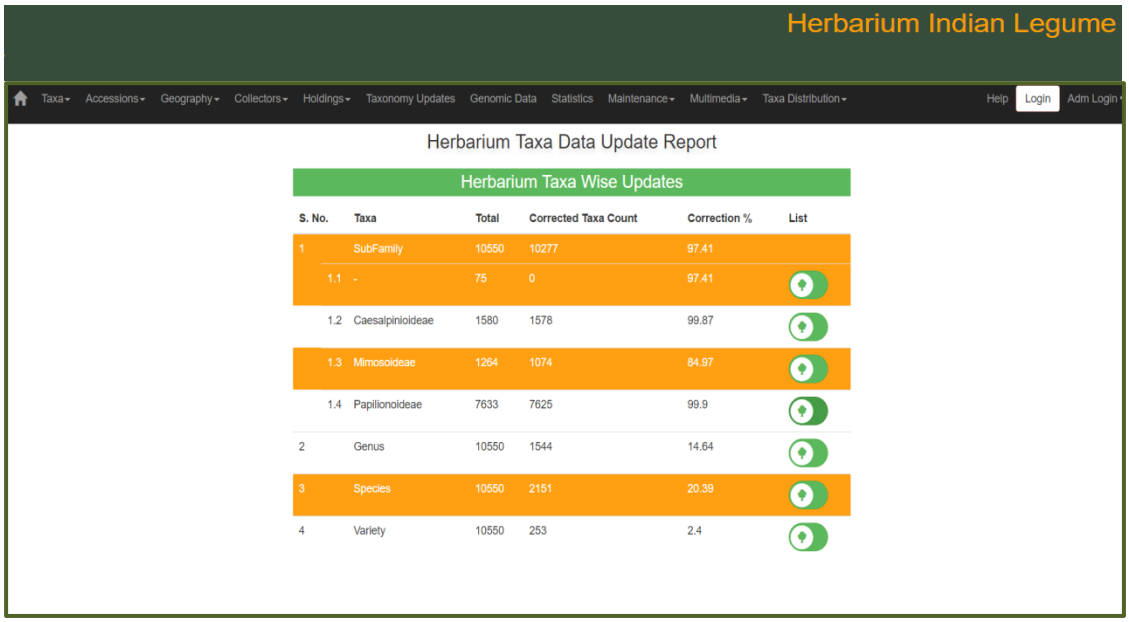


Fig 26: Screen shot showing generating information on taxonomic upgradtion

Analysis reveals that out of 10483 accessions data were updated 99.8% in Caesalpinioideae 84.97% in Mimosoideae, 99.9% in Papilionoideae and in genus 14.655, species 20.45% and variety 2.4 %.

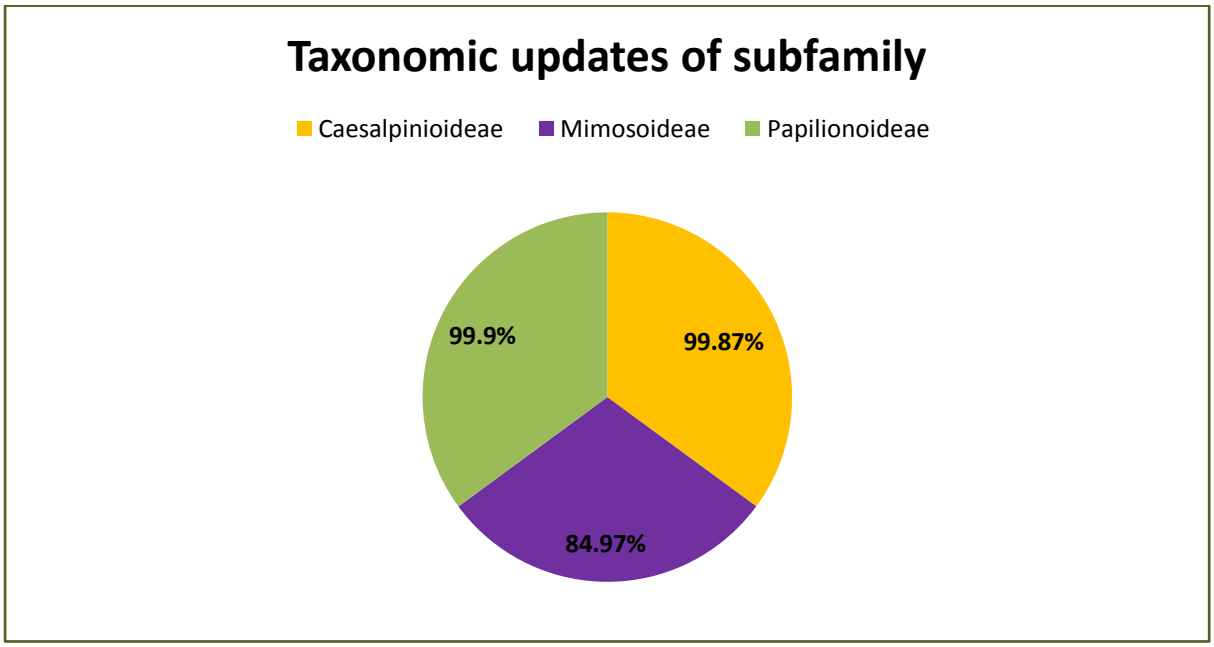


Fig 27: Showing the percentage of nomenclatural updating of collections of three subfamilies of leguminosae in LWG herbarium

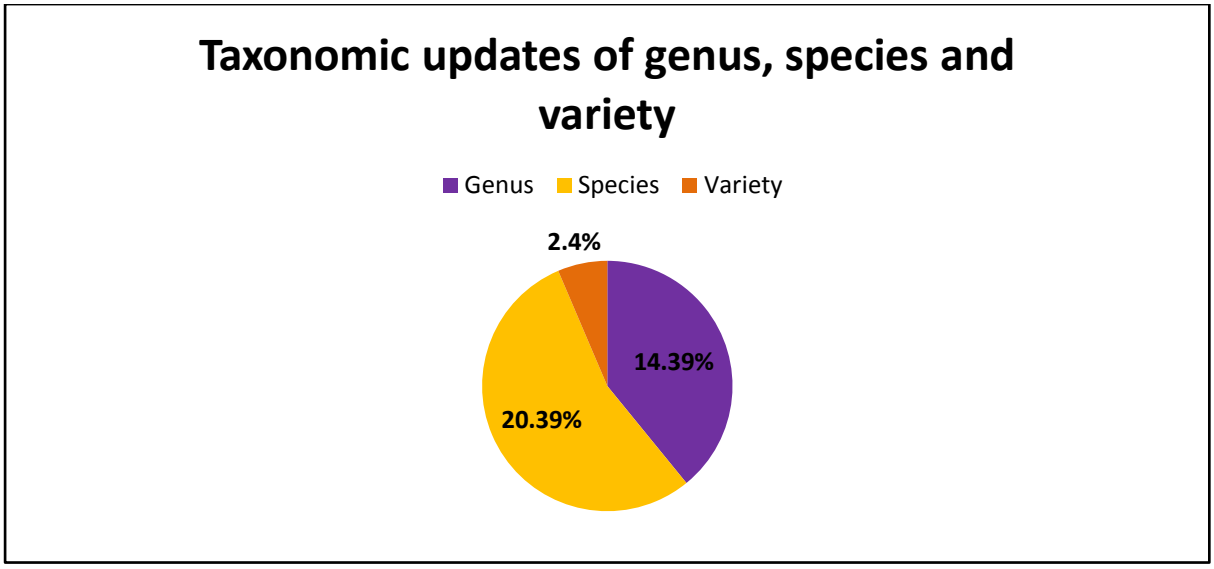


Fig 28: Showing nomenclatural updating of collections of Genus, species and variety in LWG herbarium

Table 12: Taxonomic upgrades of herbarium specimens in LWG herbarium

S.No.	Accession No.	Name existing in Label	Recent Name
1	332	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2	333	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
3	334	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
4	342	*Crotalaria striata* DC (seeds)	*Crotalaria pallida* Aiton
5	343	*Crotalaria usaramoensis* (Seeds) E.G. Bala	*Crotalaria trichotoma* Bojer
6	346	*Crotalaria nubica* Benth.	*Crotalaria sphaerocarpa* DC.
7	354	*Crotalaria australis* (Baker f.) Verd.	*Crotalaria laburnifolia* (Baker f.) Verd. ssp. *australis* (Baker f.) Polhill
8	355	*Crotalaria australis* Bak. F.	*Crotalaria laburnifolia* (Baker f.) Verd. ssp. *australis* (Baker f.) Polhill
9	364	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
10	365	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
11	366	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
12	367	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
13	372	*Melilotus alba* Medik.	*Melilotus officinalis* Medik. ssp.

			alba(Medik.) H.Ohashi & Tateishi
14	373	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
15	374	*Melilotus alba*	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
16	382	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
17	383	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
18	384	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
19	385	*Indigofera prostra* Willd.	*Indigofera trifoliata* L.
20	386	*Indigofera prostrata* Willd.	*Indigofera trifoliata* L.
21	388	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
22	389	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
23	395	*Millettia macrophylla* Kurz	*Millettia extensa* (Benth.) Baker
24	397	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
25	398	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
26	411	*Desmodium floribundum* (D.Don) G.Don	*Desmodium* multiflorum DC.
27	421	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.)H.Ohashi
28	422	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
29	432	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
30	433	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
31	435	*Cicer arientinium*	*Cicer arietinum* L.
32	436	*Cicer arientinium* Linn.	*Cicer arietinum* L.
33	438	*Vicia pallida* Turcz.	*Vicia amurensis* Oett.
34	442	*Lens esculenta* Moench	*Lens culinaris* Medik.
35	447	*Lathyrus sativa*	*Lathyrus sativus* L.
36	451	*Pisum arvense* L.	*Pisum sativum* L.
37	456	*Shuteria vestita* Wight & Arn.	*Shuteria involucrata* (Wall.) Wight & Arn.

38	461	*Phaseolus trilobus*	*Vigna trilobata* (L.) Verdc.
39	462	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
40	463	*Phaseolus radiatus* Linn.	Vigna radiata (L.) R.Wilczek
41	467	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
42	468	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
43	469	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
44	470	*Atylosia platicarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
45	471	*Atylosia crassa* Prain	*Cajanus crassus* (King) Maesen
46	479	*Dalbergia sissoo* (Shichan) DC.	*Dalbergia sissoo* DC.
47	484	*Dalbergia* hircina Benth.	*Dalbergia sericea* G.Don.
48	485	*Dalbergia hircina* Bth.	*Dalbergia sericea* G.Don.
49	487	*Pongamia glabra* Vent.	*Pongamiapinnata* (L.) Pierre
50	489	*Peltophorum ferrugineum* (Decne.) Benth.	*Peltophorumpterocarpum* (DC.) K.Heyne
51	490	*Caesalpinia bonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
52	491	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
53	494	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
54	506	*Cassianodosa* Ham.	*Cassiajavanica* Roxb.
55	507	*Cassiarenigera* Wall.	*Cassiaroxburghii* DC.
56	508	*Cassiafloribanda* Cav.	*Senna floribunda* (cav.) (Cav.) H.S.Irwin & Barneby
57	521	*Cassia glauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
58	525	*Cassia wallichiana* DC.	*Chamaecrista*leschenaultiana (DC.) Degener
59	528	*Adenanthera pavonia*	*Adenanthera pavonina* L.
60	533	*Leucaena glauca*	*Leucaena leucocephala* (Lam.) de Wit
61	534	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
62	535	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
63	536	*Acacia arabia* Willd.	*Acaciaotica* (L.)Delile

64	537	*Acacia leucophoea* R.Br.	*Acacialeucophloea* (Roxb.) Willd.
65	544	*Albizia lebbek*	*Albizia lebbeck* (L.) Benth.
66	545	*Albizia lebbek* Benth.	*Albizia lebbeck* (L.) Benth.
67	547	*Albizia mollis* Boiv.	*Albizia julibrissin* Durazz. var. *mollis* (Wall.) Benth.
68	548	*Albizia lucida* Benth.	*Albizia lucidior* (Steud.) I.C.Nielsen
69	1815	*Desmodium floribundum* DC.	*Desmodium multiflorum* DC.
70	1825	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
71	1836	*Desmodium floribundum* (G.Don)DC.	*Desmodium multiflorum* DC.
72	1837	*Desmodium floribundum* (G.Don)DC.	*Desmodium multiflorum* DC.
73	1846	*Moghania fruticulosa* (Benth.) Mukerjee	*Flemingia strobilifera* (L.) W.T.Aiton
74	1858	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
75	1877	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
76	1931	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
77	1945	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* (Retz.) Schindl.
78	1956	*Cantharospermumscarabaeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
79	1973	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
80	2039	*Albizia mollis* (Wall.) Boivin	*Albizia julibrissin* Durazz. var. *mollis* (Wall.) Benth.
81	2113	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
82	2126	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
83	2127	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
84	2182	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
85	2227	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
86	2228	*Cassia* laevigata Willd.	*Senna* septemtrionalis (Viv.) H.S.Irwin &Barneby
87	2229	*Albizia* stipulata Boivin	*Albizia* chinensis (Osbeck) Merr.
88	2418	*Cicer arientinium*	*Cicer arietinum* L.

89	2421	*Cicer arientinium*	*Cicer arietinum* L.
90	2422	*Cicer arientinium*	*Cicer arietinum* L.
91	2423	*Cicer arientinium*	*Cicer arietinum* L.
92	2424	*Cicer arientinium*	*Cicer arietinum* L.
93	2425	*Cicer arientinium*	*Cicer arietinum* L.
94	2426	*Cicer arientinium*	*Cicer arietinum* L.
95	2427	*Cicer arientinium*	*Cicer arietinum* L.
96	2428	*Cicer arientinium*	*Cicer arietinum* L.
97	2429	*Cicer arientinium*	*Cicer arietinum* L.
98	2430	*Cicer arientinium*	*Cicer arietinum* L.
99	2431	*Cicer arientinium*	*Cicer arietinum* L.
100	2432	*Cicer arientinium*	*Cicer arietinum* L.
101	2433	*Cicer arientinium*	*Cicer arietinum* L.
102	2434	*Cicer arientinium*	*Cicer arietinum* L.
103	2435	*Cicer arientinium*	*Cicer arietinum* L.
104	2436	*Cicer arientinium*	*Cicer arietinum* L.
105	2437	*Cicer arientinium*	*Cicer arietinum* L.
106	2438	*Cicer arientinium*	*Cicer arietinum* L.
107	2439	*Cicer arientinium*	*Cicer arietinum* L.
108	2440	*Cicer arientinium*	*Cicer arietinum* L.
109	2441	*Cicer arientinium*	*Cicer arietinum* L.
110	2442	*Cicer arientinium*	*Cicer arietinum* L.
111	2443	*Cicer arientinium*	*Cicer arietinum* L.
112	2444	*Cicer arientinium*	*Cicer arietinum* L.
113	2445	*Cicer arientinium* L.	*Cicer arietinum* L.
114	2446	*Cicer arientinium* L.	*Cicer arietinum* L.
115	2447	*Cicer arientinium* L.	*Cicer arietinum* L.
116	2448	*Cicer arientinium* L.	*Cicer arietinum* L.

117	2449	*Cicer arientinium* L.	*Cicer arietinum* L.
118	2450	*Cicer arientinium* L.	*Cicer arietinum* L.
119	2451	*Cicer arientinium* L.	*Cicer arietinum* L.
120	2452	*Cicer arientinium* L.	*Cicer arietinum* L.
121	2453	*Cicer arientinium* L.	*Cicer arietinum* L.
122	2454	*Cicer arientinium* L.	*Cicer arietinum* L.
123	2455	*Cicer arientinium* L.	*Cicer arietinum* L.
124	2456	*Cicer arientinium* L.	*Cicer arietinum* L.
125	2457	*Cicer arientinium* L.	*Cicer arietinum* L.
126	2458	*Cicer arientinium* L.	*Cicer arietinum* L.
127	2459	*Cicer arientinium*	*Cicer arietinum* L.
128	2460	*Cicer arientinium*	*Cicer arietinum* L.
129	2461	*Cicer arientinium*	*Cicer arietinum* L.
130	2462	*Cicer arientinium*	*Cicer arietinum* L.
131	2463	*Cicer arientinium*	*Cicer arietinum* L.
132	2464	*Cicer arientinium*	*Cicer arietinum* L.
133	2465	*Cicer arientinium*	*Cicer arietinum* L.
134	2466	*Cicer arientinium*	*Cicer arietinum* L.
135	2467	*Cicer arientinium*	*Cicer arietinum* L.
136	2468	*Cicer arientinium*	*Cicer arietinum* L.
137	2469	*Cicer arientinium*	*Cicer arietinum* L.
138	2470	*Cicer arientinium*	*Cicer arietinum* L.
139	2471	*Cicer arientinium*	*Cicer arietinum* L.
140	2472	*Cicer arientinium*	*Cicer arietinum* L.
141	2473	*Cicer arientinium*	*Cicer arietinum* L.
142	2474	*Cicer arientinium*	*Cicer arietinum* L.
143	2475	*Cicer arientinium*	*Cicer arietinum* L.
144	2476	*Cicer arientinium*	*Cicer arietinum* L.

145	2477	*Cicer arientinium*	*Cicer arietinum* L.
146	2478	*Cicer arientinium*	*Cicer arietinum* L.
147	2479	*Cicer arientinium*	*Cicer arietinum* L.
148	2480	*Cicer arientinium*	*Cicer arietinum* L.
149	2481	*Cicer arientinium*	*Cicer arietinum* L.
150	2482	*Cicer arientinium*	*Cicer arietinum* L.
151	2483	*Cicer arientinium*	*Cicer arietinum* L.
152	2484	*Cicer arientinium*	*Cicer arietinum* L.
153	2485	*Cicer arientinium*	*Cicer arietinum* L.
154	2486	*Cicer*	*Cicer arietinum* L.
155	2487	*Cicer*	*Cicer arietinum* L.
156	2490	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
157	2491	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
158	2508	*Cassia pumilla* Lam.	*Chamaecrista pumila* (Lam.) K.Larsen
159	2627	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
160	2631	*Eleiotis sororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
161	2640	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
162	3392	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
163	3394	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
164	3397	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
165	3513	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
166	3520	*Cassiarenigera* Wall.	*Cassia roxburghii* DC.
167	3521	*Lespedezasericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
168	3532	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
169	3539	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
170	3540	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.

171	3728	*Desmodium polycarpum* (Poir.) DC.	*Desmodium polycarpon* (Poir.) DC.
172	3729	*Cantharospermum scarabaeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
173	3730	*Cantharospermum scarabaeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
174	3731	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
175	3732	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
176	3734	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
177	3744	*Lespedeza sericea* (Thunb.) Miq.	Lespedeza cuneata (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
178	3751	*Desmodium oxyphyllum* DC.	Hylodesmum *podocarpum* (DC.) H.Ohashi & R.R.Mill
179	3766	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
180	3767	*Desmodium gyrans* DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
181	3769	*Desmodium sambuense* (D.Don) DC.	*Desmodium multiflorum* DC.
182	3778	*Desmodium sambuense* (D.Don) DC.	*Desmodium multiflorum* DC.
183	3794	*Desmodium latifolium* DC.	*Desmodium velutinum* (Willd.) DC.
184	3797	*Cantharospermum scarabaeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
185	3818	*Desmodium concinum* DC.	*Desmodium concinnum* DC.
186	3819	*Desmodium concinum* DC.	*Desmodium concinnum* DC.
187	3821	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
188	3822	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
189	3829	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Lace & Hauech
190	3833	*Desmodium sambuense* (D.Don) DC.	*Desmodium multiflorum* DC.
191	3880	*Desmodium oxyphyllum* DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill
192	3977	*Desmodium* laburnifolium DC.	*Ohwia caudata* (Thunb.) H.Ohashi
193	3989	*Atylosia mollis* Benth.	*Cajanus crassus* (King) Maesen
194	3996	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* Wallich ssp.

			triangulare (Retz.) Schindl.
195	4011	*Cassia mimosoides* Lamk.	*Chamaecrista pumila* (Lam.) K.Larsen
196	4014	*Ougeinia dalbergioides* Bth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
197	4015	*Ougeinia dalbergioides* Bth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
198	4020	*Cassia laevigata* Willd.	*Senna floribunda* (Cav.) H.S.Irwin & Barneby
199	4026	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
200	4118	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
201	4119	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
202	4120	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
203	4121	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
204	4122	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
205	4125	*Desmodium oxyphyllum DC.*	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill ssp. *oxyphyllum* (DC.) H.Ohashi & R.R.Mill
206	4127	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
207	4128	*Indigofera viscosa* Lamk.	*Indigofera colutea* (Burm. f.) Merr.
208	4129	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
209	4142	*Chamaecrista*prostrata Roxb.	*Chamaecristapumila* (Lam.) K.Larsen
210	4143	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
211	4149	*Lupinus paynei* Davidson	*Lupinus davidsonii* Davidson
212	4150	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
213	4151	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
214	4152	*Phaseolus trilobus* (L.) Aiton	*Vigna trilobata* (L.) Aiton
215	4153	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
216	4154	*Alysicarpus longifoluis* (Spreng.) Wight & Arn.	*Alysicarpus longifolius* (Spreng.) Wight & Arn.
217	4168	*Bauhiniaretusa* Roxb.	*Bauhinia semla* Wunderlin
218	4171	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var.

			cuneata (Dum.Cours.) G.Don
219	4173	*Trigonella pubescens* Edgew.	*Medicago edgeworthii* Sirj.
220	4174	*Trigonella pubescens* Sirj.	*Medicago edgeworthii* Sirj.
221	4175	*Trigonella pubescens* Sirj.	*Medicago edgeworthii* Sirj.
222	4180	*Acaciasp.*S Lindl.	*Astragalus sp.*
223	4186	*Acacia paniculata* Willd.	*Acacia tenuifolia* (L.)Willd.
224	4187	*Acacia spadicigera* Schltdl. & Cham.	*Acacia cornigera* (L.)Willd.
225	4190	*Dichrostachys nutans* Benth.	*Dichrostachys cinerea* (L.) Wight & Arn.
226	4196	*Xylia dolabriformis* (Roxb.) Taub.	*Xylia xylocarpa* (Roxb.) Taub.
227	4197	*Xylia dolabriformis* Bth.	*Xylia xylocarpa* (Roxb.) Taub.
228	4198	*Lonchocarpus* Image S	*Lonchocarpus sp.*
229	4204	*Caesalpinia nuga* Aiton.	*Caesalpinia crista* L.
230	4205	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
231	4206	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
232	4207	*Cantharospermum* platycarpum (Benth.) Raizada	*Cajanus platycarpus* (Benth.) Maesen
233	4208	*Cantharosperm*um elongatum (Benth.) Raizada	*Cajanus elongatus* (Benth.) Maesen
234	4211	*Shuteria densiflora* Benth.	*Shuteria involucrata* (Wall.) Wight & Arn. var. *glabrata*
235	4212	*Shuteria densiflora* Benth.	*Shuteria involucrata* (Wall.) Wight & Arn. var. *glabrata*
236	4455	*Acacia*	*Acacia* sp.
237	4518	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
238	4565	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
239	4566	*Acaciapaniculata* Willd.	*Acacia tenuifolia* (L.)Willd.
240	5051	*Calophaca sp.*	*Calophaca sp.*
241	5116	*Melilotus alba* Lamk.	*Melilotus officinalis* (Medik.) H.Ohashi & Tateishi ssp. alba (Medik.) H.Ohashi & Tateishi
242	5229	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.)Wight & Arn. ex

			Wight
243	5230	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
244	5239	*Indigofera paucifolia* Del.	*Indigofera oblongifolia* Forssk.
245	5250	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
246	5319	*Phaseolus trilobus* Aiton.	*Vigna trilobata* (L.) Aiton
247	5320	*Phaseolus trilobus* Aiton	*Vigna trilobata* (L.) Verdc.
248	5328	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
249	5329	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
250	5330	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
251	5331	*Cassiaobtusa* Roxb.	*Senna italica* Mill.
252	5509	*Bauhiniaanguina* Roxb.	*Bauhinia* scandens L.
253	5642	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
254	5643	*Melilotus alba* (L.) All.	*Melilotus officinalis* (Medik.) H.Ohashi & Tateishi ssp. *alba* (Medik.) H.Ohashi & Tateishi
255	5644	*Melilotus alba* (L.) All.	*Melilotus officinalis* (Medik.) H.Ohashi & Tateishi ssp. *alba* (Medik.) H.Ohashi & Tateishi
256	5645	*Indigofera alba* (L.) All.	*Indigofera officinalis* (Medik.) H.Ohashi & Tateishi ssp. *alba* (Medik.) H.Ohashi & Tateishi
257	5646	*Indigofera enneaphylla*	*Indigofera linnaei* Ali
258	5647	*Indigofera enneaphylla*	*Indigofera linnaei* Ali
259	5662	*Wisteria chinensis* DC.	*Wisteria sinensis* (Sims) Sweet
260	5666	*Bauhinia spegazzinii* Pirotta	*Bauhinia pudica* L.
261	5785	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
262	5961	*Phaseolus trilobus* Aiton	*Vigna trilobata* (L.) Verdc.
263	5962	*Derris uliginosa* Benth.	*Derris trifoliata* Lour.
264	5964	*Albizia lebbek* (Roxb.) Benth.	*Albizia lucidior* (Steud.) I.C.Nielsen
265	5977	*Erythrina indica* Lam.	*Erythrina variegata* L.

266	5978	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
267	6381	*Bauhiniatriandra* Roxb.	*Bauhiniapurpurea* L.
268	6542	*Cassiaglauca* Lamk.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
269	6547	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
270	6551	*Mucuna prurita* Baker	*Mucuna pruriens* (L.)DC.
271	6828	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
272	6837	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
273	6839	*Cassiaglauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
274	6844	*Cicer arientinium* Linn.	*Cicer arietinum* L.
275	6845	*Cicer arientinium* Linn.	*Cicer arietinum* L.
276	6846	*Cicer arientinium* Linn.	*Cicer arietinum* L.
277	6852	*Desmodium gangeticus* (L.) DC.	*Desmodium gangeticum* (L.)DC.
278	6853	*Desmodium gangeticus* (L.) DC.	*Desmodium gangeticum* (L.)DC.
279	6857	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
280	6871	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
281	6872	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
282	6874	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
283	6875	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
284	6876	*Melilotus alba* Lamk.	*Melilotus officinalis* (Medik.) H.Ohashi & Tateishi
285	6878	*Phaseolus trilobus* Aiton	*Vigna trilobata* (L.)Verdc.
286	6879	*Phaseolus trilobus* Ait.	*Vigna trilobata* (L.) Verdc.
287	6880	*Phaseolus trilobus* Aiton	*Vigna trilobata* (L.) Verdc.
288	6881	*Pisum arvense* Linn.	*Pisum sativum* L.
289	6882	*Pisum arvense* Linn.	*Pisum sativum* L.
290	6883	*Pisum arvense* Linn.	*Pisum sativum* L.
291	6890	*Prosopis spicigera* L.	*Prosopis cineraria* (L.)Druce

292	6891	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
293	6895	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
294	6896	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
295	7053	*Rothia trifoliata* Pers.	*Rothia indica* (L.)Druce
296	7111	*Cylista scariosa* Roxb.	*Paracalyx scariosus* (Roxb.) Ali
297	7224	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
298	7297	*Cicer arientinium* Linn.	*Cicer arietinum* L.
299	7437	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
300	7453	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
301	7459	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
302	7473	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
303	7477	*Mucuna prurita* (L.) DC.	*Mucuna pruriens* (L.)DC.
304	7478	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
305	7482	*Phaseolus trilobus* Aiton	*Vignatrilobata* (L.) Verdc.
306	7572	*Erythrina indica* Lamk.	*Erythrina variegata* L.
307	7775	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
308	7776	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
309	7777	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
310	7778	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
311	7779	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
312	7780	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
313	7781	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
314	7782	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
315	7783	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
316	7788	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
317	7789	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
318	7835	*Alysicarpus styracifolius* Baker.	*Alysicarpus scarious* (Spreng.)Thwaites

319	7904	*Clitorea biflora* Dalzell	*Clitoria annua* J.Graham
320	7905	*Clitoria biflora* Dalzell	*Clitoria annua* J.Graham
321	7910	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
322	7911	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
323	7916	*Dolichos falcata* Klein	*Dolichos trilobus* Klein
324	7917	*Indigofera houer* Forsk.	*Indigofera tinctoria* L.
325	7918	*Indigofera houer* Forsk.	*Indigofera* tinctoria L.
326	7920	*Indigofera viscosa* Lam.	*Indigofera colutea* (Burm. f.) Merr.
327	7921	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
328	7925	*Tephrosia pauciflora* Grah.	*Tephrosia subtriflora* Baker
329	7926	*Tephrosia pauciflora* Baker	*Tephrosia subtriflora* Baker
330	7927	*Tephrosia pauciflora* Grah.	*Tephrosia subtriflora* Baker
331	7928	*Tephrosia pauciflora* Grah.	*Tephrosia subtriflora* Baker
332	8084	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
333	8153	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
334	8167	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
335	8188	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
336	8190	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
337	8204	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
338	8213	*Medicago denticulata* Linn.	*Medicagopolymorpha* L.
339	8249	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
340	8361	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
341	8395	*Millettia ovalifolia* Kurz.	*Millettia peguensis* Ali
342	8397	*Sesbania paludosa* Prain	*Sesbania javanica* (Blume) Miq.
343	8460	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
344	8463	*Pisum arvense* Linn.	*Pisum sativum* L.
345	8467	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.

346	8470	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
347	8472	*Melilotus alba* Desv.	*Melilotus officinalis* (Medik.) H.Ohashi & Tateishi ssp. *alba* (Medik.) H.Ohashi & Tateishi
348	8474	*Caesalpiniabonducella* (L.) Fleming	*Caesalpinia bonduc* (L.) Roxb.
349	8477	Leucaena *glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
350	8479	*Indigofera pentaphylla* Murray	*Indigofera glabra* L.
351	8483	*Lupinus hirsutus* L.	*Lupinus micranthus* Guss.
352	8517	*Ervum lens* Linn.	*Lens culinaris* Medik.
353	8554	*Tephrosia purpurea* (L.) Pers.	*Tephrosia villosa* (L.)Pers.
354	8567	*Acacia leucophloea* Willd.	*Acacia torta* (Roxb.)Craib
355	8661	*Cassia glauca* Linn.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
356	8965	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
357	8974	*Medicago denticulata* Willd.	*Medicagopolymorpha* L.
358	8976	*Indigofera* enneaphylla L.	*Indigofera linnaei* Ali
359	8979	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
360	8980	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
361	8986	*Millettiaovalifolia* Kurz.	*Millettia peguensis* Ali
362	8987	*Millettia ovalifolia* Kurz.	*Millettia peguensis* Ali
363	8994	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC.
364	8995	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC.
365	9003	*Desmodium cephalotes* Wall	*Dendrolobium triangulare* (Retz.)Schindl.
366	9011	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
367	9013	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
368	9020	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
369	9023	*Atylosia scaraboides* (L.) Benth.	*Cajanus scarabaeoides* (L.) Thouars
370	9024	*Atylosia crassa* Prain	*Cajanus crassus* (King) Maesen
371	9026	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze

372	9027	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
373	9028	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
374	9029	*Phaseolus trilobus* Aiton	*Vigna trilobata* (L.) Verdc.
375	9030	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
376	9035	*Mezoneuron cucullatum* W. & A.	*Caesalpiniacucullata* Roxb.
377	9036	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
378	9037	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
379	9041	*Bauhiniaanguina* Roxb.	*Bauhiniavahlii* Wight & Arnott
380	9042	*Bauhiniaanguina* Roxb.	*Bauhiniavahlii* Wight & Arnott
381	9049	*Cassiapumilla* Lamk	*Cassiamimosoides* L.
382	9052	*Acaciapennata* Willd.	*Acaciatorta* (Roxb.)Craib
383	9053	*Acaciapennata* Willd.	*Acaciatorta* (Roxb.)Craib
384	9061	*Albizia lebbek* Benth	*Albizia lebbeck* (L.f.) Benth.
385	9955	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
386	9956	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
387	9975	*Derris laxiplora* Haines	*Derris hainesiana* Thoth.
388	10057	*Piptadenia paraguayensis* (Benth.)Lindm.	*Microlobius foetidus* (Benth.) M.Sousa & G.Andrade.
389	10109	*Stylosanthes gracilis* Kunth	*Stylosanthes guianensis* (Aubl.)Sw.
390	10200	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
391	10201	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
392	10202	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
393	10205	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
394	10206	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
395	10681	*Albizia mollis* Durazz.	*Albizia julibrissin* Durazz.
396	10820	*Robinia pseudacacia* L.	*Robinia pseudoacacia* L.
397	10997	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali

398	10998	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
399	10999	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
400	11000	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
401	11039	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
402	11574	*Uraria alopecuroides* (Roxb.) Wight	*Uraria logopodioides* (L.)DC.
403	11701	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
404	11728	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
405	11775	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
406	11780	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
407	11822	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
408	11827	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
409	11836	*Acaciajacquemonti* Benth.	*Acaciajacquemontii* Benth.
410	11872	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
411	11875	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
412	11882	*Acacia jacquemonti* Benth.	*Acaciajacquemontii* Benth.
413	11883	*Acacia jacquemonti* Benth.	*Acaciajacquemontii* Benth.
414	11884	*Acaciajacquemonti* Benth.	*Acaciajacquemontii* Benth.
415	11898	*Prosopis spicigera* L.	*Prosopis cineraria* (L.)Druce
416	11923	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
417	11924	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
418	11925	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
419	11926	*Phaseolus trilobus* Aiton.	*Vigna trilobata* (L.) Verdc.
420	11927	*Phaseolus trilobus* (L.) Aiton	*Vigna trilobata* (L.) Verdc.
421	11928	*Phaseolus trilobus*	*Vigna trilobata* (L.) Verdc.
422	11929	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
423	11930	*Alysicarpus nummularifolius* (L.) DC.	*Alysicarpus* vaginalis (L.)DC.
424	11931	*Alysicarpus nummularifolius* (L.) DC.	*Alysicarpus* vaginalis (L.)DC.

425	11964	*Pongamia glabra* Vent.	*Pongamia pinnata (*L.) Pierre
426	11965	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
427	11966	*Prosopisspicigera* L.	*Prosopis cineraria* (L.)Druce
428	11972	*Prosopisglandulosa* Torr.	*Prosopis juliflora* (Sw.) DC.
429	11974	*Indigofera enneaphylla* L.	*Indigofera* linnaei Ali
430	11975	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
431	11976	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
432	11977	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
433	11978	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
434	11981	*Indigofera pulchella* Roxb.	*Indigofera trita* L.
435	11986	*Phaseolus trilobus*	*Vigna trilobata* (L.) Verdc.
436	11990	*Vigna catjang* Endl.	*Vigna unguiculata* (L.) Walp. ssp. *unguiculata*
437	12006	*Cassia obtusa* Roxb.	*Senna italica* Mill.
438	12376	*Cylista scariosa* Roxb.	*Paracalyx scariosus* (Roxb.) Ali
439	12377	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
440	12378	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
441	12379	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
442	12561	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
443	12562	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
444	12605	*Trigonella corniculata* Linn.	*Trigonella balansae* Boiss. & Reut.
445	12718	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
446	12749	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
447	12826	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
448	13194	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
449	13341	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
450	13343	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
451	13344	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis.

452	13347	*Indigoferaenneaphylla* Linn.	*Indigofera linnaei* Ali
453	13353	*Medicago denticulata* Willd.	*Medicagopolymorpha* L.
454	13390	*Trigonellapolycerata* Linn.	*Medicago orthoceras* (Kar. & Kir.)Trautv.
455	13391	*Pisum arvense* Linn.	*Pisum sativum* L.
456	13396	*Millettia ovalifolia* Kurz.	*Millettia peguensis* Ali
457	13617	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
458	13618	*Shuteria vestita* Wight & Arn.	*Shuteria involucrata* (Wall.) Wight & Arn.
459	13619	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
460	13850	*Phaseolus calcarata* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
461	13852	*Cajanus indicus* Spreng.	*Cajanus* cajan (L.) Millsp.
462	13853	*Arachis hypogea* Linn.	*Arachis hypogaea* L.
463	13854	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
464	13865	*Melilotus alba* Medik.	*Melilotus officinalis* Medik. ssp. *alba* (Medik.) H.Ohashi & Tateishi
465	13870	*Aeschynomene aspera* Linn.	*Aeschynomene indica* L.
466	14035	*Cassia obtusa* Roxb.	*Senna italica* Mill.
467	14036	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
468	14037	*Mezonevron cucullatum* (Roxb.) Wight & Arn.	*Caesalpinia cucullata* Roxb.
469	14039	*Albizia* lucida (Roxb.) Benth.	*Albizia* lucidior (Steud.) I.C.Nielsen
470	14261	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
471	14262	*Indigofera* enneaphylla Linn.	*Indigofera* linnaei Ali
472	14310	*Desmodium* motorium (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
473	14618	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
474	14621	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
475	14647	*Clitoria biflora* Dalzell	*Clitoria annua* J.Graham
476	14648	*Indigofera paucifolia* Delile	*Indigofera* oblongifolia Forssk.
477	14707	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
478	14708	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali

479	14722	*Robinia pseudoacacia* Linn.	*Robinia pseudoacacia* L.
480	14725	*Glycine hispida* Maxim.	*Glycine max* (L.)Merr.
481	14729	*Indigofera gerardiana* Wall	*Indigofera heterantha* Brandis
482	14731	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
483	14893	*Tephrosia hamiltonii* Gamble	Tephrosia *purpurea* (L.)Pers. ssp. *purpurea*
484	14950	*Cassialaevigata* Willd	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby
485	15066	*Clitoria biflora* Dalzell	Clitoria *annua* J.Graham
486	15121	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
487	15122	*Caesalpinia bonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
488	15234	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
489	15345	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
490	15565	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
491	15567	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
492	15570	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
493	15577	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
494	15581	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
495	15610	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
496	15612	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
497	15677	*Tephrosia pauciflora* Baker	*Tephrosia subtriflora* Baker
498	15678	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
499	15682	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
500	15830	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
501	15965	*Indigofera*	*Indigofera* sp.
502	16048	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
503	16049	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
504	16076	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
505	16216	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.

506	16217	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
507	16220	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
508	16221	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
509	16225	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. culinaris
510	16226	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. culinaris
511	16227	*Cicer arientinium* L.	*Cicer arietinum* L.
512	16228	*Cicer arientinium* L.	*Cicer arietinum* L.
513	16229	*Cicer arientinium* L.	*Cicer arietinum* L.
514	16231	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
515	16241	*Trigonella corniculata* L.	*Trigonella balansae* Boiss. & Reut.
516	16242	*Caesalpinia sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
517	16249	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
518	16250	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
519	16251	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
520	16252	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
521	16257	*Trigonella corniculata* L.	*Trigonella balansae* Boiss. & Reut.
522	16262	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
523	16271	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
524	16272	*Cajanus grandiflora* Benth	*Cajanus cajan* (L.) Millsp.
525	16274	*Vigna catjang* (Burm.f.) Walp.	*Vigna unguiculata* (L.) Walp. ssp. unguiculata
526	16275	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
527	16284	*Desmodium floribundum* G.Don	*Desmodium* elegans DC.
528	16292	*Desmodium oxyphyllum* DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill
529	16300	*Lathyrus altaicus* Ledeb.	*Lathyrus humilis* (Ser.) Spreng.
530	16465	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
531	16477	*Indigofera houer* Forssk.	*Indigofera tinctoria* L.
532	16653	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali

533	16683	*Cassia sumatrana* Roxb.	*Senna siamea* (Lam.) H.S.Irwin & Barneby
534	16727	*Bauhinia triandra* Roxb.	*Bauhiniapurpurea* L.
535	16729	*Pongamiaglabra* Vent.	*Pongamia pinnata* (L.) Pierre
536	16753	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
537	16802	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
538	16843	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
539	16872	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.)Wight & Arn. ex Wight
540	16911	*Mimosa spegazzinii* Pirotta	*Mimosa polycarpa* Burkart
541	16937	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
542	16992	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
543	17124	*Cassiasumatrana* Roxb.	*Senna siamea* (Lam.) H.S.Irwin & Barneby
544	17125	*Trigonella corniculata* Linn.	*Trigonella balansae* Boiss. & Reut.
545	17140	*Desmodium biflorum* (L.) DC.	*Desmodium triflorum* (L.)DC.
546	17141	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
547	17146	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
548	17187	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
549	17203	*Indigofera paucifolia* Delile	*Indigofera oblongifolia* Forssk.
550	17322	*Sesbania aculeata* (Willd.) Pers.	*Sesbaniabispinosa* (Jacq.) W.Wight
551	17337	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
552	17342	*Pisum arvense* L.	*Pisum sativum* L.
553	17400	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
554	17482	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
555	17483	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
556	17484	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
557	17487	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.

558	17501	*Crotalaria hemifusa* Grahm.	*Crotalaria humifusa* Benth.
559	17510	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
560	17511	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
561	17512	*Flemingiasemialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
562	17519	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
563	17520	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
564	17521	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
565	17522	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
566	17539	*Bauhinia retusa* Ham.	*Bauhiniasemla* Wunderlin
567	17543	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
568	17572	*Bauhinia tomentosa* L.	*Bauhiniapurpurea* L.
569	17616	*Indigofera sumatrana* Gaertn.	*Indigofera tinctoria* L.
570	17617	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
571	17664	*Cassia sumatrana* Roxb.	*Senna siamea* (Lam.) H.S.Irwin & Barneby
572	17665	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
573	17732	*Vicia pallida* Turcz.	*Viciaamurens*is Oett.
574	17821	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
575	17822	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
576	17823	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
577	17992	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
578	18123	*Uraria alopecuroides* (Roxb.) Wight	*Uraria logopodioides* (L.)DC.
579	18241	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
580	18250	*Medicago falcata* L.	*Medicago sativa* L.
581	18271	*Psoralea plicata* Delile	*Cullen plicatum* Delile
582	18272	*Glycine hispida* (Moench) Maxim.	*Glycine max* (L.)Merr.
583	18314	*Bauhiniaretusa* Ham.	*Bauhinia divaricata* L.
584	18316	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.

585	18344	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
586	18360	*Melilotus alba* Lamk.	*Melilotus indicus* (L.) All.
587	18537	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
588	18669	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* Wallich ssp. *triangulare* (Retz.) Schindl.
589	18679	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
590	18704	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
591	18741	*Indigofera caerulea* Forssk.	*Indigofera tinctoria* L.
592	18766	*Indigofera enneaphylla* Lam.	*Indigofera linnaei* Ali
593	19047	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
594	19048	*Indigofera* gerardiana Wall.	*Indigofera heterantha* Brandis
595	19051	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Lace & Hauech
596	19057	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
597	19245	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
598	19246	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
599	19247	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
600	19248	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
601	19249	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
602	19261	*Tephrosia purpurea* (L.) Pers.	*Tephrosia villosa* (L.)Pers.
603	19265	*Caesalpinia sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
604	19282	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
605	19298	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
606	19302	*Ervum lens* L.	*Lens culinaris* Medik.
607	19309	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
608	19318	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
609	19329	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
610	19330	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev

611	19331	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
612	19333	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
613	19334	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
614	19336	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
615	19342	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
616	19343	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
617	19350	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
618	19351	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
619	19352	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
620	19357	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
621	19358	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
622	19359	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
623	19361	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
624	19364	*Trigonella polycerata* Linn.	*Medicago orthoceras* (Kar. & Kir.)Trautv.
625	19375	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
626	19376	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
627	19379	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
628	19385	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
629	19388	*Psoralea corylifolia* DC.	*Cullen corylifolium* (L.)Medik.
630	19396	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
631	19398	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
632	19401	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
633	19402	*Clitoria biflora* Dalzell	*Clitoria annua* J.Graham
634	19405	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
635	19406	*Indigofera pauciflora* Delile	*Indigofera oblongifolia* Forssk.
636	19414	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight

637	19415	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
638	19419	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
639	19422	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
640	19423	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
641	19424	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
642	19425	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
643	19435	*Cassia obtusa* Roxb.	*Senna italica* Mill.
644	19438	*Cassia pumilla* Lam.	*Chamaecrista pumila* (Lam.) K.Larsen
645	19441	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
646	19451	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
647	19453	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
648	19457	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
649	19460	*Calliandra houstonii* Benth	*Calliandra houstoniana* (Mill.) Standl.
650	19461	*Psoralea corylifolia* DC.	*Cullen corylifolium* (L.)Medik.
651	19464	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
652	19473	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
653	19474	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
654	19491	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
655	19492	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
656	19495	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
657	19497	*Trifolium minus* Smith.	*Trifolium dubium* Sibth.
658	19498	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.)Wight & Arn. ex Wight
659	19505	*Phaseolus trilobus* Aiton	*Vigna trilobata* (L.)Verdc.
660	19506	*Phaseolus trilobus* Aiton.	*Vigna trilobata* (L.)Verdc.
661	19507	*Phaseolus trilobus* Aiton.	*Vigna trilobata* (L.)Verdc.
662	19508	*Phaseolus trilobus* Aiton.	*Vigna trilobata* (L.) Verdc.
663	19509	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal

664	19511	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.) Wight & Arn.
665	19512	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. cuneata (Dum.Cours.) G.Don
666	19513	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
667	19520	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
668	19522	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
669	19523	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
670	19528	*Psoralea corylifolia* DC.	*Cullen corylifolium* (L.)Medik.
671	19534	*Psoralea corylifolia* DC.	*Cullen corylifolium* (L.)Medik.
672	19535	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.) Wight & Arn.
673	19540	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
674	19543	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
675	19551	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
676	19552	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
677	19555	*Desmodiumdiffusum* DC.	*Desmodium laxiflorum* DC.
678	19556	*Desmodiumdiffusum* DC.	*Desmodium laxiflorum* DC.
679	19559	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
680	19564	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
681	19567	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
682	19568	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
683	19570	*Cantharospermumscarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
684	19571	*Cantharospermumscarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
685	19581	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
686	19582	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars

687	19583	*Calliandra houstonii* Benth.	*Calliandra houstoniana* (Mill.) Standl.
688	19586	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
689	19588	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
690	19589	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
691	19591	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
692	19593	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
693	19594	*Dolichoslablab* Linn.	*Lablab purpureus* (L.)Sweet
694	19597	*Cicer arientinium*	*Cicer arietinum* L.
695	19599	*Ervum lens* Linn.	*Lens culinaris* Medik.
696	19602	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
697	19605	*Desmodium laburnifolium* (Poir.) DC.	*Ohwia caudata* (Thunb.) H.Ohashi
698	19606	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
699	19616	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
700	19629	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
701	19633	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.)Wight & Arn. ex Wight
702	19638	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
703	19640	*Bauhiniatriandra* Roxb.	*Bauhiniapurpurea* L.
704	19641	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
705	19647	*Cassia obtusa* Roxb.	*Senna italica* Mill.
706	19658	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachys cinerea* (L.) Wight & Arn.
707	21414	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* Wallich
708	21415	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
709	21416	*Desmodium oxyphyllum* DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill ssp. *oxyphyllum* (DC.) H.Ohashi & R.R.Mill
710	21440	*Bauhiniaretusa* Ham.	*Bauhiniasemla* Wunderlin
711	21441	*Bauhiniaretusa* Ham.	*Bauhiniasemla* Wunderlin
712	21443	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth

713	21444	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
714	21445	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
715	21446	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
716	21464	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
717	21465	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
718	21466	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
719	21467	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
720	21468	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
721	21492	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
722	21493	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
723	21494	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
724	21495	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
725	21508	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. a*lba* (Medik.) H.Ohashi & Tateishi
726	21509	*Wisteria chinensis* DC.	*Wisteria sinensis* (Sims) Sweet
727	21533	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
728	21535	*Phaseolus trilobus* Aiton.	*Vigna trilobata* (L.)Verdc.
729	21536	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
730	21537	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
731	21541	*Trigonella corniculata* Linn.	*Trigonella balansae* Boiss. & Reut.
732	21542	*Medicago sativa* L.	*Trigonella balansae* Boiss. & Reut.
733	21543	*Medicago sativa* L.	*Trigonella emodi* Benth.
734	21546	*Sesbania aculeata (*Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
735	21548	*Cicer arientinium* Linn.	*Cicer arietinum* L.
736	21549	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
737	21550	*Ervum lens* Linn.	*Lens culinaris* Medik.
738	21551	*Ervum lens* Linn.	*Lens culinaris* Medik.
739	21552	Ervum lens Linn.	*Lensculinaris* Medik.

740	21565	*Ervum lens* Linn.	*Lens culinaris* Medik.
741	21569	*Trigonella corniculata* Linn.	*Trigonella balansae* Boiss. & Reut.
742	21570	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
743	21572	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
744	21576	*Cylista scariosa* Ait.	*Paracalyx scariosus* (Roxb.) Ali
745	21577	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
746	21578	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
747	21579	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
748	21581	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
749	21585	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
750	21586	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
751	21589	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
752	21594	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
753	21607	*Millettia ovalifolia* Kurz.	*Millettia peguensis* Ali
754	21614	*Millettia ovalifolia* Kurz.	*Millettia peguensis* Ali
755	21617	*Dichrostachys nutans* (Pers.) Benth.	*Dichrostachyscinerea* (L.)Wight & Arn. ex Wight
756	21618	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
757	21619	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
758	21628	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
759	21629	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
760	21630	*Indigoferaenneaphylla* Linn.	*Indigofera linnaei* Ali
761	21638	*Desmodiumlatifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
762	21643	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanusscarabaeoides* (L.) Thouars
763	21644	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars

764	21645	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
765	21808	*Butea parviflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
766	21813	*Bauhiniaanguina* Roxb.	*Bauhiniascandens* L.
767	21814	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
768	21815	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
769	21817	*Bauhiniaanguina* Roxb.	*Bauhiniascandens* L.
770	21818	*Cassiapumilla* Lamk.	*Chamaecristapumila* (Lam.) K.Larsen
771	21828	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
772	21831	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
773	21834	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
774	21835	*Desmodium* latifolium (Ker. Gawl.) DC.	*Desmodium* velutinum (Willd.) DC. ssp. velutinum (Willd.) DC.
775	21836	*Desmodium* latifolium (Ker. Gawl.) DC.	*Desmodium* velutinum (Willd.) DC. ssp. velutinum (Willd.) DC.
776	21837	*Desmodium latifolium* DC.	*Desmodium* velutinum (Willd.) DC. ssp. *velutinum* (Willd.) DC.
777	21838	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
778	21839	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium* velutinum (Willd.) DC. ssp. *velutinum* (Willd.) DC.
779	21840	*Desmodium* polycarpum (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
780	21841	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
781	21842	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
782	21843	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
783	21844	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
784	21850	*Desmodium gangeticum* DC.	*Desmodium laxiflorum* DC.
785	21852	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
786	21853	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi

787	21854	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
788	21855	*Desmodium gyrans* (L.f.) DC.	*Codariocalyxmotorius* (Houtt.) H.Ohashi
789	21876	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
790	21879	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
791	21880	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
792	21881	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
793	21882	*Atylosia scaraboides* (L.) Benth.	*Cajanus scarabaeoides* (L.) Thouars
794	21883	*Atylosia scaraboides* Benth.	*Cajanus scarabaeoides* (L.) Thouars
795	21884	*Atylosia scaraboides* Benth.	*Cajanus scarabaeoides* (L.) Thouars
796	21893	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
797	21898	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
798	21899	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
799	21902	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
800	21903	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
801	21904	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
802	21905	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
803	21930	*Dalbergia paniculata* Roxb.	*Dalbergia lanceolaria* L.f.
804	22166	*Lindenbergia urticaefolia* Lehm.	*Brachycorythis parviflora* Schard. ex Wendl.
805	22679	*Mundulea suberosa* Benth.	*Mundulea sericea* (Willd.) A.Chev.
806	22680	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
807	22681	*Sesbania paludosa* Prain	*Sesbania javanica* (Blume) Miq.
808	22682	*Caesalpinia sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
809	22683	*Caesalpinia sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
810	22687	*Indigofera echinata* Willd.	*Indigofera nummulariifolia* (L.)Alston
811	22689	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
812	22691	*Indigofera hebepetala* Roxb.	*Indigofera cassioides* DC.
813	22692	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.

814	22693	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
815	22710	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
816	22711	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
817	22719	*Mimosa spegazzinii* Pirotta	*Mimosa polycarpa* Pirotta var. *spegazzinii* Burkart
818	22722	*Prosopis spicigera* L.	*Prosopis cineraria* (L.)Druce
819	22723	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
820	22729	*Cassia glauca* Lamk.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
821	22730	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
822	22738	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia prostrata* Roxb.
823	22739	*Parkiaroxburghii* G.Don	*Parkia timoriana* (DC.) Merr.
824	22746	*Acacia pinnata* (L.) Willd.	*Acacia pennata* (L.)Willd.
825	22752	*Desmodium* diffusum DC.	*Desmodium laxiflorum* DC.
826	22754	*Atylosia cressa* Prain	*Cajanus crassus* (King) Maesen
827	22757	*Clianthus dampieri* A.Cunn.	*Swainsona formosa* (G.Don) J.Thompson
828	22760	*Cylista scariosa* Ait.	*Paracalyx scariosus* (Roxb.) Ali
829	22762	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
830	22763	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
831	22765	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
832	22767	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
833	22768	*Caragana chamlagu* Lamk.	*Caragana sinica* Lam.
834	22771	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
835	22772	*Lupinus hirsutus* L.	*Lupinus micranthus* Guss.
836	22773	*Parkia roxburghii* G.Don	*Parkia timoriana* (DC.) Merr.
837	22776	*Mimosa speciosa* Rottler	*Albizia julibrissin* Durazz.
838	22895	*Vigna catjang* (Burm.f.) Walp.	*Vigna unguiculata* (L.) Walp. ssp. unguiculata
839	22897	*Cantharospermum scarabeoideum* (L.)	*Cajanus scarabaeoides* (L.) Thouars

		Baill.	
840	22901	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
841	22902	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
842	22905	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
843	22906	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
844	22909	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
845	22910	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
846	22923	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
847	22924	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
848	22934	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* Wallich ssp. *triangulare* (Retz.) Schindl.
849	22937	*Desmodium motorium* DC	*Codariocalyx motorius* (Houtt.) H.Ohashi
850	22938	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
851	22940	*Eleiotis sororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
852	22948	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
853	22949	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
854	22950	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
855	22955	*Bauhiniavariegata* Linn.	*Bauhiniatomentosa* L.
856	22998	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
857	23015	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
858	23016	*Prosopis spicigera* Linn.	Prosopis *cineraria* (L.)Druce
859	23019	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
860	23032	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
861	23033	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
862	23034	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
863	23035	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
864	23126	*Cantharospermum scarabeoideum* (L.)	*Cajanusscarabaeoides* (L.) Thouars

		Baill.	
865	23127	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
866	23130	*Shuteria densiflora* Benth.	*Shuteria involucrata* (Wall.) Wight & Arn.
867	23133	*Cicer arientinium* Linn.	*Cicer arietinum* L.
868	23137	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
869	23138	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
870	23139	*Cicer arientinium* Linn.	*Cicer arietinum* L.
871	23140	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
872	23145	*Melilotus alba* Medik. ex Desr.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
873	23156	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
874	23157	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
875	23190	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
876	23195	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
877	23196	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
878	23197	*Cantharospermum scarabeoideum* (L.) Baill.	Cajanus*scarabaeoides* (L.) Thouars
879	23198	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
880	23199	*Indigofera gerardiana*	*Indigofera heterantha* Brandis
881	23200	*Indigofera gerardiana* Wall.	*Indigofera* heterantha Brandis
882	23201	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
883	23202	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
884	23203	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
885	23204	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
886	23206	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
887	23214	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
888	23232	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton

889	23234	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
890	23235	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
891	23408	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
892	23409	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
893	23410	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
894	23426	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
895	23427	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
896	23429	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
897	23430	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
898	23459	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
899	23473	*Tamarindus indicus* Linn.	*Tamarindus indica* L.
900	23474	*Tamarindus indicus* Linn.	*Tamarindus indica* L.
901	23477	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
902	23478	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
903	23479	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
904	23480	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
905	23481	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
906	23482	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
907	23492	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
908	23498	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
909	23500	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
910	23513	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
911	23514	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi

912	23515	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
913	23517	*Trifolium repens* Linn.	*Trifoliumpratense* L.
914	23524	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
915	23525	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. *culinaris*
916	23526	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
917	23527	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
918	23528	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
919	23529	*Lupinus hirsutus* L.	*Lupinus micranthus* Guss.
920	23534	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
921	23535	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
922	23538	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
923	23541	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
924	23543	*Clitoria biflora* Dalzell	*Clitoria annua* J.Graham
925	23544	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
926	23561	*Caesalpinia bonducella* (L.) Fleming	*Caesalpinia bonduc* (L.) Roxb.
927	23583	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
928	23584	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
929	23585	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
930	23586	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
931	23587	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
932	23588	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
933	23603	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
934	23615	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus* scarabaeoides (L.) Thouars
935	23616	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
936	23617	*Cantharospermum scarabeoideum* (L.)	*Cajanus scarabaeoides* (L.) Thouars

		Baill.	
937	23636	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
938	23637	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
939	23638	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
940	23642	*Lathyrus luteus* Baker	Lathyrus emodi (Fritsch) Ali
941	23647	*Robinia pseud-acacia* Linn.	*Robinia pseudoacacia* L.
942	23656	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
943	23659	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
944	23660	*Lathyrus altaicus* Ledeb.	*Lathyrus humilis* (Ser.) Spreng.
945	23709	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
946	23712	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
947	23714	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
948	23715	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
949	23723	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
950	23726	*Desmodium latifolium* DC.	*Desmodium velutinum* (Willd.) DC.
951	24592	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
952	24593	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
953	24594	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
954	24595	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
955	24596	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
956	24701	*Crotalaria usaramoensis* Baker f.	*Crotalaria trichotoma* Bojer
957	24702	*Crotalaria usaramoensis* Baker f.	*Crotalaria trichotoma* Bojer
958	24940	*Crotalaria usaramoensis* Baker f.	*Crotalaria trichotoma* Bojer
959	24941	*Crotalaria usaramoensis* Baker f.	*Crotalaria trichotoma* Bojer
960	24942	*Crotalaria usaramoensis* Baker f.	*Crotalaria trichotoma* Bojer

961	24943	*Crotalaria usaramoensis* Baker f.	*Crotalaria trichotoma* Bojer
962	24944	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
963	24981	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
964	24983	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC.
965	24987	*Bauhinia retusa* Ham.	*Bauhinia divaricata* L.
966	24988	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
967	24989	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* Wallich
968	25281	*Sesbania aculeata* Pers.	*Sesbania javanica* (Blume) Miq.
969	25282	*Sesbania aculeata* Pers.	*Sesbania javanica* (Blume) Miq.
970	25305	*Lespedeza juncea* Pers	*Indigofera trifoliata* L.
971	25332	*Dalbergia hircina* Wall.	*Dalbergia sericea* G.Don.
972	25333	*Dalbergia hircina* Wall.	*Dalbergia sericea* G.Don.
973	25491	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
974	25500	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
975	25682	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
976	25705	*Desmodium spirale* DC.	*Desmodium procumbens* DC.
977	25707	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
978	25774	*Clitoria ternata* Linn.	*Clitoria ternatea* L.
979	25869	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
980	25870	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
981	26243	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
982	26244	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
983	26245	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
984	26246	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
985	26247	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
986	26249	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
987	26250	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi

988	26251	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
989	26252	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
990	26253	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
991	26254	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
992	26255	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
993	26263	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
994	26267	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC.
995	26268	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
996	26271	*Desmodium polycarpum* DC.	*Desmodium heterocarpon* (L.)DC.
997	26275	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
998	26276	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
999	26283	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
1000	26296	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1001	26309	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1002	26318	*Bauhinia retusa* Ham.	*Bauhiniadivaricata* L.
1003	26319	*Bauhinia anguina* Roxb.	*Bauhiniascandens* L.
1004	26320	*Bauhinia anguina* Roxb.	*Bauhiniascandens* L.
1005	26321	*Bauhiniaanguina* Roxb.	*Bauhiniascandens* L.
1006	26322	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC.
1007	26323	*Mezonevron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
1008	26324	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
1009	26342	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
1010	26343	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
1011	26829	*Bauhiniaanguina* Roxb.	*Bauhiniascandens* L.
1012	27111	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1013	27112	*Crotolaria sericea* Retz.	*Crotalaria spectabilis* Roth

1014	27113	*Caesalpinia sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1015	27469	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1016	27470	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1017	27514	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1018	27604	*Medicago denticulata* Willd.	*Medicagopolymorpha* L.
1019	27720	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1020	27762	*Melilotus indica* (L.)All.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1021	27763	*Melilotus alba* Medik. ex Desr.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1022	27983	*Cicer arientinium*Linn.	*Cicer arietinum*L.
1023	28006	*Tephrosia pauciflora* Greanm	*Tephrosia subtriflora* Baker
1024	28017	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
1025	28597	*Vicia sativa* Linn.	*Lathyrus sativus* L.
1026	28642	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1027	28748	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
1028	29056	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC.
1029	29167	*Indigofera pentaphylla* Murray	*Indigofera glabra* L.
1030	29184	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1031	29297	*Cicer arientinium*Linn.	*Cicer arietinum* L.
1032	29298	*Cajanusindicus* Spreng.	*Cajanus cajan* (L.) Millsp.
1033	29303	*Cajanus indicus* Spreng.	*Cajanus cajan* (L.) Millsp.
1034	29305	*Flemingia chappar* Ham.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
1035	29347	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1036	29417	*Indigofera endecaphylla* Jacq.	*Indigofera hendecaphylla* Jacq.
1037	29494	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.

1038	29498	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
1039	29506	*Cicer arientinium* Linn.	*Cicer arietinum*L.
1040	29512	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1041	29560	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1042	29644	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
1043	29731	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1044	30073	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1045	30076	*Flemingia bracteata* (Roxb.) Wight	Flemingia strobilifera (L.) W.T.Aiton
1046	30077	*Flemingia bracteata* (Roxb.) Wight	Flemingia strobilifera (L.) W.T.Aiton
1047	30273	*Derris uliginosa* Benth.	Derris trifoliata Lour.
1048	30288	*Dolichos lablab* Linn.	Lablab purpureus (L.)Sweet
1049	30331	*Desmodium gyrans* (L.f.) DC.	Codariocalyx motorius (Houtt.) H.Ohashi
1050	30420	*Mucuna prurita* (L.) Hook.	Mucuna pruriens (L.)DC.
1051	30472	*Mezonevron* cucullatum (Roxb.) Wight & Arn.	*Caesalpinia*cucullata Roxb.
1052	30484	*Ougeinia dalbergioides* Benth.	Desmodium oojeinense (Roxb.) H.Ohashi
1053	30485	*Spatholobus roxburghii* Benth.	Spatholobus parviflorus (DC.) Kuntze
1054	30489	*Pisum arvense* L.	Pisum sativum L.
1055	30490	*Cicer arientinium* L.	*Cicer arietinum* L.
1056	30496	*Indigofera* enneaphylla Linn.	Indigofera linnaei Ali
1057	30499	*Indigofera* pulchella Roxb.	Indigofera cassioides DC.
1058	30501	*Crotalaria* striata DC.	Crotalaria pallida Aiton
1059	30502	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. *culinaris*
1060	30504	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1061	30511	*Ougeinia dalbergioides* Benth.	*Desmodium* oojeinense (Roxb.) H.Ohashi
1062	30512	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1063	30527	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. *culinaris*
1064	30529	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi

1065	30530	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
1066	30533	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
1067	30536	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
1068	30612	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1069	30655	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall.
1070	30734	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
1071	30851	*Acacia suma* Kurz.	*Acacia polyacantha* Willd.
1072	30863	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1073	30876	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
1074	30886	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall.
1075	30958	*Cicer arientinium*Linn.	*Cicer arietinum* L.
1076	31014	*Sterculia urens* Roxb.	*Desmodium laxiflorum* DC.
1077	31015	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1078	31040	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1079	31046	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1080	31114	*Rhynchosia minima* (L.) DC.	*Desmodium gangeticum* (L.)DC.
1081	31155	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
1082	31229	*Vicia vestita* Boiss.	*Vicia lutea* Boiss.
1083	31300	*Melilotus alba* Medik. ex Desr.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1084	31520	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1085	31553	*Derris dalbergioides* Baker	*Derris microphylla* Baker
1086	31606	*Desmodium* sambuense (D.Don) DC.	*Desmodium* multiflorum DC.
1087	31608	*Entada scandens* (L.) Benth.	*Entada gigas* (L.) Fawc. & Rendle
1088	31609	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1089	31713	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1090	31856	*Hibiscus micranthus* L.	*Crotalaria* incana L.

1091	31871	*Melilotus indica* (L.)All.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1092	31872	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1093	31895	*Vicia macrocarpa* Bertol.	Vicia sativa L. (Moris) Arcang.
1094	31896	*Indigofera gerardiana* Wall.	*Indigofera heterantha* Brandis
1095	31897	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1096	31905	*Rhynchosia sericea* Spanoghe	*Rhynchosia rothii* Aitch.
1097	31906	*Rhynchosia sericea* Spanoghe	*Rhynchosia rothii* Aitch.
1098	31907	*Rhynchosia sericea* Spanoghe	*Rhynchosia rothii* Aitch.
1099	32003	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1100	32078	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1101	32090	*Ervum lens* L.	*Lens culinaris* Medik.
1102	32125	*Wisteria chinensis* DC.	*Wisteria sinensis* (Sims) Sweet
1103	32219	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1104	32239	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1105	32309	*Melilotus indica* (L.)All.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1106	32402	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1107	32431	*Desmodium rotundifolium* Baker	*Desmodiastrum racemosum* Baker var. rotundifolium (Baker) A.Pramanik & Thoth.
1108	32501	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. alba (Medik.) H.Ohashi & Tateishi
1109	32686	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1110	32711	*Eleiotis sororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
1111	32931	*Veronica persica* Poir.	*Desmodiastrum racemosum* Baker
1112	33063	*Melilotus javanica* Thunb.	*Melilotus indicus* (L.) All.
1113	33174	*Cicer arientinium* Linn.	*Cicer arietinum* L.
1114	33285	*Indigofera pentaphylla* Murray	*Indigofera glabra* L.
1115	33288	*Cicer arientinium* Linn.	*Cicer arietinum* L.

1116	33295	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1117	33523	*Glinus scarabaeoidium* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1118	33582	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1119	33630	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
1120	33844	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1121	33872	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton
1122	33894	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
1123	33921	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1124	33996	*Trifolium elegans*	*Trifolium resupinatum* L.
1125	34108	*Elephantorrhiza burchellii* Benth.	*Elephantorrhiza elephantina* (Burch.) Skeels
1126	34233	*Medicago denticulata* Willd.	Medicago *polymorpha* L.
1127	34241	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1128	34264	*Caragana crassicaulis* Benth.	*Spongiocarpella nubigena* (D.Don) Yakovlev
1129	34282	*Entada scandens* (L.) Benth.	*Entada gigas* (L.) Fawc. & Rendle
1130	34491	*Heylandia frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
1131	34513	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1132	34541	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1133	34685	*Cantharospermum scarabaeoidium* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1134	34686	*Cantharospermum scarabaeoidium* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1135	34691	*Caesalpinia* sepiaria Roxb.	*Caesalpinia* decapetala (Roth) Alston
1136	34736	*Desmodium parvifolium* DC.	*Desmodium* microphyllum (Thunb.) DC.
1137	34738	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1138	34747	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
1139	34765	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight

1140	34809	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1141	34812	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
1142	34826	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1143	34828	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1144	34829	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1145	34833	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1146	34927	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
1147	34930	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
1148	34936	*Cicer arientinium* Linn.	*Cicer arietinum* L.
1149	34939	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton
1150	34944	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
1151	34958	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
1152	35026	*Psoralea corylifolia* DC.	*Cullen corylifolium* (L.)Medik.
1153	35031	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton
1154	35057	*Leucaena glauca* (Linn.)Benth.	*Leucaena leucocephala* (Lam.) de Wit
1155	35060	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1156	35071	Pongamia sp. S Heyne.	*Pongamia sp*.
1157	35163	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1158	35289	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1159	35318	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1160	35381	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1161	35487	*Desmodium latifolium* DC.	*Desmodium velutinum* (Willd.) DC.
1162	35534	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
1163	35607	*Alhagi camelorum* Linn.	*Alhagi maurorum* Medik.
1164	35608	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1165	36026	*Indigofera cordiflolia* Heyne	*Crotalaria hebecarpa* (DC.) Rudd.
1166	36055	*Psoralea corylifolia* DC.	*Cullen corylifolium* (L.)Medik.
1167	36119	*Desmodium* latifolium DC.	*Desmodium* velutinum (Willd.) DC.

1168	36323	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1169	36387	*Moghania semialata* (W.T.Aiton) Mukerjee	Flemingia macrophylla (Willd.) Merr.
1170	36518	*Atylosia crassa* Prain	*Cajanus crassus* (King) Maesen
1171	36520	Atylosia crassa Prain	*Cajanus crassus* (King) Maesen
1172	36708	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1173	36743	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1174	36803	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
1175	36808	*Ervum lens* Linn.	*Lens culinaris* Medik.
1176	36816	*Melilotus indica* (L.)All.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1177	36842	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
1178	36843	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
1179	36920	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1180	36922	*Saussurea lappa* L.	*Crotalaria retusa* L.
1181	37030	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1182	37082	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1183	37094	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1184	37118	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1185	37282	*Tephrosia pauciflora* Baker	*Tephrosia subtriflora* Baker
1186	37341	*Melilotus indica* (L.)All.	*Melilotus officinalis* (L.)Pall. ssp. alba (Medik.) H.Ohashi & Tateishi
1187	37365	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1188	37388	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1189	37522	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1190	37523	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1191	37537	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. *culinaris*
1192	37555	*Vicia macrocarpa* Bertol.	*Vicia sativa* L. ssp. *macrocarpa* (Moris)

			Arcang.
1193	37568	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1194	37656	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
1195	37894	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1196	37962	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1197	37966	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1198	37981	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1199	37986	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1200	37987	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1201	37988	*Crotalaria* striata DC.	*Crotalaria pallida* Aiton
1202	37990	*Roylea elegans* Wall.	*Senna occidentalis* (Linn.)Link
1203	38063	*Sida veronicifolia* Lamk.	*Sida cordata* (Burm.f.) Borss.Waalk
1204	38066	*Mimosa salvifolium* Linn.	*Mimosa pudica* L.
1205	38195	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1206	38500	*Malva crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1207	38516	*Calotropis cephalotes* Wall.	*Dendrolobium triangulare* Wallich
1208	38517	*Cuscuta floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
1209	38518	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1210	38519	*Calliandra houstonii* Benth.	*Calliandra houstoniana* (Mill.) Standl.
1211	38606	*Indigofera hamiltoni* Grah.	*Indigofera hamiltonii* Duthie & Prain
1212	38607	*Eclipta polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1213	38608	*Indigofera* pauciflora Baker	*Tephrosia subtriflora* Baker
1214	38698	*Vicia lens* Linn.	*Lens culinaris* Medik.
1215	38702	*Acacia arabia* Willd.	*Acaciaotica* (L.)Delile
1216	38703	*Acacia arabica* Willd.	*Acaciaotica* (L.)Delile
1217	38750	*Lespedeza diffusum* DC.	*Desmodium laxiflorum* DC.

1218	38752	*Desmodium* diffusum DC.	*Desmodium laxiflorum* DC.
1219	38760	*Datisca sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1220	38821	*Trifolium diffusa* Linn.	*Trifolium repens* L.
1221	38826	*Anaphalis nubigena* (L.) DC.	*Desmodium gangeticum* (L.)DC.
1222	38906	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1223	38926	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1224	39002	*Desmodium* cephalotes Wall.	*Dendrolobium triangulare* Wallich
1225	39010	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1226	39011	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1227	39021	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1228	39024	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1229	39025	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1230	39027	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1231	39104	*Glycine hispida* (Moench) Maxim.	*Glycine max* (L.)Merr.
1232	39116	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
1233	39159	*Phaseolus radiatus* Linn.	*Vigna radiata* (L.) R.Wilczek
1234	39160	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
1235	39163	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
1236	39169	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
1237	39170	*Vicia macrocarpa* Bertol.	*Vicia sativa* L.
1238	39188	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1239	39200	*Prosopis spicigera* Linn.	*Prosopis cineraria* (L.)Druce
1240	39246	*Lippia geminata* H.B.K.	*Medicago sativa* L.
1241	39314	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1242	39342	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don

1243	39362	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1244	39383	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1245	39392	*Cassiamarginata* Roxb.	*Cassia* roxburghii DC.
1246	39414	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1247	39422	*Xanthium strumarium* Linn	*Tephrosia villosa* (L.)Pers.
1248	39440	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1249	39445	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1250	39654	*Dolichos lablab* Roxb.	*Lablab purpureus* (L.)Sweet
1251	39718	*Caesalpinia sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1252	39720	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1253	39721	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1254	39723	*Desmodium* oxyphyllum DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill ssp. *oxyphyllum* (DC.) H.Ohashi & R.R.Mill
1255	40041	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1256	40054	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1257	40381	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1258	40395	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1259	40653	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1260	40668	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC.
1261	40709	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
1262	40710	*Bauhiniaretusa* Ham.	*Bauhinia* divaricata L.
1263	40758	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1264	40768	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1265	40855	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
1266	40856	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1267	40882	*Cassialaevigata* Willd.	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby

1268	40926	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1269	40937	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
1270	40977	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1271	41041	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
1272	41177	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
1273	41202	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1274	41315	*Desmodium diffusum* DC.	*Desmodiumlaxiflorum* DC.
1275	41316	*Millettia ovalifolia* Kurz.	*Millettiapeguensis* Ali
1276	41583	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1277	41696	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1278	41792	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1279	41941	*Vicia pallida* Turez.	*Vicia amurensis* Oett.
1280	42031	*Vigna catjang* (Burm.f.) Walp.	*Vigna unguiculata* (L.) Walp.
1281	42034	*Crotalaria fulva* Roxb.	*Crotalaria berteroana* DC.
1282	42063	*Cantharospermum scarabaeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1283	42195	*Desmodium oxyphyllum* DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill
1284	42488	*Cantharospermum scarabaeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1285	42541	*Cantharospermum scarabeoideum* (L.) Baill.	*Cajanus scarabaeoides* (L.) Thouars
1286	42589	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1287	42613	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
1288	42632	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1289	42666	*Dolichos lablab* Linn.	*Lablab purpureus* (L.)Sweet
1290	42667	*Trigonella polycerata* Linn.	*Medicago polyceratia* (L.) Trautv.
1291	42711	*Desmodium cephalotes* Wall.	*Dendrolobium triangulare* Wallich
1292	42931	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.

1293	42980	*Leucaenaglauca* Benth.	*Leucaenaleucocephala* (Lam.) de Wit
1294	43012	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1295	43169	*Indigofera oblongifolia* Forsk.	*Indigofera linifolia* (L.f.) Retz.
1296	43215	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1297	43414	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1298	43865	*Acacia paniculata* Willd.	*Acaciatenuifolia* (L.)Willd.
1299	43895	*Trigonella polycerata* Linn.	*Medicago polyceratia* (L.) Trautv.
1300	44182	*Cassialaevigata* Willd.	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby
1301	44183	*Cassialaevigata* Willd.	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby
1302	44335	*Indigofera enneaphylla* Linn.	*Indigofera linnaei* Ali
1303	44461	*Medicago denticulata* Willd.	*Medicagopolymorpha* L.
1304	44511	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1305	44517	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1306	44560	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1307	44572	*Justicia simplex* D. Don	*Cajanus cajan* (L.) Millsp.
1308	44581	*Indigofera tinctoria* Linn.	*Indigofera trita* L.
1309	44589	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1310	44602	*Indigofera enneaphylla* L.	*Indigofera* linnaei Ali
1311	44643	*Melilotus alba* Lamk.	*Melilotus albus* Medik.
1312	44808	*Derris uliginosa* (Willd.) Benth.	*Derris trifoliata* Lour.
1313	44908	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
1314	44970	*Shuteria vestita* Wight & Arn.	*Shuteria involucrata* (Wall.) Wight & Arn.
1315	45072	*Indigofera* enneaphylla L.	*Indigofera linnaei* Ali
1316	45075	*Trifolium minus* Sm.	*Trifolium dubium* Sibth.
1317	45080	*Tephrosia pauciflora* Baker	*Tephrosia subtriflora* Baker
1318	45084	*Cassialaevigata* Willd.	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby

1319	45086	*Shuteria vestita* Wight & Arn.	*Shuteria involucrata* (Wall.) Wight & Arn.
1320	45111	*Dichrostachys nutans* Benth.	*Dichrostachys cinerea* (L.)Wight & Arn. ex Wight
1321	45207	*Glycine hispida*	*Glycine max* (L.)Merr.
1322	45342	*Cassialaevigata* Willd.	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby
1323	45472	*Melilotus indica* (L.)All.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1324	45504	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1325	45584	*Mucuna prurita*	*Mucuna pruriens* (L.)DC.
1326	45743	*Glycine hispida*	*Glycine max* (L.)Merr.
1327	45904	*Derris uliginosa*	*Derris trifoliata* Lour.
1328	45916	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
1329	46060	*Vigna catjang*	*Vigna unguiculata* (L.) Walp.
1330	46242	*Astragalus candolleanus* Boiss.	*Astragalus latifolius* Lam.
1331	46245	*Argyrolobium flaccidium*	*Argyrolobium flaccidum* (Royle) Jaub. & Spach
1332	46252	*Crotalaria semperflorens* Vent.	*Crotalaria verrucosa* L.
1333	46256	*Ougeiniadalbergioides* Benth.	*Desmodium* oojeinense (Roxb.) H.Ohashi
1334	46259	*Indigofera vestita* Baker	*Indigofera trifoliata* Baker ssp. *trifoliata* L.
1335	46389	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1336	46504	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
1337	46513	*Psoralea corylifolia* Linn.	*Cullen corylifolium* (L.)Medik.
1338	46515	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1339	46516	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1340	46669	*Crotalaria usramoensis* Baker f.	*Crotalaria trichotoma* Bojer
1341	46735	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1342	46904	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1343	46906	*Crotalaria semperflorens* Vent.	*Crotalaria verrucosa* L.
1344	46909	*Caesalpinia nuga* Ait.	*Caesalpiniacrista* L.

1345	46911	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1346	46912	*Phaseolus aconitifolius* Roxb.	*Vigna aconitifolia* (Jacq.) Marechal
1347	46925	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1348	46926	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1349	47028	*Sesbania hypogoea* L.	*Arachis hypogaea* L.
1350	47039	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1351	47047	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1352	47052	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1353	47143	*Crotalaria semperflorens* Vent.	*Crotalaria verrucosa* L.
1354	47149	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1355	47260	*Desmodium polycarpum* (Poir.) DC.	*Desmodium* heterocarpon (L.)DC.
1356	47527	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1357	47769	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1358	47778	*Xylia dolabriformis* Benth.	*Xylia xylocarpa* (Roxb.) Taub.
1359	47793	*Trifolium minus* Smith	*Trifolium dubium* Sibth.
1360	47840	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1361	47865	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1362	47890	*Acaciapinnata* (L.) Willd.	*Acaciapennata* (L.)Willd.
1363	48001	*Peltophorum brasiliense* (L.) Urb.	*Caesalpinia violacea* (Mill.) Standl.
1364	48130	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
1365	48253	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1366	48375	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1367	48405	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1368	48538	*Cassia* tora Linn.	*Senna obtusifolia* (L.) H.S.Irwin & Barneby
1369	48539	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1370	48758	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1371	48761	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1372	48786	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp.

			alba(Medik.) H.Ohashi & Tateishi
1373	48794	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
1374	48988	*Berberis lycium* Royle	*Caesalpinia decapetala* (Roth) Alston
1375	48989	*Eurya sepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1376	48998	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
1377	48999	*Mussaenda floribundum* (D.Don) *G.Don*	*Desmodium multiflorum* DC.
1378	49005	*Indigofera gerardiana* Baker	*Indigofera* heterantha Brandis
1379	49035	*Desmodium gyrans* (L.f.) DC.	*Codariocalyxmotorius* (Houtt.) H.Ohashi
1380	49144	Ent*ada scandens* (L.) Benth.	Entada gigas (L.) Fawc. & Rendle
1381	49179	*Pithecellobium angulatum* Benth.	*Archidendron utile* (Chun & F.C.How) I.C.Nielsen.
1382	49200	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
1383	49299	*Albizia stipulata* B.Boivin	*Albizia chinensis* (Osbeck) Merr.
1384	49306	*Desmodium racemosum* (Thunb.) DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill
1385	49395	*Butea minor* Ham.	*Meizotropis buteiformis* Voigt
1386	49733	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1387	49745	*Galium verum* Linn.	*Tadehagi triquetrum* (L.) H.Ohashi
1388	49760	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1389	49769	*Moghaniasemialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
1390	49800	*Indigofera linifolia* (L.) DC.	*Desmodium triflorum* (L.)DC.
1391	49866	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1392	49890	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1393	50081	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1394	50287	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1395	50288	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi

1396	50289	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1397	50305	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1398	50307	Phaseolus trilobus (L.) Aiton	*Phaseolus montana* (L.) Aiton var. *lobata*
1399	50315	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1400	50318	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
1401	50361	*Lens esculenta* Moench	*Lens culinaris* Medik. ssp. *culinaris*
1402	50371	*Crotalaria* striata DC.	*Crotalaria* pallida Aiton
1403	50444	*Bauhinia* retusa Ham.	*Bauhinia* divaricata L.
1404	50452	Psoralea corylifolia L.	*Cullen corylifolium* (L.)Medik.
1405	50453	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1406	50482	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
1407	50483	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
1408	50490	*Clematis gauriana* Roxb.	*Bauhiniapurpurea* L.
1409	50499	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1410	50500	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1411	50615	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1412	50622	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1413	50684	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
1414	50815	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1415	50816	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1416	50849	*Bossiaea*	Bosea sp.
1417	50865	*Lathyrus luteus* Baker	*Lathyrus emodi* (Fritsch) Ali
1418	50896	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1419	51004	*Rothiatrifoliata* Pers.	*Rothia indica* (L.)Druce
1420	51006	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1421	51011	*Eleiotis sororia* (L.) DC.	*Eleiotismonophyllos* (Burm.f.)DC.

1422	51017	*Erythrina indica* Lam.	*Erythrina variegata* L.
1423	51038	*Prosopis spicigera* L.	*Prosopis cineraria* (L.)Druce
1424	51079	*Peltophorum inerme* Roxb.	*Peltophorum pterocarpum* (DC.) K.Heyne
1425	51085	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
1426	51153	*Desmodium rottleri* Baker	*Neocollettia wallichii* (Kurz)Schindl.
1427	51157	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
1428	51158	*Stylosanthes mucronata* Willd.	*Stylosanthes fruticosa* (Retz.) Alston
1429	51174	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1430	51385	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
1431	51404	*Moghania semialata* (W.T.Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr.
1432	51447	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1433	51449	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1434	51453	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1435	51471	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1436	51519	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1437	51652	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
1438	51653	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1439	51654	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1440	51655	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1441	51852	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
1442	52033	*Pueraria thomsoni* Benth.	*Pueraria montana* Benth. var. *chinensis* (Ohwi) Sanjappa & Pradeep
1443	52045	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
1444	52050	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis

1445	52100	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1446	52130	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1447	52199	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1448	52204	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1449	52227	*Sophora griffithii* Stocks	*Sophora mollis* (Royle) Baker ssp. griffithii
1450	52292	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1451	52330	*Atylosia cressa* Prain	*Cajanus* crassus (King) Maesen
1452	52331	*Smithia geminiflora* Roth	*Smithia conferta* Smith
1453	52429	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1454	52460	*Caesalpinianuga* (L.) Aiton	*Caesalpiniacrista* L.
1455	52484	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1456	52499	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1457	52505	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1458	52513	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1459	52521	*Acaciapinnata* (L.) Willd.	*Acaciapennata* (L.)Willd.
1460	52600	*Bauhiniaretusa* Ham.	*Bauhiniadivaricata* L.
1461	52690	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1462	52757	*Xylia dolabriformis* Benth.	*Xylia xylocarpa* (Roxb.) Taub.
1463	52794	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1464	53110	*Tephrosia purpurea* (L.) Pers	*Tephrosia maxima* . (L.) Pers
1465	53184	*Prosopis spicigera* L.	*Prosopis cineraria* (L.)Druce
1466	53266	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1467	53287	*Ougeiniadalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1468	53326	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1469	53376	*Plectranthus rugosus* Wall.	*Bauhiniavariegata* L.
1470	53407	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1471	53412	*Rhynchosia minima* Span.	*Rhynchosia rothii* Aitch.

1472	53413	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1473	53414	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1474	53415	*Indigofera hebepetala* Roxb.	*Indigofera cassioides* DC.
1475	53469	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1476	53524	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1477	53525	*Eleiotis sororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
1478	53560	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1479	53589	*Indigofera spicata* L.	*Indigofera linnaei* Ali
1480	53590	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1481	53610	*Caesalpinia bonducella* (L.) Fleming	*Caesalpinia bonduc* (L.) Roxb.
1482	53709	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1483	53711	*Rhynchosiasericea* Span.	*Rhynchosia rothii* Aitch.
1484	53714	*Bauhiniaretusa* Ham.	*Bauhinia divaricata* L.
1485	53715	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1486	53717	*Desmodium oxyphyllum* DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill ssp. *oxyphyllum* (DC.) H.Ohashi & R.R.Mill
1487	53723	*Spatholobus roxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1488	53724	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1489	54055	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
1490	54195	*Lotus corniculata* L.	*Lotus corniculatus* L.
1491	54261	*Spatholobusroxburghii* Benth.	*Spatholobus parviflorus* (DC.) Kuntze
1492	54357	*Indigofera suffruticosa* Merr.	*Indigofera tinctoria* L.
1493	54412	*Mucuna imbricata* (Roxb.) DC.	*Stizolobium imbricatum* (Roxb.)Kuntze
1494	54436	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
1495	54449	*Cassia* tomentosa L.f.	*Senna multiglandulosa* (Jacq.) H.S.Irwin & Barneby
1496	54495	*Moghania bracteata* (Roxb.) H.L.Li	*Flemingia strobilifera* (L.) W.T.Aiton
1497	54584	*Cassiaglauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin

			&Barneby
1498	54585	*Corola emeroides* Boiss.	*Hippocrepis emerus* (L.) Lassen
1499	54670	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1500	54917	*Lespedeza macrostyla* "Baker, p.p. non Miq."	*Campylotropis stenocarpa* (Klotzsch) Schindl.
1501	54918	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1502	54926	*Trigonella polycerata* L.	*Medicagopolyceratia* (L.) Trautv.
1503	54943	*Acaciaauriculaeformis* A.Cunn. ex Benth.	*Acaciaauriculiformis* Benth.
1504	55021	*Indigofera hebepetala* Roxb.	*Indigofera cassioides* DC.
1505	55031	*Cassia*nodosa Roxb.	Cassia javanica Roxb. ssp. nodosa (Roxb.) K.Larsen & S.S.Larsen
1506	55032	*Cassianodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
1507	55080	*Mucuna imbricata* (Roxb.) DC.	*Stizolobium imbricatum* (Roxb.)Kuntze
1508	55082	*Mucuna cochinchinensis* (Lour.) A.Chev.	*Mucuna pruriens* (L.)DC.
1509	55097	*Dalbergia ramosa* Roxb.	*Dalbergia rimosa* Roxb.
1510	55123	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1511	55166	*Mezoneuron cucullatum* (Roxb.) Wight & Arn.	*Caesalpiniacucullata* Roxb.
1512	55200	*Neptunia floridana* Small	*Neptunia pubescens* Benth.
1513	55255	*Desmodium* cephalotus Wall.	*Dendrolobium triangulare* Wallich ssp. *triangulare* (Retz.) Schindl.
1514	55390	*Crotalaria semperflorens* Vent.	*Crotalaria verrucosa* L.
1515	55400	*Desmodiumparvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1516	55418	*Cassialaevigata* Willd.	*Sennaseptemtrionalis* (Viv.) H.S.Irwin & Barneby
1517	55425	*Crotalaria mucronata* Desv.	*Crotalaria pallida* Aiton
1518	55521	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1519	55632	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen

1520	55641	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
1521	55642	*Atylosia platycarpa* Benth.	*Cajanus platycarpus* (Benth.) Maesen
1522	55680	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1523	55701	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1524	55786	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1525	55847	*Dalbergia* tamarindifolia Roxb.	*Dalbergia pinnata* (Lour.) Prain
1526	55959	*Cassia emarginata* L.	*Senna bicapsularis* Roxb.
1527	55973	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1528	55981	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1529	55985	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1530	55987	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1531	56021	*Trigonella polycerata* L.	*Medicago polyceratia* (L.) Trautv.
1532	56151	*Pithecellobium angulatum* Benth.	*Archidendron clypearia* (Jack) I.C.Nielsen
1533	56167	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1534	56282	*Cicer arientinium* L.	*Cicer arietinum* L.
1535	56295	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1536	56351	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1537	56367	*Cassia hybrida* Ten.	*Senna floribunda* (Cav.) H.S.Irwin & Barneby
1538	56382	*Crotalaria* sericea Retz.	*Crotalaria spectabilis* Roth
1539	56465	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1540	56471	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1541	56979	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1542	58242	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1543	58844	*Achyranthes spicigera* L.	*Prosopis cineraria* (L.)Druce
1544	58897	*Stylosanthes mucronata* Willd.	*Stylosanthes fruticosa* (Retz.) *Alston*
1545	58903	*Phaseolus trilobus* Ait.	*Vigna montana* (L.) Verdc. var. *lobata*

1546	58910	*Butea frondosa* Roxb.	*Butea monosperma* (Lam.) Taub.
1547	59045	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1548	59046	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1549	59047	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1550	59048	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1551	59136	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers.
1552	59137	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1553	59143	*Lespedeza cuneata*	*Lespedeza juncea* (L.f.) Pers.
1554	59163	*Lespedeza* S Turcz.	*Lespedeza sp*. Turcz.
1555	59170	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. sericea (Thunb.) Lace & Hauech
1556	59210	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1557	59313	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1558	59323	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1559	59351	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1560	59354	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1561	59363	*Cassiaglauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
1562	59365	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1563	59366	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1564	59492	*Cicer arientinium* L.	*Cicer arietinum* L.
1565	59641	*Mimosa spegazzinii* Pirotta	*Mimosa polycarpa* Pirotta var. *spegazzinii* Burkart
1566	59796	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1567	59804	*Dalbergia tamarindifolia* Roxb.	*Dalbergia pinnata* (Lour.) Prain

1568	59811	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
1569	59844	*Rhynchosia sericea* Span.	*Rhynchosia rothii* Aitch.
1570	59851	*Acacia auriculaeformis* A.Cunn. ex Benth.	*Acaciaauriculiformis* Benth.
1571	59866	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1572	59902	*Pterolobium indicum* A. Rich.	*Pterolobium hexapetalum* (Roth) Santapau & Wagh
1573	59956	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1574	59960	*Cassia coluteoides* Collad.	*Senna pendula* Collad. var. *glabrata*
1575	59983	*Uraria lagopoides* (L.) DC.	*Uraria lagopodoides* (L.)DC.
1576	60012	*Acacia armata* R.Br.	*Acacia paradoxa* (DC.) H.Ohashi & R.R.Mill
1577	60251	*Acaciasp*	*Acacia* sp.
1578	60264	*Gynura procumbens*	*Cassia phyllodinea* R.Br.
1579	60266	*Acacia nepalensis* Heyne	*Acacia tortilis* (Forssk.) Hayne
1580	60281	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1581	60288	*Cassia hybrida* Ten.	*Senna floribunda* (Cav.) H.S.Irwin & Barneby
1582	60306	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
1583	60368	*Acacia diepanolobium*	*Acacia drepanolobium* Sjostedt
1584	60416	*Cytisus congestus*	*Genista microphylla* DC.
1585	60444	*Dalbergia tamarindifolia* Roxb.	*Dalbergia pinnata* (Lour.) Prain
1586	60459	*Desmodium floribundum* (D.Don) G.Don	*Desmodium multiflorum* DC.
1587	60466	*Ougeinia dalbergioides* Benth.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1588	60583	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
1589	60661	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1590	60700	*Lupinus hirsutus* L.	*Lupinus micranthus* Guss.
1591	60756	*Dalbergia hipulaceae* Roxb.	*Dalbergia stipulacea* Roxb.
1592	61203	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.

1593	61261	*Glycine tomentosa* Benth.	*Glycine tomentella* Hayata
1594	61540	*Cassia hybrida* Ten.	*Senna floribunda* (Cav.) H.S.Irwin & Barneby
1595	61639	*Dalbergia* tamarindifolia Roxb.	*Dalbergia pinnata* (Lour.) Prain
1596	61782	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1597	61783	*Sesbania paludosa* Prain	*Sesbania javanica* (Blume) Miq.
1598	61838	*Arachniodes*	*Arachniodes sp.*
1599	61902	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1600	61903	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1601	62028	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1602	62177	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1603	62384	*Ervum lens* L.	*Lens culinaris* Medik. ssp. *culinaris*
1604	62385	*Ervum lens* L.	*Lens culinaris* Medik. ssp. *culinaris*
1605	62386	*Ervum lens* L.	*Lens culinaris* Medik. ssp. *culinaris*
1606	62387	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1607	62388	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1608	62392	*Cicer arientinium* L.	*Cicer arietinum* L.
1609	62397	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1610	62399	*Ervum lens* L.	*Lens culinaris* Medik. ssp. *culinaris*
1611	62463	*Acacia pinnata* (L.) Willd.	*Acacia pennata* (L.)Willd.
1612	62574	*Bauhiniaracemosa* Lamk.	*Bauhinia tomentosa* L.
1613	62618	*Dalbergia paniculata* Roxb.	*Dalbergia lanceolaria* L.f. ssp. *paniculata* (Roxb.) Thoth.
1614	62619	*Holarrhena antidysenterica* Wall.	*Desmodium heterocarpon* (L.)DC.
1615	62628	*Lonicera sempervirens* Linn.	*Indigofera heterantha* Brandis
1616	62838	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
1617	62912	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi

1618	62913	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1619	62915	*Phaseolus trilobatus* (L.) Schreb.	*Vigna trilobata* (L.) Verdc.
1620	63057	*Astragalus goniatus* Nutt.	*Astragalus danicus* Nutt. var. *dasyglottis* (DC.) B.Boivin
1621	63085	*Kennedia*	*Kennedia sp.*
1622	63086	*Hardenbergia monophylla* Benth	*Hardenbergia violacea* (Schneev.) Stearn
1623	63153	Medicago denticulata Willd.	*Medicago polymorpha* L.
1624	63186	*Peltophorum ferrugineum* (Decne.) Benth.	*Peltophorum pterocarpum* (DC.) K.Heyne
1625	63296	*Albizia lucida* (Roxb.) Benth.	*Albizia lucidior* (Steud.) I.C.Nielsen
1626	63583	*Albizia* stipulata B.Boivin	*Albizia* chinensis (Osbeck) Merr.
1627	63702	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1628	63728	*Cassia aspera* Elliott	*Chamaecristanictitans* Elliott var. *aspera*
1629	63783	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
1630	63784	*Cassia hybrida* Ten.	*Senna floribunda* (Cav.) H.S.Irwin & Barneby
1631	63786	*Cassia tora* Linn.	*Senna obtusifolia* (L.) H.S.Irwin & Barneby
1632	63790	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1633	63869	*Uraria lagopoides* (L.) DC.	*Uraria lagopodoides* (L.)DC.
1634	63943	*Argyreia speciosa* (Burm.f.)	*Argyreia nervosa* (Burm. f.) Bojer
1635	63981	*Cassia glauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
1636	64029	*Canavalia lanaiensis* Degener & Degener	*Canavalia pubescens* Hook. & Arn.
1637	64136	*Trigonella corniculata* (L.) L.	*Trigonella balansae* Boiss. & Reut.
1638	64137	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1639	64156	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
1640	64220	*Cassia hybrida* Ten.	*Senna floribunda* (Cav.) H.S.Irwin & Barneby
1641	64287	*Indigofera enneaphylla* L.	*Indigofera* linnaei Ali

1642	64445	*Desmodium sambuense* (D.Don) DC.	*Desmodium multiflorum* DC.
1643	64446	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1644	64478	*Rhynchosia lewtonii* Vail	Rhynchosia difformis (Elliott) DC.
1645	64643	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1646	64689	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1647	64734	*Acaciajacquemonti* Benth.	*Acaciajacquemontii* Benth.
1648	64737	*Caesalpiniadecapetata* (Roth) Alston	*Caesalpiniadecapetala* (Roth) Alston
1649	64813	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1650	64974	*Vicia pallida* Turez.	*Vicia amurensis* Oett.
1651	65064	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1652	65065	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1653	65234	*Desmodium sambuense* (D.Don) DC.	*Desmodium multiflorum* DC.
1654	65239	*Desmodium tiliaefolium* G.Don	*Desmodium elegans* DC.
1655	65305	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1656	65328	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1657	65572	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
1658	65575	*Bauhinia purpurea* Linn.	*Bauhinia variegata* L.
1659	65590	*Cassia marginata* Roxb.	*Cassia roxburghii* DC.
1660	65603	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1661	65613	*Indigofera linnaei* Ali	*Indigofera sessiliflora* DC.
1662	65615	*Phaseolus calcaratus* Roxb.	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
1663	65622	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1664	65629	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1665	65630	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
1666	65634	*Wendlandia exserta* D.C.	*Indigofera tinctoria* L.
1667	65636	*Cassia nodosa* Ham.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
1668	65637	*Acaciaauriculaeformis* A.Cunn. ex	*Acacia auriculiformis* Benth.

		Benth.	
1669	65703	*Vigna sinensis* (L.)Savier.Hassk.	*Vigna unguiculata* (L.) Walp.
1670	65707	*Phaseolus aureus* Roxb.	*Vigna radiata* (L.) R.Wilczek
1671	65709	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1672	65717	*Indigofera* dosua D.Don.	*Indigofera* stachyodes Lindley
1673	65763	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1674	65776	*Desmodium oxyphyllum* DC.	*Hylodesmum podocarpum* (DC.) H.Ohashi & R.R.Mill ssp. *oxyphyllum* (DC.) H.Ohashi & R.R.Mill
1675	65784	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1676	65846	*Lupinus*	*Lupinus sp.*
1677	66061	*Phaseolus aconitifolius* Jacq.	*Vigna aconitifolia* (Jacq.) Marechal
1678	66172	*Indigofera*	*Indigofera* sp.
1679	66225	*Bauhinia retusa* Ham.	*Bauhinia divaricata* L.
1680	66229	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1681	66230	*Atylosia volubilis* (Blanco)Gamble	*Cajanus crassus* (King) Maesen
1682	66361	*Phaseolus pubescens* Blume	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
1683	66362	*Phaseolus pubescens* Blume	*Vigna* umbellata (Thunb.) Ohwi & H.Ohashi
1684	66409	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1685	66483	*Flemingia chapper* Buch. Ham.	*Flemingia chappar* Benth.
1686	66589	*Elaeodendron roxburghii* Wight. & Arn.	*Crotalaria prostrata* Willd.
1687	66593	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1688	66624	*Atylosia volubilis* (Blanco) Gamble	*Cajanus crassus* (King) Maesen
1689	66694	*Atylosia volubilis* (Blanco) Gamble	*Cajanus crassus* (King) Maesen
1690	66779	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
1691	66810	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1692	67012	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1693	67013	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet

1694	67059	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1695	67084	*Butea parviflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
1696	67105	*Butea parviflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
1697	67259	*Mucuna imbricata* (Roxb.) DC.	*Stizolobium imbricatum* (Roxb.)Kuntze
1698	67374	*Bauhinia retusa* Ham.	*Bauhinia divaricata* L.
1699	67396	*Gentiana retusa* L.	*Bauhinia divaricata* L.
1700	67401	*Bauhinia retusa* Ham.	*Bauhinia divaricata* L.
1701	67446	*Butea*	*Butea sp.*
1702	67634	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
1703	67640	*Dalbergia sympathetica* Nimmo	*Dalbergia horrida* Nimmo var. *horrida* (Dennst.) Mabb.
1704	67988	*Cassia glauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
1705	67991	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1706	68019	*Cassia glauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
1707	68020	*Cassia glauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
1708	68021	*Cassia australis* Vell.	*Senna appendiculata* Vell.
1709	68022	*Cassia biflora* L.	*Senna pallida* L.
1710	68023	*Cassia angustifolia* M.Vahl	*Senna alexandrina* Miller
1711	68026	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
1712	68192	*Genista glaberrima* Novopokr.	*Genista suanica* Schisch.
1713	68196	*Cicer kopetdaghense* Lincz.	*Cicer* tragacanthoides Jaub. & Spach
1714	68399	*Onobrychis lipskyi* Korovin	*Onobrychis verae* Sirj.
1715	68708	*Caesalpiniasepiaria* Roxb.	*Caesalpinia decapetala* (Roth) Alston
1716	68753	*Pachyrhizus angulatus* DC.	*Pachyrhizus erosus* (L.)Urb.
1717	68759	*Pachyrhizus angulatus* DC.	*Pachyrhizus erosus* (L.)Urb.
1718	68764	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen

1719	68765	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
1720	68773	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
1721	68843	*Dalbergia paniculata* Roxb.	*Dalbergia lanceolaria* L.f. ssp. *paniculata* (Roxb.) Thoth.
1722	68873	*Phyla germinata* H.B. & K.	*Cullen corylifolium* (L.)Medik.
1723	68874	*Phaseolus trilobus* (L.) Aiton	*Pueraria montana* (L.) Aiton var. *lobata* (Willd.) Sanjappa & Pradeep
1724	68946	*Tephrosia pauciflora* Baker	*Tephrosia subtriflora* Baker
1725	68981	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1726	69012	*Eleiotis monophylla* (Burm.f.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
1727	69069	*Dolichos falcata* Klein	*Dolichos trilobus* Klein ssp. trilobus L.
1728	69076	*Indigofera pulchella* Roxb.	*Indigofera* cassioides DC.
1729	69080	*Cytisus monspessulanus* L.	*Genista monspessulana* L.
1730	69113	*Pterolobium indicum* A.Rich.	*Pterolobium hexapetalum* (Roth) Santapau & Wagh
1731	69117	*Acacia latronum* (L.f.) Willd.	*Acacia horrida* (L.) Willd.
1732	69123	*Entada pursaetha* DC.	*Entada rheedii* Spreng.
1733	69128	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1734	69129	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1735	69132	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1736	69133	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1737	69139	*Millettia ovalifolia* Kurz	*Millettia peguensis* Ali
1738	69216	*Dalbergia paniculata* Roxb.	*Dalbergia lanceolaria* L.f. ssp. paniculata (Roxb.) Thoth.
1739	69502	*Cocculus hirsutus* (Lam.) Taub.	*Butea monosperma* (Lam.) Taub.
1740	69508	*Bauhinia racemosa* Lamk.	*Bauhinia malabarica* Roxb.
1741	69568	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1742	69713	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1743	69714	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.

1744	69715	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1745	69716	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1746	69799	*Atylosia crassa* Prain	*Cajanus crassus* (King) Maesen
1747	69800	*Dalbergia paniculata* Roxb.	*Dalbergia lanceolaria* L.f. ssp. *paniculata* (Roxb.) Thoth.
1748	69805	*Entada pursaetha* DC.	*Entada rheedii* Spreng.
1749	69822	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1750	69885	*Cassia obtusa* Roxb.	*Senna italica* Mill.
1751	69888	*Bauhinia recemosa* Lam.	*Bauhinia racemosa* Lam.
1752	69909	*Dalbergia paniculata* Roxb.	*Dalbergia lanceolaria* L.f. ssp. *paniculata* (Roxb.) Thoth.
1753	69933	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1754	69944	*Acacia columnaris* Craib	*Acacia caesia* (L.)Willd.
1755	69945	*Inga bigemina* (L.) Willd.	*Archidendron bigeminum* (L.)Willd.
1756	69946	*Pterolobium indicum* A.Rich.	*Pterolobium hexapetalum* (Roth) Santapau & Wagh
1757	69947	*Albizia stipulata* B.Boivin	*Albizia chinensis* (Osbeck) Merr.
1758	69974	*Saraca cauliflora*	*Saraca thaipingensis* Prain
1759	69976	*Myroxylon toluiferum* H.B.K.	*Myroxylon balsamum* (L.) Harms
1760	70003	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1761	70006	*Acacia sundra* (Roxb.) DC.	*Acacia chundra* (Rottler) Willd.
1762	70021	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1763	70030	*Canavalia maritima* (Aubl.) Thouars	*Canavalia rosea* (Sw.) DC.
1764	70033	*Mucuna imbricata* (Roxb.) DC.	*Stizolobium imbricatum* (Roxb.)Kuntze
1765	70040	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1766	70068	*Dalbergia acaciifolia* Dalzell	*Dalbergia pinnata* (Lour.) Prain var. *acaciifolia* (Dalzell) Thoth.
1767	70079	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1768	70083	*Acacia latronum* (L.f.) Willd.	*Acacia horrida* (L.) Willd.
1769	70089	*Acacia suma* (Roxb.) Kurz ex Brandis	*Acacia polyacantha* Willd.

1770	70091	*Phaseolus dalzellii* T.Cooke	*Vigna dalzelliana* (Kuntze)Verdc.
1771	70138	*Bauhinia variegata* L.	*Bauhinia purpurea* L.
1772	70139	*Dioscorea variegata* L.	*Bauhinia purpurea* L.
1773	70247	*Tephrosia pauciflora* Baker	*Tephrosia subtriflora* Baker
1774	70250	*Eleiotis sororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
1775	70280	*Eleiotis monophylla* (Burm.f.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
1776	70331	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1777	70374	*Galactia villosa* W. & A.	*Galactia striata* Wight & Arnott var. *villosa*
1778	70408	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1779	70554	*Aeschynanthus ramosissima* Wall.	*Aeschynanthus parviflorus* (D.Don) Spreng..
1780	70638	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1781	70639	*Urariaalopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1782	70685	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1783	70798	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1784	70820	*Desmodium parvifolium* DC.	*Desmodium microphyllum* (Thunb.) DC.
1785	70925	*Cassia laevigata* Willd.	*Senna septemtrionalis* (Viv.) H.S.Irwin & Barneby
1786	71027	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1787	71131	*Caragana crassicaulis* Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1788	71185	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1789	71193	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1790	71195	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1791	71239	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1792	71266	*Pongamia glabra* Vent.	*Pongamia pinnata* (L.) Pierre
1793	71366	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1794	71367	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1795	71368	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1796	71391	*Medicago lupulina* Linn.	*Melilotus indicus* (L.) All.

1797	71442	*Indigofera enneaphylla* L.	*Indigofera* linnaei Ali
1798	71613	*Caesalpinianuga* (L.) Aiton	*Caesalpiniacrista* L.
1799	71614	*Caesalpinianuga* (L.) Aiton	*Caesalpiniacrista* L.
1800	71711	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1801	71733	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
1802	71757	*Vicia variegata* Willd.	*Vicia canescens* Wilid.
1803	71842	*Alysicarpus monifer* (L.) DC.	*Alysicarpus moifer* (L.)DC.
1804	71868	*Bauhinia purpurea* L.	*Bauhiniavariegata* L.
1805	71920	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
1806	72002	*Caragana crassicaulis* Benth. ex Baker	*Spongiocarpella nubigena* (D.Don) Yakovlev
1807	72003	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1808	72004	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1809	72031	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
1810	72076	*Crotalaria densiflora* De Wild.	*Crotalaria cuspidata* Taub.
1811	72114	*Silene conoidea* Linn.	*Crotalaria verrucosa* L.
1812	72128	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1813	72194	*Calliandra marginata* Benth.	*Zapoteca formosa* (Kunth) H.M.Hern.
1814	72260	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1815	72261	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1816	72268	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1817	72269	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1818	72270	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1819	72321	*Cassiaglauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
1820	72323	*Indigofera pulchella* Roxb.	*Indigofera cassioides* DC.
1821	72375	*Acaciakauaiensis* Hillebr.	*Acaciakoa* A.Gray
1822	72391	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.

1823	72412	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1824	72430	*Acacia sowdenii* Maiden	*Acaciapapyrocarpa* Benth.
1825	72724	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1826	72928	*Leucaena glauca* Benth.	*Leucaena leucocephala* (Lam.) de Wit
1827	73014	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
1828	73202	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1829	73357	*Arachio hypogea* L.	*Arachis hypogaea* L.
1830	73436	*Sophora glauca* DC.	*Sophora velutina* Lindley
1831	73578	*Acacia suma* (Roxb.) Kurz ex Brandis	*Acacia polyacantha* Willd.
1832	73734	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1833	73735	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1834	73885	*Clitoria ternatia* L.	*Clitoria ternatea* L.
1835	73959	*Caesalpiniasepiaria* Roxb.	*Caesalpinia decapetala* (Roth) Alston
1836	73969	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
1837	74233	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
1838	74340	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
1839	74518	*Bauhiniasp.* L.	*Bauhiniapurpurea* L.
1840	74519	*Arachis hypogea* L.	*Arachis hypogaea* L.
1841	74575	*Butea parviflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
1842	74576	*Butea parviflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
1843	74577	*Butea parbiflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
1844	74777	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1845	74783	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
1846	75436	*Ougeinia oogeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1847	75438	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi
1848	75439	*Melilotus alba* Ledeb.	*Melilotus officinalis* (L.)Pall. ssp. *alba* (Medik.) H.Ohashi & Tateishi

1849	75851	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1850	75855	*Indigofera*	*Indigofera sp.*
1851	75856	*Indigofera*	*Indigofera sp.*
1852	75934	*Indigofera* S L.	*Indigofera sp.*
1853	75935	*Indigofera* S L.	*Indigofera sp.*
1854	75938	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1855	75994	*Bauhiniarecemosa* Lam.	*Bauhinia racemosa* Lam.
1856	76001	*Caesalpiniadecapetata* (Roth) Alston	*Caesalpiniadecapetala* (Roth) Alston
1857	76002	*Caesalpiniadecapetata* (Roth) Alston	*Caesalpiniadecapetala* (Roth) Alston
1858	76003	*Caesalpiniadecapetata* (Roth) Alston	*Caesalpiniadecapetala* (Roth) Alston
1859	76067	*Bauhiniaretusa* Roxb.	*Bauhiniadivaricata* L.
1860	76551	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1861	76552	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1862	76553	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1863	76733	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1864	77004	*Flemingia nana* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1865	77005	*Flemingia nana* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1866	77421	*Pisum arvense* L.	*Pisum sativum* L.
1867	77431	*Uraria lagopoides* (L.) DC.	*Uraria lagopodoides* (L.)DC.
1868	77432	*Uraria lagopoides* (L.) DC.	*Uraria lagopodoides* (L.)DC.
1869	77433	*Uraria lagopoides* (L.) DC.	*Uraria lagopodoides* (L.)DC.
1870	77435	*Uraria lagopoides* (L.) DC.	*Uraria lagopodoides* (L.)DC.
1871	77489	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1872	77657	*Cicer arientinium* L.	*Cicer arietinum* L.
1873	77658	*Vigna*	*Vigna sp.*
1874	77763	*Atylosia scorbioides* (L.) Benth.	*Cajanus scarabaeoides* (L.) Thouars
1875	77764	*Atylosia scorbioides* (L.) Benth.	*Cajanus scarabaeoides* (L.) Thouars
1876	77874	*Cicer arientinium* L.	*Cicer arietinum* L.

1877	77875	*Cicer arientinium* L.	*Cicer arietinum* L.
1878	77956	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1879	77957	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1880	77958	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1881	77959	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1882	78241	*Pisum arvense* L.	*Pisum sativum* L.
1883	78242	*Pisum arvense* L.	*Pisum sativum* L.
1884	78245	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1885	78246	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1886	78567	*Bauhinia racemosa* Lam.	*Bauhiniamalabarica* Roxb.
1887	78570	*Bauhiniamalabarica* Roxb.	*Bauhiniapurpurea* L.
1888	78792	*Desmodium gyrans* (L.f.) DC.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1889	78793	*Desmodium gyrans* (L.f.) DC.	*Codariocalyxmotorius* (Houtt.) H.Ohashi
1890	78961	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1891	78962	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1892	79291	*Trigonella incisa* Benth.	*Medicago monantha* (C.A.Mey.) Trautv.
1893	79298	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1894	79496	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1895	79497	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1896	79498	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1897	79534	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1898	79942	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1899	79943	*Flemingia bracteata* (Roxb.) Wight	*Flemingia strobilifera* (L.) W.T.Aiton
1900	79955	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1901	79956	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1902	80161	*Albizia serpentina* Linn.	*Albizia lebbeck* (L.) Benth.
1903	80501	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
1904	80502	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.

1905	80514	*Flemingia nana* Roxb. ex Aiton	*Flemingia macrophylla* (Willd.) Merr. var. *nana*
1906	80518	*Desmodium motorium* (Houtt.)Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1907	80519	*Desmodiummotorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
1908	80524	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
1909	80525	*Crotalaria striata* DC.	*Crotalaria* pallida Aiton
1910	80556	*Acaciaconcina* (Willd.) DC.	*Acacia concinna* (Willd.) DC.
1911	80575	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1912	80576	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1913	80580	*Macrotyloma uniflorum* (Lam.)Verdc.	*Vigna unguiculata* (L.) Walp. ssp. *unguiculata*
1914	80581	*Dolichos biflorus* L.	*Vigna unguiculata* (L.) Walp. ssp. *unguiculata*
1915	80583	*Moghania nana* (Roxb.) Mukerjee	*Flemingia macrophylla* (Willd.) Merr. var. *nana*
1916	80584	*Moghania nana* (Roxb. ex Aiton) Mukerjee	*Flemingia macrophylla* (Willd.) Merr. var. nana
1917	80892	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1918	81005	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1919	81006	*Indigofera trifoliata* Linn.	*Leucaena leucocephala* (Lam.) de Wit
1920	81043	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
1921	81181	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1922	81182	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1923	81183	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1924	81240	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
1925	81276	*Prosopis spicigera* L.	*Prosopis cineraria* (L.)Druce
1926	81277	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1927	81278	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1928	81410	*Sesbania aculeata* (Willd.) Pers.	*Sesbania bispinosa* (Jacq.) W.Wight
1929	81418	*Medicago denticulata* Willd.	*Medicago polymorpha* L.

1930	81486	*Bauhinia variegata* Linn.	*Bauhinia purpurea* L.
1931	81503	*Melilotus alba* Medik. ex Desr.	*Melilotus officinalis* (L.)Pall. var. *alba* (Medik.) H.Ohashi & Tateishi
1932	81505	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1933	81531	*Caesalpiniasepiara* Roxb.	*Caesalpinia decapetala* (Roth) Alston
1934	81532	*Albizia lucida* (Roxb.) Benth.	*Albizia lucidior* (Steud.) I.C.Nielsen
1935	81671	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1936	81672	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
1937	82217	*Chorisema Image* S	*Chorizema sp.*
1938	82246	*Crotalaria mucronata* Desv.	*Crotalaria pallida* Aiton
1939	82247	*Crotalaria mucronata* Desv.	*Crotalaria pallida* Aiton
1940	82288	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1941	82289	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1942	82363	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1943	82544	*Vigna trifoliata* L.	*Vigna trilobata* (L.) Verdc.
1944	82619	*Mucuna prurita* Hk.	*Mucuna pruriens* (L.)DC.
1945	82620	*Mucuna prurita* (L.) Hook.	*Mucuna pruriens* (L.)DC.
1946	82778	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
1947	82779	*Dolichos lablab* L.	*Lablab purpureus* (L.)Sweet
1948	82838	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1949	82922	*Canavalia virosa* (Roxb.) Wight & Arn.	*Canavalia cathartica* Thouars
1950	83054	*Cicer arientinium* L.	*Cicer arietinum* L.
1951	83055	*Cicer arientinium* L.	*Cicer arietinum* L.
1952	83160	*Indigofera* enneaphylla L.	*Indigofera linnaei Ali*
1953	83168	*Desmodium diffusum* DC.	*Desmodium laxiflorum DC.*
1954	83169	*Desmodium diffusum* DC.	*Desmodium laxiflorum DC.*
1955	83308	*Flemingia semialata* Roxb.	*Flemingia macrophylla (Willd.) Merr.*
1956	83319	*Pithecellobium*	*Archidendron clypearia (Jack) I.C.Nielsen*

		heterophyllum(Roxb.)Macbr.	
1957	83330	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. cuneata (Dum.Cours.) G.Don
1958	83757	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre
1959	83758	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre
1960	83983	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1961	83984	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1962	84568	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre
1963	84569	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre
1964	84673	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1965	84674	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
1966	84677	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1967	84825	*Melilotus indica* L.	*Medicago monantha* (C.A.Mey.) Trautv.
1968	84835	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.
1969	84839	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
1970	84960	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1971	84961	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1972	85028	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
1973	85029	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
1974	85105	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1975	85106	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
1976	86187	*Desmodium heterocarpum* (L.) DC.	*Desmodium heterocarpon* (L.)DC.
1977	86380	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1978	86381	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1979	86382	*Lespedeza cuneata* (Dum.Cours.) G.Don	*Lespedeza juncea* (L.f.) Pers. var. *sericea* (Thunb.) Lace & Hauech
1980	86383	*Lespedeza cuneata* (Dum.Cours.)	*Lespedeza juncea* (L.f.) Pers. var.

		G.Don	*sericea*(Thunb.) Lace & Hauech
1981	86387	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1982	86388	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1983	86389	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
1984	86787	*Vigna trifoliata* Linn.	*Vigna trilobata* (L.) Verdc.
1985	86788	*Vigna trifoliata* Linn.	*Vigna trilobata* (L.) Verdc.
1986	86828	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1987	86829	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1988	86830	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1989	86862	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1990	86863	*Indigofera enneaphylla* L.	*Indigofera linnaei* Ali
1991	87149	*Bossiaea Image* S Hook.f.	*Bossiaea sp.*
1992	87172	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
1993	87420	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1994	87421	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
1995	87792	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1996	87808	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
1997	87898	*Caesalpinia sepiaria* Roxb.	*Caesalpinia decapetala* (Roth) Alston
1998	87941	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
1999	87942	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
2000	87943	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
2001	88450	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
2002	88451	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
2003	88459	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
2004	88460	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
2005	89241	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
2006	89242	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis

2007	89243	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
2008	89275	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
2009	89276	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
2010	89339	*Clitoria ternata* L.	*Clitoria ternatea* L.
2011	89340	*Clitoria ternata* L.	*Clitoria ternatea* L.
2012	89526	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
2013	89527	*Sesbania aegyptiaca* (Poir.) Pers.	*Sesbania sesban* (L.)Merr.
2014	89766	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
2015	89772	*Cajanus scabrabaeoides* (L.) Thouars	*Cajanus scarabaeoides* (L.) Thouars
2016	89773	*Cajanus scabrabaeoides* (L.) Thouars	*Cajanus scarabaeoides* (L.) Thouars
2017	89776	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
2018	89777	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
2019	89781	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
2020	89782	*Indigofera gerardiana* Baker	*Indigofera heterantha* Brandis
2021	89960	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
2022	89961	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
2023	90009	*Butea parviflora* Roxb.	*Spatholobus parviflorus* (DC.) Kuntze
2024	90015	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopodoides* (L.)DC.
2025	90017	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
2026	90058	*Atylosia volubilis* (Blanco) Gamble	*Cajanus crassus* (King) Maesen
2027	90155	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
2028	90156	*Caesalpiniasepiaria* Roxb.	*Caesalpiniadecapetala* (Roth) Alston
2029	90187	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
2030	90188	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
2031	90189	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don

2032	90190	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
2033	90787	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2034	90829	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyxmotorius* (Houtt.) H.Ohashi
2035	91043	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2036	91044	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2037	91045	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2038	91099	*Pedicularis punctata* L.	*Senna tora* Roxb.
2039	91104	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
2040	91105	*Flemingia semialata* Roxb.	*Flemingia macrophylla* (Willd.) Merr.
2041	91131	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
2042	91132	*Dolichos uniflorus* Lamk.	*Macrotyloma uniflorum* (Lam.) Verdc.
2043	91165	*Desmodium macrophyllum* Desv.	*Desmodium laxiflorum* DC.
2044	91244	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2045	91249	*Crotalaria sericea* Retz.	*Crotalaria spectabilis* Roth
2046	91260	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
2047	91261	*Desmodium motorium* (Houtt.) Merr.	*Codariocalyx motorius* (Houtt.) H.Ohashi
2048	91299	*Pedicularis*	*Pedicularis sp.*
2049	91457	*Campylotropis*	*Campylotropis sp.*
2050	91458	*Campylotropis*	*Campylotropis sp.*
2051	91502	*Desmodium*	*Desmodium sp.*
2052	91676	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
2053	91699	*Ougeinia oojeinensis* (Roxb.) Hochr.	*Desmodium oojeinense* (Roxb.) H.Ohashi
2054	91701	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
2055	91702	*Cassia nodosa* Roxb.	*Cassia javanica* Roxb. ssp. *nodosa* (Roxb.) K.Larsen & S.S.Larsen
2056	91808	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre
2057	91809	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre

2058	91810	*Derris indica* (Lam.) Benn.	*Pongamia pinnata* (L.) Pierre
2059	91851	*Abarema elliptica* (Bl.)Kosterm.	*Archidendron ellipticum* (Blanco) I.C.Nielsen.
2060	91852	*Abarema elliptica* (Blume) Kosterm.	*Archidendron ellipticum* (Blanco) I.C.Nielsen.
2061	92049	*Crotolaria calycina* Schrank	*Desmodium velutinum* (Willd.) DC.
2062	92376	*Acacia*	*Acacia sp.* (L.f.) Willd.
2063	92470	*Cassia angustifolia* M.Vahl	*Senna alexandrina* Miller
2064	92473	*Eleiotis sororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
2065	92474	*Eleiotissororia* (L.) DC.	*Eleiotis monophyllos* (Burm.f.)DC.
2066	92479	*Cassia angustifolia* M.Vahl	*Senna alexandrina* Miller
2067	92677	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
2068	92678	*Uraria alopecuroides* (Roxb.) Wight	*Uraria lagopus* DC. var. *lagopus* DC.
2069	92753	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
2070	92756	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
2071	92757	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
2072	92758	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
2073	92760	*Uraria neglecta* Prain	*Uraria lagopus* DC. var. *neglecta* (Prain) H.Ohashi
2074	92786	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
2075	92787	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium* velutinum (Willd.) DC. ssp. *velutinum* (Willd.) DC.
2076	92801	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium* velutinum (Willd.) DC. ssp. *velutinum* (Willd.) DC.
2077	92802	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. *velutinum* (Willd.) DC.
2078	92915	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.
2079	92916	*Desmodium polycarpum* (Poir.) DC.	*Desmodium heterocarpon* (L.)DC.

2080	93548	*Lespedeza sericea* (Thunb.) Miq.	*Lespedeza cuneata* (Thunb.) Miq. var. *cuneata* (Dum.Cours.) G.Don
2081	93553	*Leucaena latisiliqua* (L.) Gillis & Stearn	*Lysiloma latisiliquum* (L.) Benth.
2082	93913	*Galactia Image S* Arn.	*Galactia sp.*
2083	93938	*Phaseolus radiatus* L.	*Vigna radiata* (L.) R.Wilczek
2084	93997	*Cassiaglauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
2085	94226	*Psoralea corylifolia* L.	*Cullen corylifolium* (L.)Medik.
2086	94231	*Indigofera*	*Indigofera* sp.
2087	94259	*Desmodium latifolium* (Ker. Gawl.) DC.	*Desmodium velutinum* (Willd.) DC. ssp. velutinum (Willd.) DC.
2088	94260	*Desmodium* latifolium (Ker. Gawl.) DC.	*Desmodium* velutinum (Willd.) DC. ssp. *velutinum* (Willd.) DC.
2089	94309	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
2090	94310	*Caesalpiniabonducella* (L.) Fleming	*Caesalpiniabonduc* (L.) Roxb.
2091	94647	*Nerium odorum* Soland.	*Crotalaria pallida* Aiton
2092	94649	*Holarrhena antidysentrica* Wall.	*Clitoria ternatea* L.
2093	95390	*Tephrosia*	*Tephrosia sp.*
2094	96670	*Albizia* mollis (Wall.) Boivin	*Albizia julibrissin* Durazz. var. *mollis* (Wall.) Benth.
2095	97217	*Cassia glauca* Lam.	*Senna sulfurea* (Collad.) H.S.Irwin & Barneby
2096	97408	*Astragalus* S Sirj.	*Astragalus* sp.
2097	97409	*Astragalus* S Sirj.	*Astragalus* sp.
2098	97410	*Astragalus* S Sirj.	*Astragalus* sp.
2099	97411	*Astragalus* S Sirj.	*Astragalus* sp.
2100	97412	*Astragalus* S Sirj.	*Astragalus* sp.
2101	97413	*Astragalus* S Sirj.	*Astragalus* sp.
2102	97414	*Astragalus* S Sirj.	*Astragalus* sp.
2103	97415	*Astragalus* S Sirj.	*Astragalus* sp.

2104	97416	*Astragalus* S Sirj.	*Astragalus* sp.
2105	97417	*Astragalus* S Sirj.	*Astragalus* sp.
2106	97418	*Astragalus* S Sirj.	*Astragalus* sp.
2107	97419	*Astragalus* S Sirj.	*Astragalus* sp.
2108	97421	*Astragalus* S L.B.Chaudhary & Z.H.Khan	*Astragalus* sp.
2109	97427	*Astragalus* S Grah. ex Benth.	*Astragalus* sp.
2110	97428	*Astragalus* S Grah. ex Benth.	*Astragalus* sp.
2111	97856	*Tephrosia*	*Tephrosia* sp.
2112	97965	*Desmodium diffusum* DC.	*Desmodium laxiflorum* DC.
2113	98371	*Acaciaauriculaeformis* Benth.	*Acaciaauriculiformis* Benth.
2114	98372	*Acaciaauriculaeformis* Benth.	*Acaciaauriculiformis* Benth.
2115	98373	*Acaciaauriculaeformis* Benth.	*Acaciaauriculiformis* Benth.
2116	100265	*Acaciacyanophylla* Lindl.	*Acaciasaligna* (Labill.) Wendl.
2117	100268	*Acaciadiscolor* (Andrews) Willd.	*Acaciaterminalis* (Salisb.) J.F.Macbr.
2118	100273	*Acaciadecipiens* R.Br.	*Acaciatruncata* Hoffmanns..
2119	100274	*Acaciadecipiens* (K.D.Koenig) R.Br.	*Acaciatruncata* Hoffmanns..
2120	100275	*Acaciacyanophylla* Linn.	*Acaciasaligna* (Labill.) Wendl.
2121	100281	*Acaciaarmata* R.Br.	*Acaciaparadoxa* (DC.) H.Ohashi & R.R.Mill
2122	100302	*Oxylobium capitatum* Benth.	*Nemcia capitata* (Benth.) Domin
2123	100303	*Oxylobium capitatum* Benth.	*Nemcia capitata* (Benth.) Domin
2124	100305	*Medicago denticulata* Willd.	*Medicago polymorpha* L.
2125	100319	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
2126	100337	*Clianthus formosus* (G.Don) Ford & Vickery	*Swainsona formosa* (G.Don) J.Thompson
2127	100352	*Oxylobium capitatum* Benth.	*Nemcia capitata* (Benth.) Domin
2128	100457	*Abauria kiahii* Kork	*Koompassia excelsa* (Becc.) Taub.
2129	100554	*Viminaria denudata* Sm.	*Viminaria juncea* Sm.
2130	100701	*Chamaecrista brachiata* Pollard	*Chamaecrista fasciculata* (Michx.) Greene

2131	100702	*Trifolium dubium* Smith.	*Medicago lupulina* L.
2132	100767	*Vicia calcarata* Desf.	*Vicia monantha* Retz.
2133	100827	*Brachysema lanceolatum* Meissner	*Brachysema celsianum* Lem..
2134	101155	*Hovea heterophylla* A.Cunn. ex Hook.	*Hovea heterophyla* A.Cunn. ex Hook
2135	101161	*Vicia angustifolia* L.	*Vicia sativa* L. (L.) Ehrh.
2136	101176	*Eutaxia* Schlecht.	*Eutaxia microphylla* (R.Br.) J.M.Black
2137	101210	*Lupinus hirsutus* L.	*Lupinus micranthus* Guss.
2138	101354	*Oxylobium acutum* (Lindl.) Benth.	*Nemcia acuta* (Benth.) Domin
2139	101409	*Acaciapinifolia* Benth.	*Acacia juncifolia* Benth.
2140	101435	*Hardenbergia monophylla* (Vent.) Benth.	*Hardenbergia violacea* (Schneev.) Stearn
2141	101463	*Oxylobium cuneatum* Benth.	*Gastrolobium dilatatum* (Benth.) G. Chandler & Crisp
2142	101464	*Oxylobium cuneatum* Benth.	*Gastrolobium dilatatum* (Benth.) G. Chandler & Crisp
2143	101479	*Acaciaiteaphyllum* F.Muell.	*Acacia iteaphylla* Benth.
2144	101492	*Acaciastrigosa* Link	*Acacia browniana* Link
2145	101504	*Acaciaglaucescens* Willd.	*Acacia binervia* (Wendl.) J.F.Macbr..
2146	101534	*Pultenaea graveolens* Tateoka	*Pultenaea gravelens* Tateoka
2147	101535	*Pultenaea* S Hook.f.	*Pultenaea hibbertia* Hook.f.
2148	101566	*Glycine sericea* (F.Muell.) Benth.	*Glycine canescens* (F.Muell.) Benth.
2149	101621	*Acaciacuneata* Benth.	*Acacia truncata* Hoffmanns..
2150	101626	*Acacialinearis* Sims	*Acacia longissima* Wendl..
2151	101634	*Aotus villosa* Sm.	*Aotus ericoides* Smith
2152	101635	*Platylobium formosum* Sm.	*Platylobium formosa* Smith
2153	101670	*Oxylobium capitatum* Benth.	*Nemcia capitata* (Benth.) Domin
2154	101697	*Acacia armata* R.Br.	*Acacia paradoxa* (DC.) H.Ohashi & R.R.Mill
2155	101699	*Acacia juniperina* Willd.	*Acaciaulicifolia* (Salisb.) Court.
2156	101709	*Acacia iteaphyllum* F.Muell.	*Acaciaiteaphylla* Benth.

2157	101784	*Acaciadiffusa* Lindl.	*Acaciagenistifolia* Link.
2158	101824	*Acacia* cavenia Bertero	*Acaciacaven* Molina
2159	101958	*Cracca intermedia* Small	*Tephrosiafloridana* Small
2160	101959	*Meibomia arenicola* Vail	*Desmodium lineatum* (Michx.) DC.
2161	101976	*Ononis repens* L.	*Ononis spinosa* L.
2162	101984	*Lotus uliginosus* Schkuhr	*Lotus pedunculatus* Cav.
2163	102197	*Albizia montana* Benth	*Paraserianthes lophantha* Wilid. ssp. *montana* (Jungh.) I.C.Nielsen
2164	102272	*Dillwynia ericifolia* Sm.	*Dillwynia retorta* (Wendl.) Druce
2165	102274	*Acacia vomeriformis* A.Cunn.	*Acacia gunnii* Benth.
2166	102276	*Dillwynia ericifolia* Sm.	*Dillwynia retorta* (Wendl.) Druce
2167	102334	*Vicia angustifolia* L.	*Vicia sativa* L. ssp. *nigra* (L.) Ehrh.
2168	102468	*Crotalaria striata* DC.	*Crotalaria pallida* Aiton
2169	102599	*Lupinus*	*Lupinus sp.*
2170	102683	*Cassia bracteata* L.f.	*Senna alata* (L.) Roxb
2171	102816	*Acacia cibaria* F.Muell.	*Acacia brachystachya* Benth.
2172	103212	*Pultenaea microphylla* Suber.	*Pultenaea microphlla* Suber.
2173	103598	*Acacia*	*Acacia sp.*
2174	103600	*Acacia*	*Acacia* sp.
2175	103622	*Acaciamollissima* Willd.	*Acacia pubescens* (Vent.) R.Br.
2176	103623	*Acaciapinifolia* Benth.	*Acacia juncifolia* Benth.
2177	103626	*Crotalaria* sp	*Crotalaria sp.*
2178	103734	*Erythrina spp.*	*Erythrina sp.*
2179	103735	*Gastrolobium plicatum* Turcz.	*Gastrolobium plicatulum* Turcz.
2180	103741	*Dillwynia parvifolia*	*Dillwynia parvifolla* Sims.
2181	103746	*Acaciasowdenii* Maiden	*Acacia papyrocarpa* Benth.
2182	103750	*Acaciaplagiophylla*	*Acaciafalcata* Wilid.
2183	103752	*Acaciadiscolor* (Andrews) Willd.	*Acaciaterminalis* (Salisb.) J.F.Macbr.

2184	103882	*Porophyllum schottii* (Torr.)Torr.	*Porophyllum schotti* (Torr.)Torr.
2185	104022	*Cassia fastigiata* Nees	*Senna spectabilis* (DC.) H.S.Irwin & Barneby
2186	104098	*Dillwynia genistifolia* Cunn.	*Dillwynia genistifolia* . Cunn.
2187	104312	*Leptoglottis floridana* Small	*Mimosa quadrivalvis* (Chapman) Barneby
2188	104316	*Oxylobium tricuspidatum* Meisn.	*Gastrolobium pusillum* Meissn.
2189	104319	*Pultenaea procumbens* Linn.	*Pultenaea procumbence* L.
2190	104321	*Vigna lutea*	*Vigna marina* (Burm.f.)Merrill
2191	104658	*Melilotus alba* Medik.	*Melilotus albus* Medik.
2192	104849	*Vicia angustifolia* L.	*Vicia sativa* L. ssp. *nigra* (L.) Ehrh.
2193	663361	*Phaseolus pubescens* Blume	*Vigna umbellata* (Thunb.) Ohwi & H.Ohashi
2194	18778	*Alhagi camelorum* Fisch.	*Alhagi maurorum* Medik.

8. RET Legumes Species:

Out of 95 botanic garden about 33 botanic gardens have provided data on RET species growing in their repective garden. These species were checked with authentic source and nomenclature of each species was updated and author name and family and sub family name of each species were added. All species habit data was also collected and added to database and thus an an edited RET list of 56 RET legumes species presented in this table 12.

Table 13: Occurrence of 56 RET legumes in Indian Botanic Gardens family LEGUMINOSAE

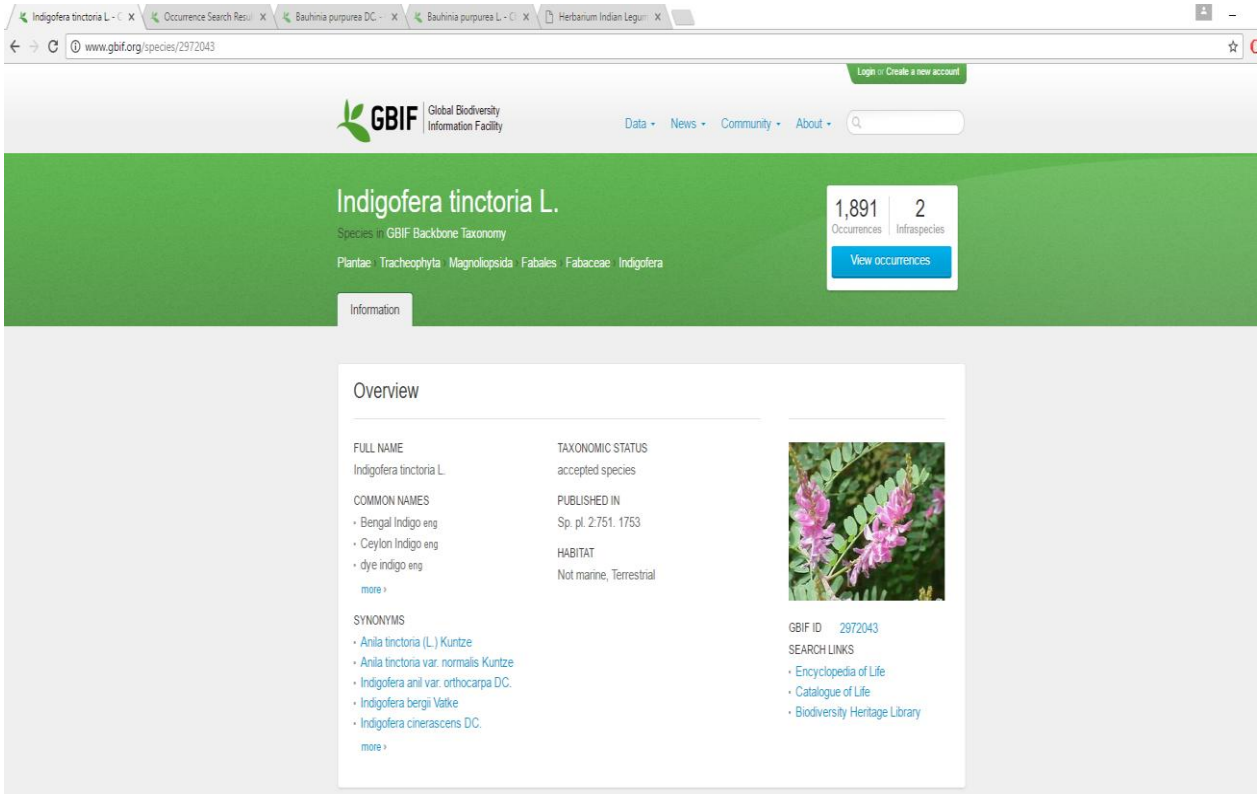
S.No.	Sub family	*Speices*	Habit	Botanic garden
1	**Caesalpinioideae**	*Bauhinia foveolata* Dalzell	T	MA-PUN2-EBGWC
2		*B. malabarica* Roxb.	T	MA-PUN2-EBGWC
3		*B. vahlii* Wight & Arn.	Cl.	MP-GWA1-JUBG
4		*Caesalpinia cucullata* Roxb.	Cl.	MA-PUN2-EBGWC
5		*Cassia angustifolia* Vahl	S	PU-AMR1-GDUBG
6		*Gymnocladus assamicus* Kanjilal ex P.C.Kanjilal	T	AP-ITA-AFSEBG
7		*Hardwickia binata* Roxb.	T	MA-PUN2-EBGWC
8		*Moullava spicata* (Dalzell) Nicolson	Cl.	MA-PUN2-EBGWC

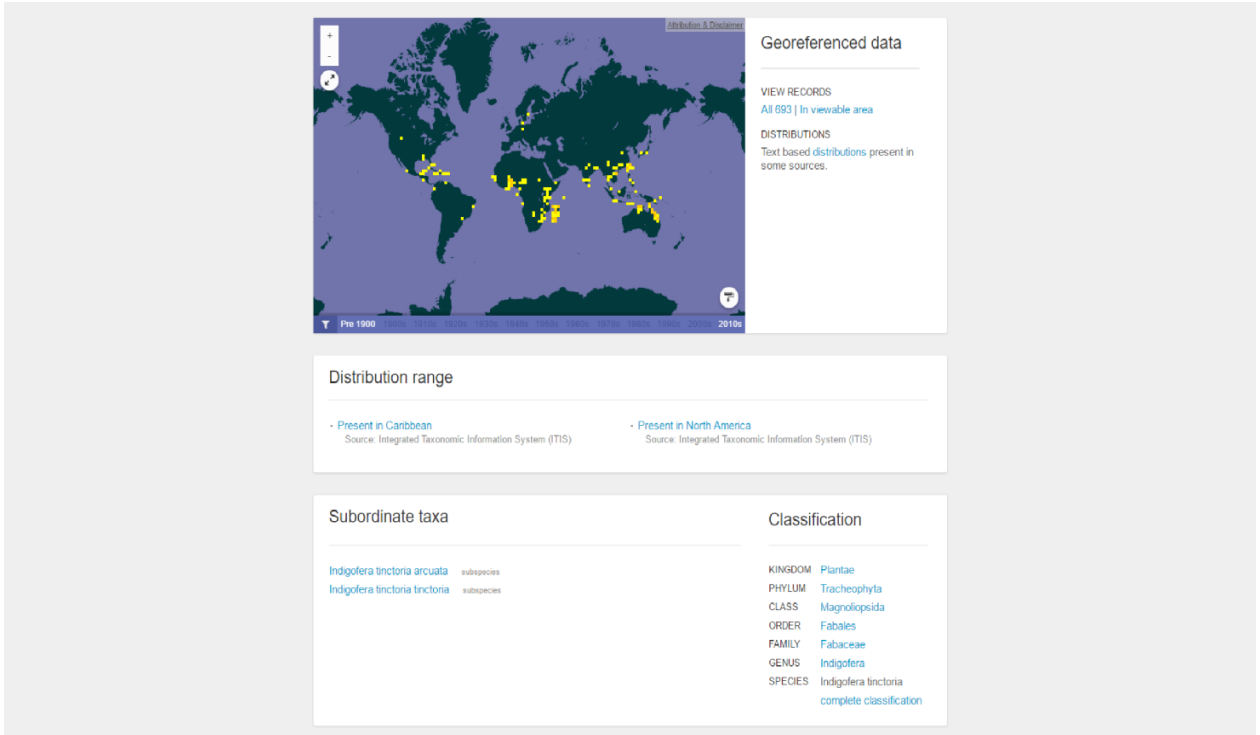
9		*Matoa polyandra* Harms	T	AP-ITA-AFSEBG
10		*Saraca asoca* (Roxb.) De Wilde	T	MA-PUN2-EBGWC
11	**Mimosoideae**	*Albizia odoratissima* (L.f.) Benth.	T	TN-CHE4-MCC
12	**Papilionoideae**	*Alysicarpus belgaumensis* Wight	H	MA-PUN2-EBGWC
13		*Butea superba* Roxb.	H	MA-PUN2-EBGWC
14		*Cajanus lineatus* Graham	S	MA-PUN2-EBGWC
15		*C. sericeus* (Benth. ex Bak.) Maesen	S	MA-PUN2-EBGWC
16		*Canavalia cathartica* Thou.	H	MA-PUN2-EBGWC
17		*C. ensiformis* DC.	H	MA-PUN2-EBGWC
18		*Clitoria biflora* Dalzell	H	MA-PUN2-EBGWC
19		*C. ternatea* L.	HCl.	MP-JAB2-SFR-BG
20		*Crotalaria berteroana* DC.	S	TN-COI1-CZPCC
21		*C. filipes* Benth.	H	MA-PUN2-EBGWC
22		*C. hirta* Willd.	H	MA-PUN2-EBGWC
23		*C. longipes* Raf.	S	TN-COI1-CZPCC
24		*C. ramosissima* F.Muell.	H	MA-PUN2-EBGWC
25		*C. vestita* Baker	H	MA-PUN2-EBGWC
26		*Dalbergia horrida* Graham	S	MA-PUN2-EBGWC
27		*Derris ovalifolia* Benth.	Cl.	PO-AUR1-ABG
28		*Erythrina resupinata* Roxb.	T	UP-LKO1-NBRIBG
29		*Flemingia gracilis* (Mukerjee) Sanjappa	H	MA-PUN2-EBGWC
30		*Glycyrrhiza glabra* L.	H	PU-AMR1-GDUBG
31		*Geissaspis tenella* Benth.	H	MA-PUN2-EBGWC
32		*Hedysarum cachemirianum* Benth. ex Baker	H	JK-SRN1-KUBG
33		*Mucuna monosperma* Wall.	S	MA-PUN2-EBGWC
34		*Ormosia travancorica* Bedd.	T	TN-COI1-CZPCC
35		*O. robusta* Baker	T	AP-ITA-AFSEBG
36		*Ougeinia dalbergioides* Benth.	T	MP-JAB2-SFR-BG
37		*Pterocarpus marsupium* Roxb.	T	MP-SAG1-HSGVBG
38		*P. dalbergioides* Roxb.	T	TN-SAL1-EBG
39		*P. santalinus* Buch.-Ham. ex Wall.	T	TN-SAL1-EBG
40		*Pueraria tuberosa* DC.	Cl.	MP-JAB2-SFR-BG
41		*Rhynchosia hirta* (Andrews) Meikle &	Cl.	MA-PUN2-EBGWC

	Verdc.		
42	*Smithia agharkarii* Hemadri	HCl.	MA-PUN2-EBGWC
43	*S. bigemina* Dalzell	H	MA-PUN2-EBGWC
44	*S. hirsuta* Dalzell	H	MA-PUN2-EBGWC
45	*S. purpurea* Hook.	H	MA-PUN2-EBGWC
46	*Sophora mollis* Span.	S	UK-DEH1-FRIBG
47	*Sphenostylis bracteata* (Baker f.) J.B.Gillett	H	MA-PUN2-EBGWC
48	*Tephrosia purpurea* Pers.	S	MP-JAB2-SFR-BG
49	*T. coccinea* Wall.	S	MA-PUN2-EBGWC
50	*Uraria picta* Wight	H	MP-SAG1-HSGVBG
51	*Vigna angularis* (Willd.) Ohwi & H.Ohashi	H	MA-PUN2-EBGWC
52	*V. dalzelliana* (Kuntze) Verdc.	HCr.	MA-PUN2-EBGWC
53	*V. khandalensis* (Santapau) Raghavan & Wadhwa	H	MA-PUN2-EBGWC
54	*V. sublobata* (Roxb.) G.C.Bairiganjan , P.C.Panda , B.P.Choudhury & S.N.Patnaik	H	MA-PUN2-EBGWC
55	*V. trilobata* (L.) Verdc.	H	MA-PUN2-EBGWC
56	*V. aconitifolia* (Jacq.) Maréchal	H	MA-PUN2-EBGWC

Fig.29 :Map of Indian Botanic Garden Network showing location of some selected Botanic Gardens

Fig 30: Data retrival from GBIF database of *Indigofera* tinctora for India.





www.gbif.org/species/2972043

Description

ABSTRACT

Indigofera tinctoria bears the common name true indigo. The plant was one of the original sources of indigo dye. It has been naturalized to tropical and temperate Asia, as well as parts of Africa, but its native habitat is unknown since it has been in cultivation worldwide for many centuries. Today most dye is synthetic, but natural dye from I. tinctoria is still available, marketed as natural coloring. The plant is also widely grown as a soil-improving groundcover.True indigo is a shrub one to two meters high. It may be an annual, biennial, or perennial, depending on the climate in which it is grown. It has light green pinnate leaves and sheafs of pink or violet flowers. The plant is a legume, so it is rotated into fields to improve the soil in the same way that other legume crops such as alfalfa and beans are. Dye is obtained from the processing of the plant's leaves. They are soaked in water and fermented in order to convert the glycoside indican naturally present in the plant to the blue dye indigotin. The precipitate from the fermented leaf solution is mixed with a strong base such as lye, The rotenoids deguelin, dehydrodeguelin, rotenol, rotenone, tephrosin and sumatrol can be found in I. tinctoria.In vivo and in vitro investigations on rotenoids from Indigofera tinctoria and their bioefficacy against the larvae of Anopheles stephensi and adults of Calmlosobruchus chinensis. Kamal R. and Mangla M., Journal of biosciences, 1993, vol. 18, no1, pp. 93-101

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Blütenstände und Laubblätter einer Indigopflanze

IMAGE HOME

http://commons.wikimedia.org/wil

PHOTOGRAPHER

Kurt Stüber [1], 2003-12-31T23:00:00.000+0000

PUBLISHER

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DESCRIPTION

Species: Indigofera tinctoria

1 / 2

Appears in

www.gbif.org/species/2972043

Appears in

OCCURRENCE DATASETS

- The vascular plants collection (P) at the Herbarium of... in 547 occurrences
- Naturalis Biodiversity Center (NL) - Botany Leiden in 285 occurrences
- Australia's Virtual Herbarium in 204 occurrences
- The New York Botanical Garden Herbarium (NY) - Vascula... in 81 occurrences
- NMNH Extant Specimen and Observation Records in 74 occurrences
- Tropicos Specimen Data in 59 occurrences

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CHECKLISTS

- International Plant Names Index as Indigofera tinctoria L.
- International Plant Names Index as Indigofera tinctoria L.
- International Plant Names Index as Indigofera tinctoria L.
- Interim Register of Marine and Nonmarine Genera as Indigofera tinctoria auct. non L.
- Interim Register of Marine and Nonmarine Genera as Indigofera tinctoria Linnaeus
- German Wikipedia - Species Pages as Indigofera tinctoria L.

10 more ›

Type Specimen

- HOLOTYPE K000392958 of Indigofera tinctoria var. arcuata J. B. Gillett
- TYPE 15548 of Indigofera anil var. orthocarpa DC.
- TYPE P00296348 of Indigofera indica Lam.
- LECTOTYPE BM000594662 of Indigofera tinctoria L.
- LECTOTYPE BM000621866 of Indigofera tinctoria L.
- LECTOTYPE BM000621867 of Indigofera tinctoria L.

www.gbif.org/species/2972043

of Indigofera tinctoria L.

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Accessed via http://www.gbif.org/species/2972043 on 2017-04-11

9. Study of heavy metal accumulation potential of legumes plants:

Some legumes are good accumulator of heavy metals as well. The heavy metal accumulation of various local legumes has been investigated in many countries across the world. The maximum number of studies, including various legume species, is from India followed by Poland. Thailand, Tunisia and China also have tested many legume species with respect to heavy metal accumulation.

In general, a wide range of metal accumulation was observed is different leguminous plants, which is species and metal specific. Among the nine tested species, *Trifolium repens* accumulated maximum level of lead (130 mg/kg) followed by *Cicer arietnum* (40 mg/kg) while *Vicia faba* accumulated least amount of Pb. However, *VignaSps*. demonstrated high accumulation capability for Cu and Zn in comparison to other legumes. *Trigonella foenumgraecum* accumulated several fold higher level of Co in comparison to *Glycine max*.Significant differences in Zine concentrations were found in the different species of legumes. The highest Cdaccumulation occurred in*Acacia* mangiumwhile least in *Ceratonia siliqua* and L. odoratus.*Trigonella foenumgraecum*accumulated significant amount of Cobalt (4 mg/kg) fallowed by Lablab purpureus and *Glycine max*, however two fold difference was observed between *Cicer arietinum* and *Cajanus* cajan for chromium accumulation. At tissue level, accumulation of Cd was more in roots of Lablab perpereus and Phaseolus coccineus while the accumulation of Cu was also higher in the roots of in Lablab perpereus. The accumulation of Pb and Cd was maximum in the shoots of Medicago sative followed by Phaseolus vulgaris and *Vigna unguiculata*. In conclusion, *Vigna Sps.,Trifolium repens* and *Cicer arietinum, Trigonella foenumgraecum* can be good candidates for phyto-remediation of metal contaminated soils without using edible part (Fig 31 and 32).

Table 14:Heavy metal accumulation potential of legumes plants

S.No	Species Name	metal name	Mini Standard unit(mg/kg)	Maximum Standard unit(mg/kg)	Growth condition	plant part	Location
	CAESALPINIOIDEAE						
1	*Cassia fistula L.*	Cadmium			Lab conditions Cadmium: 8.0 mg/L		Thailand
2	Tamarindus indica L.	Zinc	2.7	23.07	Experimentally performed		India
3	*Ceratonia siliqua* L	Cadmium	0.02		Greenhouse at the nursery of Timber Trees Research Department of Sabahia	shoot	Egypt
	MIMOSOIDEAE						
4	*Acacia mangium* Willd	Cadmium	444.5		Lab conditions Cadmium: 8.0 mg/L	leaf	Thailand
	Acacia mangium Willd	Cadmium	294		lab conditions concentration of 16.0 mg/L	leaf	Thailand
	PAPILIONOIDEAE						
5	*Medicago Sativa* L.	Cadmium	1.23		The highly contaminated soil A field experiment was conduced at the Agricultural Academy Research Station near Kraków (Poland) between 1999 and 2001, on soil classified as EutricCambisols, with loess as the basement complex, pHKCl 4.8, 1.2% organic carbon	shoot	United states
	Medicago Sativa L.	Lead	11.33		The highly contaminated soil A field experiment was conduced at the Agricultural Academy Research Station near Kraków (Poland) between 1999 and 2001, on soil	shoot	United states

					classified as EutricCambisols, with loess as the basement complex, pHKCl 4.8, 1.2% organic carbon		
6	*Vigna vexillata (L).A Rich*	Arsenic	3.95		The homogenized samples and standard reference material (GBW07406 (GSS-6)) were digested by a mixture acidic solution (HCl: HNO3: HF = 3:3:2) in a microwave ovenMining site in China		China
	Vigna vexillata (L).A Rich	Copper	51.5		The homogenized samples and standard reference material (GBW07406 (GSS-6)) were digested by a mixture acidic solution (HCl: HNO3: HF = 3:3:2) in a microwave ovenMining site in China		China
	Vigna vexillata (L).A Rich	Lead	27.6		The homogenized samples and standard reference material (GBW07406 (GSS-6)) were digested by a mixture acidic solution (HCl: HNO3: HF = 3:3:2) in a microwave ovenMining site in China		China
	Vigna vexillata(L).A Rich	Zinc	88.2		The homogenized samples and standard reference material (GBW07406 (GSS-6)) were digested by a mixture acidic solution (HCl: HNO3: HF = 3:3:2) in a microwave ovenMining site in China		China
7	*Vigna unguiculata* (L)Walp.	Zinc	409	500	Lab conditions(Changes in Proline Content Accompanying Zn Uptake)	root	India
	Vigna unguiculata (L)Walp.	Zinc	2.43		A field study experiment,Haridwar	leaf	India

	Vigna unguiculata (L)Walp.	Nickel	1.4		The experiment was conducted in semi-controlled glasshouse conditions at The University of Queensland, St Lucia, Australia (27° 29' 43" S, 153° 0' 35" E). The glasshouse received natural sunlight which was supplemented by high-pressure sodium lamps, thereby providing 16 h of light per day.	root and shoot	Australia
	Vigna unguiculata (L)Walp.	Cadmium	0.53		The experimental site was tannery sludge compost.Cr, Cd, Ni, and Pb (mg kg-1) in cowpea shoots in the first year	shoot	Brazil
	Vigna unguiculata (L)Walp.	Chromium	1.12		The experimental site was tannery sludge compost.Cr, Cd, Ni, and Pb (mg kg-1) in cowpea shoots in the first year	shoot	Brazil
	Vigna unguiculata (L)Walp.	Nickel	1.83		The experimental site was tannery sludge compost.Cr, Cd, Ni, and Pb (mg kg-1) in cowpea shoots in the first year	shoot	Brazil
	Vigna unguiculata (L)Walp.	Lead	3.36		The experimental site was tannery sludge compost.Cr, Cd, Ni, and Pb (mg kg-1) in cowpea shoots in the first year	shoot	Brazil
8	*Vigna radiata* (L.) R. Wilczek	Cadmium	50	100	Based on a greenhouse pot culture experiment		Morocco
9	*Cicer arietinum* L	Cadmium	1.3		Lab experiment		Pakistan
	Cicer arietinum L	Chromium	82.85		Lab experiment		Pakistan
	Cicer arietinum L	Lead	40.6		Lab experiment		Pakistan
	Cicer arietinum L	Copper	0.042		Experiment was performed in northern and central western Tunisia.The collected soil samples were air dried at 40 °C for 16 hours and sieved into coarse and fine fractions. Well mixed samples, each weighs 0.5 g, were dissolved with 6 ml hydrochloric acid and	root	Tunisia

					2 ml of 2% nitric acid at 95 °C for 75 min, filtered and then diluted to 50 ml with distilled water.		
10	*Phaseolus vulgaris* L.	Cadmium	0.96		A field experiment	leaf	Poland
	Phaseolus vulgaris L.	Lead	8.01		A field experiment	leaf	Poland
	Phaseolus vulgaris L.	Zinc	0.005	2.2	Experimentally performed		Australia
11	*Trifolium repens* L.	Cadmium	2.64		Grow in Metal Contaminated Soils		Morocco
	Trifolium repens L.	Zinc	300		Grow in Metal Contaminated Soils		Morocco
	Trifolium repens L.	Lead	130		Grow in Metal Contaminated Soils		Morocco
	Trifolium repens L.	Cadmium	2.64		Greenhouse experiment in India.		Poland
	Trifolium repens L.	Zinc	300		Greenhouse experiment in India.		India
	Trifolium repens L.	Lead	130		Greenhouse experiment in India.		India
12	*Cajanus cajan* (L.) Millsp.	Chromium	40		Exposed for 15 days to an experiment in aqueous media containing lead and chromium		Nigeria
	Cajanus cajan (L.) Millsp.	Lead	40		Exposed for 15 days to an experiment in aqueous media containing lead and chromium		Nigeria
13	*Glycine max* (L.) Merr.	Cobalt	0.63		Pot Culture Experiments Control	leaf	India
	Glycine max (L.) Merr.	Lead	1.5		0.1km away from NFMW,near Plovdiv.	leaf	Plovdiv
	Glycine max (L.) Merr.	Cobalt	0.83	250	Pot Culture Experiments:		Tamil Naidu ,India
	Glycine max (L.) Merr.	Zinc	140		The experiments were conducted in a greenhouse, in Piracicaba, SP, Brazil,		Brazil
14	*Pisum sativum* L.	Lead	0.1		EXPERIMENT: The plant samples were digested in nitric acid and perchloric acid (4:1)	leaf	India
	Pisum sativum L.	Cadmium	9.4	32.32	The study area Singrauli district is developed industrialized region, covered coal mine		India
	Pisum sativum L.	Lead	36.7	58.14	The study area Singrauli district is developed industrialized region,		India

					covered coal mine		
15	*Vicia faba* L.	Lead	0.38	20.41	The field study area was in ZagajeStradowskie Poland.		Poland
	Vicia faba L.	Copper	0.095		Experiment was performed in northern and central western Tunisia.The collected soil samples were air dried at 40 °C for 16hours and sieved into coarse and fine fractions. Well mixedsamples, each weighs 0.5 g, were dissolved with 6 mlhydrochloric acid and 2 ml of 2% nitric acid at 95 °C for 75min, filtered and then diluted to 50 ml with distilled water.	root	Tunisia
	*Vicia faba*L.	Cadmium	1.6		The field study area was in ZagajeStradowskie,Poland		Poland
	*Vicia faba*L.	Copper	3.5		The field study area was in ZagajeStradowskie,Poland		Poland
	*Vicia faba*L.	Nickel	85.4		The field study area was in ZagajeStradowskie,Poland		Poland
16	*Pterocarpus indicus* Willd	Cadmium			Lab conditions Cadimimum: 8.0 mg/L		Thailand
17	*Lens culinarisMedikus*	Cadmium	0.6	120	Dejen (East Gojjam)		Dejen
18	*Trigonella foenum-graecum L.*	Iron	0.78		Experiment was conducted using bacterial culture		India
19	*Mucuna pruriens(L.) DC.*	Iron	3.15		Experiment was conducted using bacterial culture		India
20	*Lens culinaris* Medikus	Copper	0.025		Experiment was performed in northern and central western Tunisia.The collected soil samples were air dried at 40 °C for 16 hours and sieved into coarse and fine fractions. Well mixed samples, each weighs 0.5 g, were dissolved	shoot	Tunisia

				with 6 ml hydrochloric acid and 2 ml of 2% nitric acid at 95 °C for 75 min, filtered and then diluted to 50 ml with distilled water.	
21	*Trifolium*.L	Cadmium	5	Experimentally using culture media	London
22	*Lupinus albus*.L	Zinc	21	Research was carried out on sites described by Siuta	Poland
	Lupinus albus.L	Zinc	52.1	Revalent remediation approaches for cleaning up metal contaminants in soil. The selection of the appropriate remediation approach depends on the type of metal contamination in soil in china.	China
23	*Arachis hypogaea* L.	Cadmium	0.5	Consumer Council	
24	*Trigonella foenum-graecum* L	Cobalt	4	Sample sites were selected in both the Amhara and Tigray regional states Standard solutions (1000 mg/L in 2% HNO3) of Ca, K, Na, Mg, Fe, Cr, Ni, Zn, Mn, Cu, Co, Pb, and Cd (Buck Scientific Puro-Graphictm) were used to prepare the calibration curves. LaNO3.6H2O (98%, Aldrich, USA) solution was used to prevent chemical interference from phosphates and other anions in the measurements of Ca and Mg. Chemically pure deionized water (with electrical conductivity < 2 μs cm-1) was used for cleaning the digestion and volumetric flasks and to dilute the samples.	Ethopia

2.3 Sample collection

Trigonella foenum-graecum L	Mangnese	16	28	Sample sites were selected in both the Amhara and Tigray regional states Standard solutions (1000 mg/L in 2% HNO3) of Ca, K, Na, Mg, Fe, Cr, Ni, Zn, Mn, Cu, Co, Pb, and Cd (Buck Scientific Puro-Graphictm) were used to prepare the calibration curves. LaNO3.6H2O (98%, Aldrich, USA) solution was used to prevent chemical interference from phosphates and other anions in the measurements of Ca and Mg. Chemically pure deionized water (with electrical conductivity < 2 μs cm-1) was used for cleaning the digestion and volumetric flasks and to dilute the samples.2.3 Sample collection	Ethopia
Trigonella foenum-graecum L	Zinc	15	33	Sample sites were selected in both the Amhara and Tigray regional states Standard solutions (1000 mg/L in 2% HNO3) of Ca, K, Na, Mg, Fe, Cr, Ni, Zn, Mn, Cu, Co, Pb, and Cd (Buck Scientific Puro-Graphictm) were used to prepare the calibration curves. LaNO3.6H2O (98%, Aldrich, USA) solution was used to prevent chemical interference from phosphates and other anions in the measurements of Ca and Mg. Chemically pure deionized water (with electrical conductivity < 2 μs cm-1) was used for	Ethopia

				cleaning the digestion and volumetric flasks and to dilute the samples. 2.3 Sample collection	
Trigonella foenum-graecum L	**Magnesium**	31	102	Sample sites were selected in both the Amhara and Tigray regional states Standard solutions (1000 mg/L in 2% HNO3) of Ca, K, Na, Mg, Fe, Cr, Ni, Zn, Mn, Cu, Co, Pb, and Cd (Buck Scientific Puro-Graphictm) were used to prepare the calibration curves. LaNO3.6H2O (98%, Aldrich, USA) solution was used to prevent chemical interference from phosphates and other anions in the measurements of Ca and Mg. Chemically pure deionized water (with electrical conductivity < 2 μs cm-1) was used for cleaning the digestion and volumetric flasks and to dilute the samples.	Ethopia
Trigonella foenum-graecum L	**Nickel**	31	108	2.3 Sample collection Sample sites were selected in both the Amhara and Tigray regional states Standard solutions (1000 mg/L in 2% HNO3) of Ca, K, Na, Mg, Fe, Cr, Ni, Zn, Mn, Cu, Co, Pb, and Cd (Buck Scientific Puro-Graphictm) were used to prepare the calibration curves.	

					LaNO3.6H2O (98%, Aldrich, USA) solution was used to prevent chemical interference from phosphates and other anions in the measurements of Ca and Mg. Chemically pure deionized water (with electrical conductivity < 2 μs cm-1) was used for cleaning the digestion and volumetric flasks and to dilute the samples.		
25	*Lablab purpureus* (L.) Sweet	Cadmium	1.55		2.3 Sample collection inoculated with 5ml rhizobium sp.strain,Pot experiment at 50	root	Egypt
	Lablab purpureus (L.) Sweet	Zinc	1.83		inoculated with 5ml rhizobium sp.strain,Pot experiment at 50	root	Egypt
	Lablab purpureus (L.) Sweet	Cobalt	2.3		inoculated with 5ml rhizobium sp.strain,Pot experiment at 50	root	Egypt
	Lablab purpureus (L.) Sweet	Copper	2.12		inoculated with 5ml rhizobium sp.strain,Pot experiment at 50	root	Egypt
26	*Lathyrus odoratus L.*	Cadmium	0.094	2	Experimental setup at greenhouse	root	China
27	*Phaseolus coccineus L.*	Cadmium	1.5		Field experiment	root	Poland
28	*Lotus corniculatus* L.	Cadmium	31		Zn-polluted soil at Breinigerberg close to Aachen, Germany		Germany

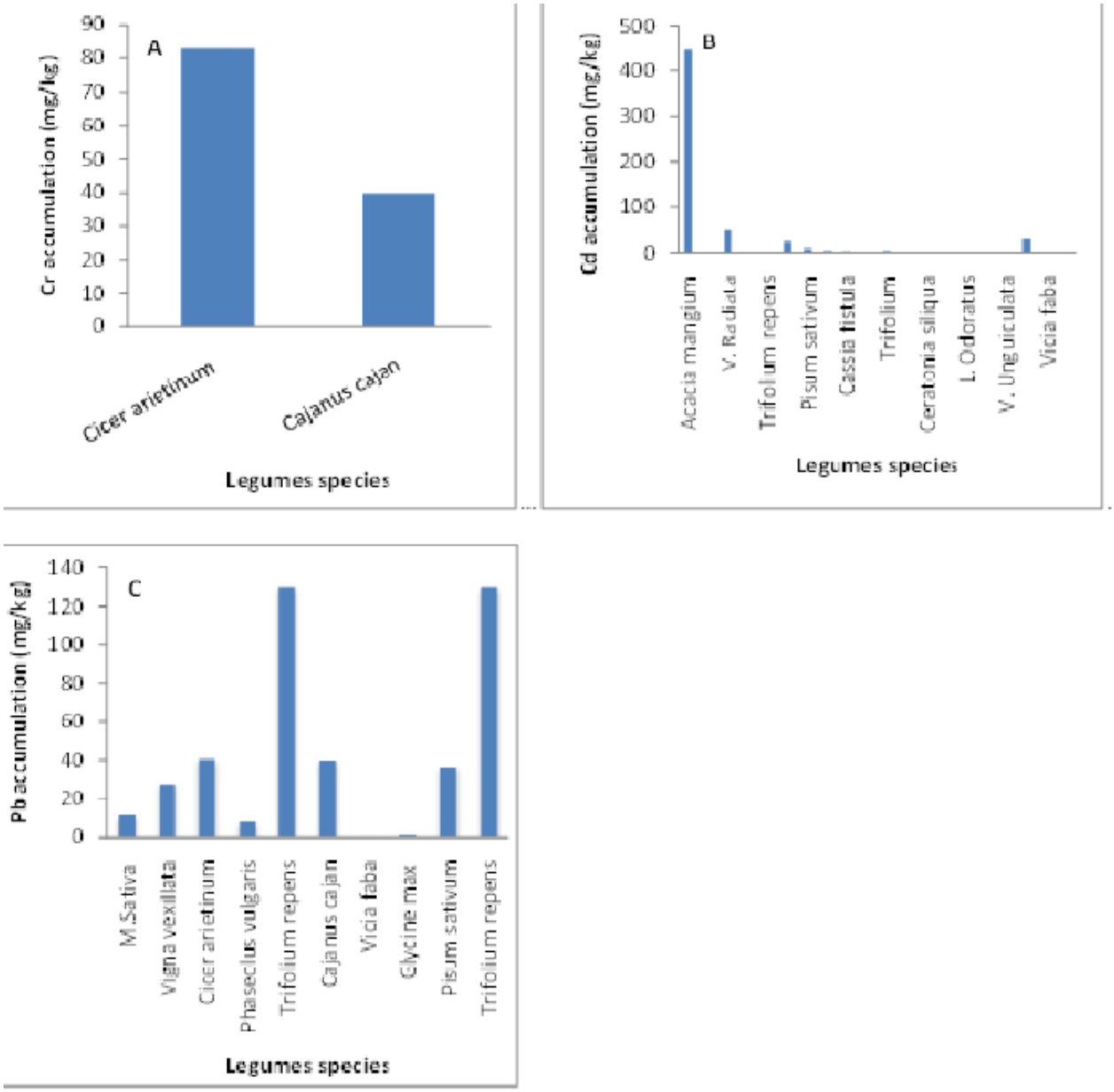

Fig 31:Heavy metal (A-Cr; B-Cd; C-Pb) accumulation potential of different legumes species

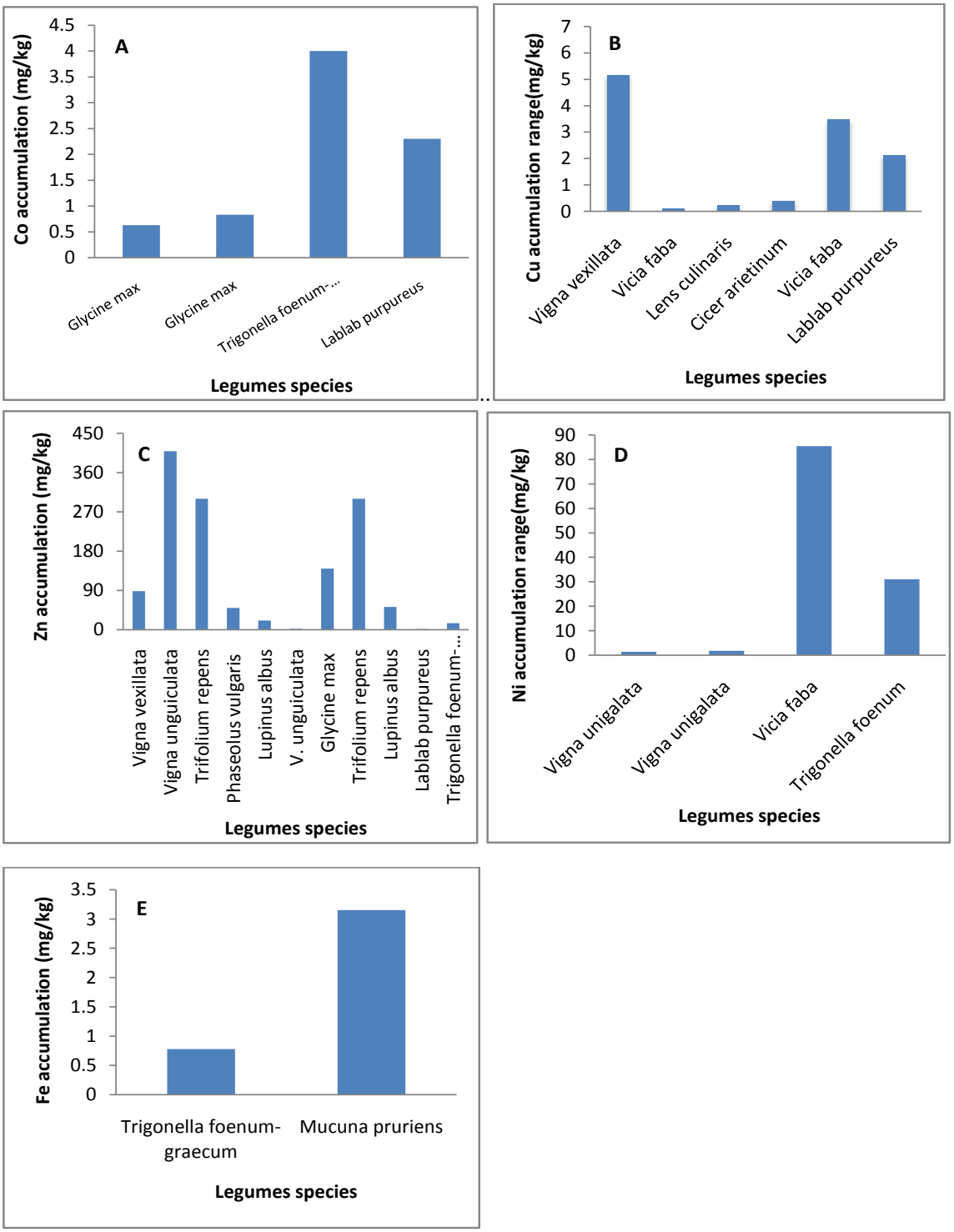

Fig 32: Nutrients elements (A-Co; B-Cu; C-Zn; D-Ni; E-Fe) accumulation potential of different legumes species.

10.Study of nutritional components present in legumes species:

While executing the value addition with respect to nomenclature update, description, Geography and genomic data to the herbarium specimen data phytochemical scrutiny was also studied in the present study.The present study revealed 195 medicinal 145 food values legumes of India. Out of these sample data of6 food value species including i) plant species name or its parts in which nutritional components reported ii) nutritional compunds iii) percentage of nutritional components in mature seeds, iv) percentage of nutritional components in immature seeds nutritional value per 100 gm., v)percentage of nutritional components in mature seeds nutritional value per 100 gm., vi) Genes,vii) modes of action and viii) paper published on this aspects.

Table 14: Showing nutritional components present in food value legumes

Species /Plant Parts	Nutrition Components	Mature Seeds, (Nutritional Value in %)	Immature, Raw (Nutritional Value Per100 G)	Mature Seeds, (Nutritional Value Per 100 G (3.5 Oz))	Genes/ ESTs	Mode Of Action	Pubmed papers related to ESTs genes
1.Cicer arientum					**46566 ESTs(8)**		**46566 papers(9)**
SEED	Energy			686 kJ			
	Carbohydrates			27.42 g			
	Sugars			4.8 g			
	Dietary fibre			7.6 g			
	Fat			2.59 g			
	Saturated			0.269 g			
	Monounsaturated			0.583 g			
	Polyunsaturated			1.156 g			
	Protein			8.86 g			
	Vitamins						
	Vitamin A equiv.	0%		1 µg			
	Thiamine (B1)	10%		0.116 mg			
	Riboflavin (B2)	5%		0.063 mg			
	Niacin (B3)	4%		0.526 mg			
	Pantothenic acid (B5)	6%		0.286 mg			
	Vitamin B6	11%		0.139 mg			
	Folate (B9)	43%		172 µg			
	Vitamin B12	0%		0 µg			
	Vitamin C	2%		1.3 mg			
	Vitamin E	2%		0.35 mg			
	Vitamin K	4%		4 µg			
	Minerals						
	Calcium	5%		49 mg			
	Iron	22%		2.89 mg			
	Magnesium	14%		48 mg			
	Phosphorus	24%		168 mg			
	Potassium	6%		291 mg			

	Sodium	0%	7 mg		
	Zinc	16%	1.53 mg		
	Other constituents				
	Water		60.21 g		
2.Cajanus cajan				**25578 ESTs (5)**	**25578 papers(6)**
Leaf	Crude protein	11.46		Protein Coding(8) through **Coat Protein [*Arhar cryptic virus-II*](7)**	
	Crude fibre	22.6%		Protein Coding(9) through **Glycoprotein [*Pigeonpea sterility mosaic virus-II*](7)**	
Seed	Crude protein	18.36%		Protein Coding(10) through **RNA dependent RNA polymerase [*Arhar cryptic virus-I*](7)**	
	Crude fibre	5.43%		Protein Coding(11) through **Coat Protein [*Arhar cryptic virus-I*](7)**	
				Protein Coding(12) through **Coat Protein [*Arhar cryptic*	

***virus-I*](7)**

Energy	569 kJ	1,435 kJ
Carbohydrates	23.88 g	62.78 g
Sugars	3 g	n/a
Dietary fiber	5.1 g	15 g
Fat	1.64 g	1.49 g
Protein	7.2 g	21.7 g
AMINO ACIDS		
Tryptophan		212 mg
Threonine		767 mg
Isoleucine		785 mg
Leucine		1549 mg
Lysine		1521 mg
Methionine		243 mg
Cystine		250 mg
Phenylalanine		1858 mg
Tyrosine		538 mg
Valine		937 mg
Arginine		1299 mg
Histidine		774 mg
Alanine		972 mg
Aspartic acid		2146 mg
Glutamic acid		5031 mg
Glycine		802 mg
Proline		955 mg
Serine		1028 mg
Hydroxyproline		0 mg
VITAMINS		
Thiamine (B1)	0.4	0.643

			mg	mg		
		Riboflavin (B2)	0.17 mg	0.187 mg		
		Niacin (B3)	2.2 mg	2.965 mg		
		Pantothenic acid (B5)	0.68 mg	1.266 mg		
		Vitamin B6	0.068 mg	0.283 mg		
		Folate (B9)	173 µg	456 µg		
		Choline	45.8 mg	0.000000 mg		
		Vitamin C	39 mg	0 mg		
		Vitamin E	0.39 mg	0.000000 mg		
		Vitamin K	24 µg	0.000000 µg		
		Trace minerals				
		Calcium	42 mg	130 mg		
		Iron	1.6 mg	5.23 mg		
		Magnesium	68 mg	183 mg		
		Manganese	0.574 mg	1.791 mg		
		Phosphorus	127 mg	367 mg		
		Potassium	552 mg	1392 mg		
		Sodium	5 mg	17 mg		
		Zinc	1.04 mg	2.**76** mg		
3. Macrotyloma uniflorum					**1025 ESTs**	**1025 papers (3)**
Seed	Energy	321 Ecals			Protein coding through bv1 gene (4)	
	Moisture	12 gm			Protein coding through bc1 gene	

					(5)
		Protein	22 gm		Protein coding through ac3 gene (6)
		Fat	0 gm		Protein coding through ac1 gene (7)
		Mineral	3 gm		Protein coding through av2 gene (8)
		Fiber	5 gm		Protein coding through av1 gene (9)
		Carbohydrates	57 gm		Protein coding through ac2 gene (10)
		Calcium	287 mg		Protein coding through ac4 gene (11)
		Phosphorous	311 mg		
		Iron	7 mg		
4. Vigna aconitifolia				**975 ESTs(4)**	
Seed	**Energy**		1,436 kJ		
	Carbohydrates		61.5 g		
	Fat		1.6 g		
	Protein		22.9 g		
	Vitamins				
	Thiamine (B1)	52%	0.6 mg		
	Riboflavin (B2)	8%	0.1 mg		
	Niacin (B3)	19%	2.8 mg		
	Pantothenic acid (B5)	10%	0.5 mg		

	Vitamin B6	31%	0.4 mg		
	Folate (B9)	162%	649 µg		
	Choline	0%	0 mg		
	Vitamin C	8%	7 mg		
	Vitamin E	0%	0 mg		
	Vitamin K	0%	0 µg		
	Minerals				
	Calcium	15%	150 mg		
	Iron	83%	10.8 mg		
	Magnesium	107%	381 mg		
	Manganese	86%	1.8 mg		
	Phosphorus	70%	489 mg		
	Potassium	25%	1191 mg		
	Sodium	2%	30 mg		
	Zinc	20%	1.9 mg		
	Other constituents				
	Water		9.7 g		
	Ash		4.3 g		
5. Vigna mungo				**631 ESTs(6)**	**631 Papers(7)**
Seed	Carbohydrates		58.99mg		
	Sugars		0mg		
	Dietary fiber		18.3mg		
	Fat		1.64 g		
	Protein		25.21g		
	Vitamins				
	Thiamine (B1)	24%	0.273mg		
	Riboflavin (B2)	21%	0.254mg		
	Niacin (B3)	10%	1.447mg		
	Pantothenic acid (B5)	0%	0.0 mg		
	Vitamin B6	22%	0.281 mg		
	Folate (B9)	54%	216 µg		
	Choline	0%	0 mg		
	Vitamin C	0%	0 mg		
	Vitamin E	0%	0 mg		
	Vitamin K	0%	0 µg		
	Minerals				
	Calcium	14%	138 mg		
	Iron	58%	7.57 mg		
	Magnesium	75%	267 mg		
	Manganese	0%	0 mg		
	Phosphorus	54%	379 mg		
	Potassium	21%	983 mg		

	Sodium	3%	38 mg		
	Zinc	35%	3.35 mg		
	Other constituents				
	Water		10.8g		
6. *Vigna unguiculata*				**189593 ESTs(4)**	**papers(5)**
Seed	**Energy**		484 kJ		
	Carbohydrates		20.76 g		
	Sugars		3.3 g		
	Dietary fibre		6.5 g		
	Fat		0.53 g		
	Protein		7.73 g		
	Vitamins				
	Thiamine (B1)	18%	0.202 mg		
	Riboflavin (B2)	5%	0.055 mg		
	Niacin (B3)	3%	0.495 mg		
	Pantothenic acid (B5)	8%	0.411 mg		
	Vitamin B6	8%	0.1 mg		
	Folate (B9)	52%	208 µg		
	Vitamin E	2%	0.28 mg		
	Vitamin K	2%	1.7 µg		
	Minerals				
	Calcium	2%	24 mg		
	Iron	19%	2.51 mg		
	Magnesium	15%	53 mg		
	Manganese	23%	0.475 mg		
	Phosphorus	22%	156 mg		
	Potassium	6%	278 mg		
	Sodium	0%	4 mg		
	Zinc	14%	1.29 mg		

11. Impact of climate changes:

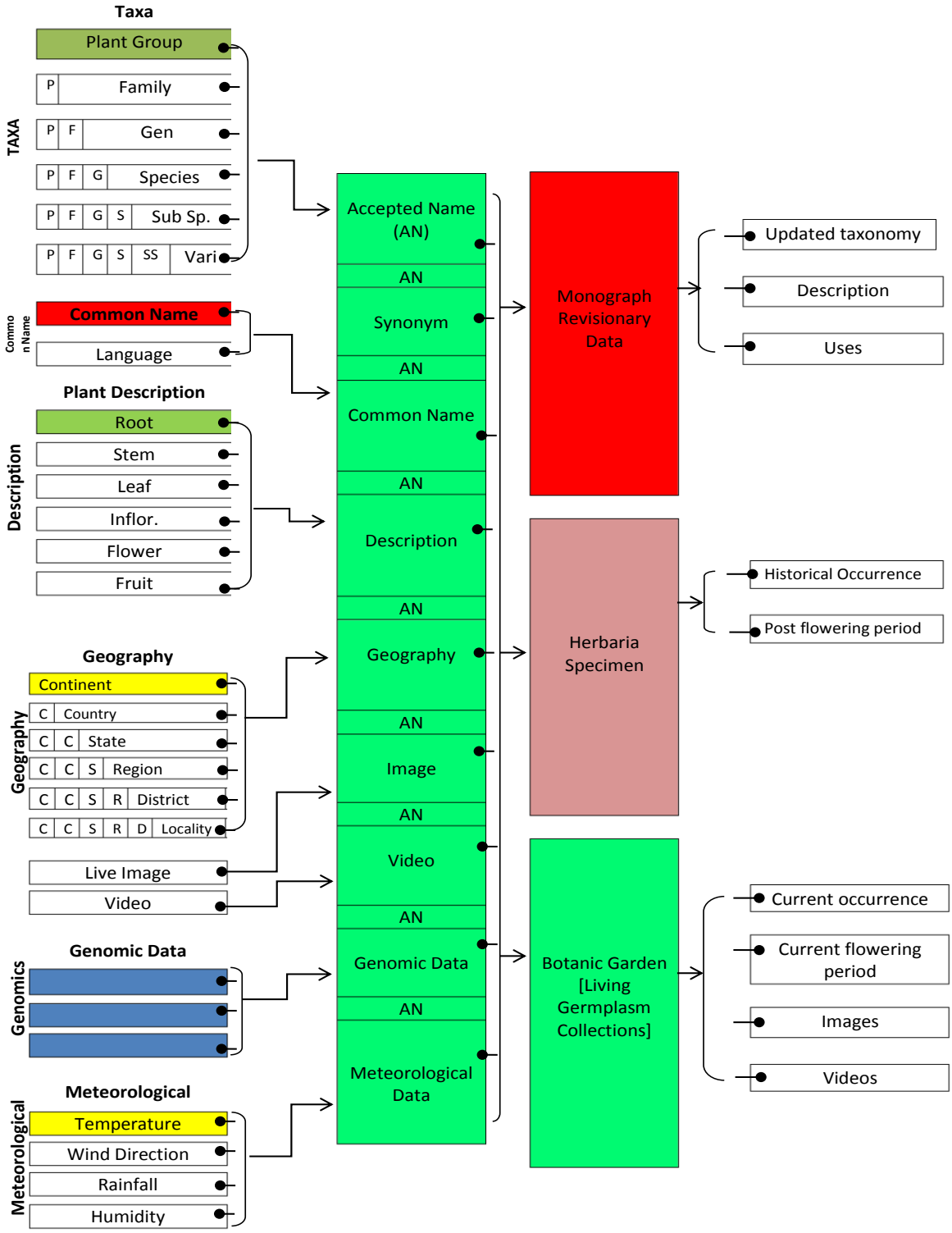

Fig 33: Computer model for study of climate change by comparing flowering period of specimens and plant diversity in botanic gardens

12. Herbarium speciesmen with live images:

Sub family: Caesalpinioideae

Tribes: Cercideae

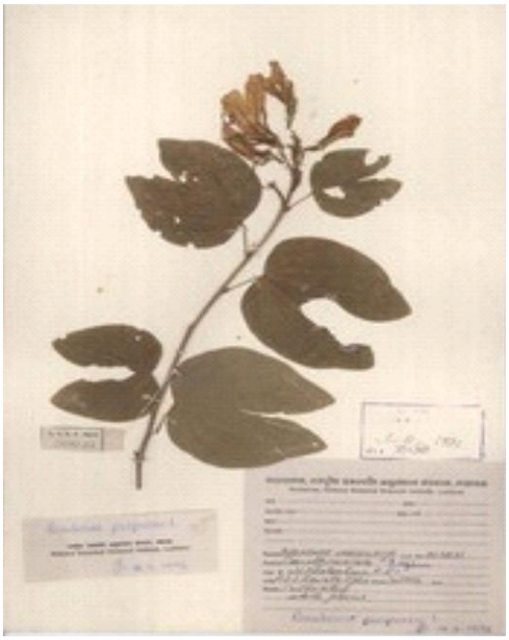

Plate1: *Bauhinia purpurea*L (70138), specimen and live image (jpeg)

Sub family Papilionoideae

Tribes: Indigofereae

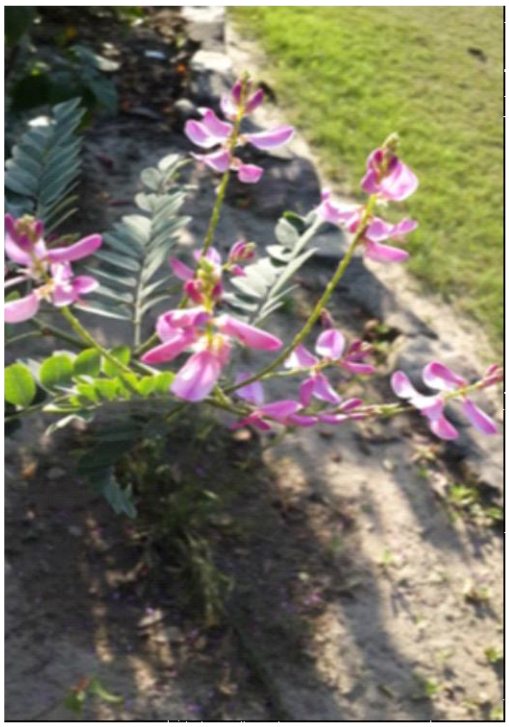

Plate2: *Indigofera tinctoria* L.(15568), specimens and live image (jpeg)

Tribe: Crotalarieae

Plate3:*Crotalaria trichotoma* Bojer *(24701),* specimens and live image (jpeg)

Plate4: *Crotalaria spectabilis* Roth (27111), specimens and live image (jpeg)

Tribe: Desmodieae

Plate5*: Dendrolobium triangulare* Wallich (24989), specimens and live image (jpeg)

Tribe:Phaseoleae

Plate 6*: Spatholobus parviflorus* (DC.) Kuntze (21808), specimens and live image (jpeg)

Plate 7*: Phaseolus lunatus* L. (79084), specimens and live image (jpeg)

Plate 8: *Vigna radiata* (L.) R.Wilczek (71920), specimens and live image (jpeg)

Plate 9*: Vigna mungo (L.) Hepper* (46258), specimens and live image (jpeg)

Tribe: Cicereae

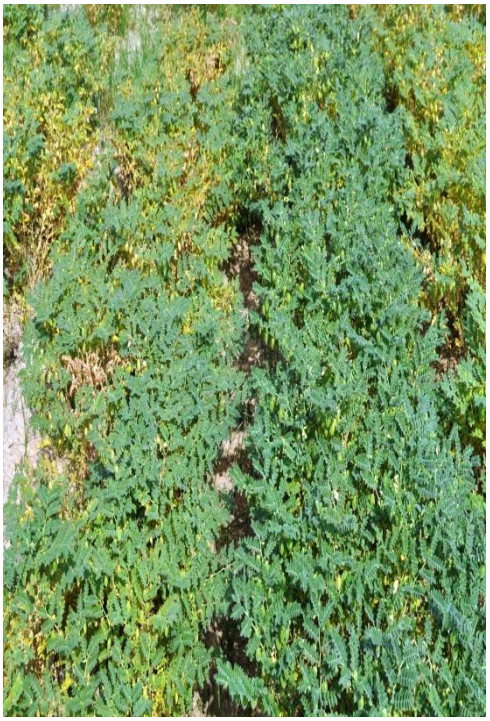

Plate 10*: Cicer arietinum L.* (2480), specimens and live image (jpeg)

Tribe: Vicieae

Plate 11:*Pisum sativum L. (*39429)specimens and live image (jpeg)

Plate 12: *Lathyrus sativus* L. (77665),specimens and live image (jpeg)

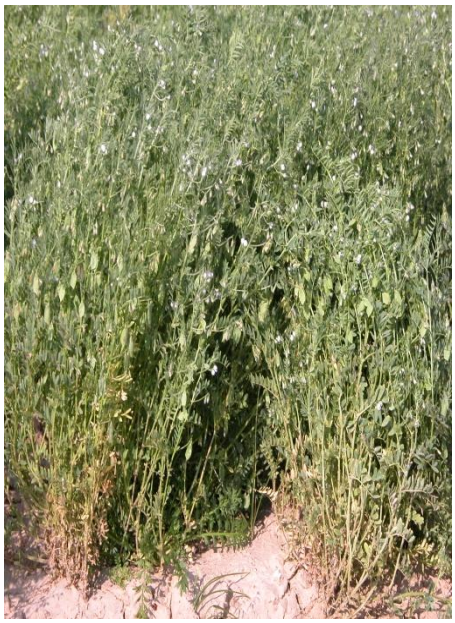

Plate 13*:Lens culinaris Medik. (*21565), specimens and live image (jpeg)

Plate 14: *Cajanus cajan* (L.) Millsp. (29298), specimens and live image (jpeg)

CHAPTER - 5

SUMMARY & CONCLUSION

Summary

Legumes are the most economically important group of plants. In the present studylegumes has chosen. Leguminosae (or Fabaceae) contains approximately 700 genera in 41 tribes in three subfamilies (Caesalpiniodeae, Mimosoideae and Papilionoideae) and about 18, 000 species. Legumes are widespread in all the continents as herbs, shrubs and trees. Leguminosae family lies in second place to cereals (Gramineae) in importance to man but in the number of diversity of uses of man, in contribution to the vegetation and agriculture of all continents (excluding Antarctica) and in biological diversity and interest, the family is second to none. Legumes are used to provide very many foods, as fodder, kindling, household materials, ornamentals, poisons, pharmaceutical sources and blood-testing reagents. Their root nodules make a major contribution to the worldôs nitrogen fixation and they contribute richly to some of botanyôs most remarkable observations, examples being the occurrence of phyto-haemagglutinins in seeds, and the rapid leaf-movements of some species.

A new software HILWeb server developed which allows creation, curation and modification of data on herbarium specimen and also allows value additions with respect to recent nomenclature, vernacular names, GPS data, Genomics data, image and video images of the species not worked out in earlier databases or portals.

In the present study 10477 legumes specimens of a national herbarium (LWG) were digitized and it provided several new innovations as given below:

- A new data dictionary and data structure were developed to create database on herbarium specimens.
- HILWeb software allow to retrieval of data on accession no. belonging to sub family viz. Caesalpiniodeae (1580) , Mimosoideae (1294), Papilionioideae (7633) Genera-

(Abrus-115) and soon specie, (Abrus precatorius L.-106 and so on) and other taxa rank.

- The option of common names allows search by common name, and its language
- User can search a specimen by particular accession or range of accession numbers.
- Geography option provide facility or retrieval of species represented in a locality, district, state and country and GIS map are also displayed and thus geographical distribution of plant can be seen.
- Collector option provides collection by individual Collector for a certain period and this throw light on history of collectors.
- Holdings option provide total no. of accession in three sub families, viz. Caesalpiniodeae (1580) , Mimosoideae (1294), Papilionioideae (7633), genera (1145), species (5978) and collectors (792) and so on.
- Taxonomic upgrade module provides new knowledge on taxonomic upgradation of various taxa and it includes recent nomenclature changes on all rank of taxa. HILWeb allows up upgrading of taxonomic nomenclature data with respect to each data filed i.e. family name, genus name, species name, authority, common names, geographical distribution, GPS data etc. Recent taxonomic nomenclature was ascertained after consulting recent monographs on legumes, world database ILDIS, GBIF, IPNI and The Plant List etc. and this make digitization very useful to scientific community. HIL web software was developed and back end database is developed using latest Maria db. Frontend has been development using the PHP.

Data creation on RET legumes in botanic garden of India: Over 33 botanic gardens data was scrutinized and RET legumes growing in Indian Botanic Gardens were identified in the present study.

Conclusion

In the present study 10476 herbarium specimens were digitized using newly developed web enabled software HILWeb. The study has successfully applied for value addition of 10476 legumes accessions with respect to recent nomenclature, common name, GPS data, and genomic data and heavy metal accumulation. HILWeb software used for digitization of data of 10476 legumes accessions of a national herbarium (LWG) and thus all these collection

were made accessible world-wide so as to enhance the importance manifold.

The HILWeb software was made in two components viz., the first HILWeb Entry module, allows the creation of database of herbarium specimen label data and value addition with respect to update nomenclature, geography, genomic data, GPS map etc. and the second is HILWeb Report module, it is user friendly and it allows retrieval of information on several aspects viz., I) the taxa represented in the herbarium, II) search of specimen information on the basis of accession no. as well as common name for the benefit of public in general III) specimens from a geographical location IV) display of species distribution on GIS maps and status of specimens for future collection guidance V) and retrieval of information for various upkeep of herbarium.

Botanical gardens are the place of where plant species grow in live condition other than nature. The combined knowledge and expertise held by botanic gardens, in associationship with herbaria, will make a substantial contribution to the understanding of plant adaptation to climate change and support plant conservation in the wild & in botanic gardens. The botanical expertise in plant diversity and taxonomy held in botanic gardens and herbaria underpins the current state of knowledge about plant diversity. Establish a monitoring programme of plant responses to environment changes. Indiaôs botanic gardens are the source of plant flowering times, which is a key indicator of response to environmental changes.

In addition, botanic gardens have significant expertise and knowledge of plant flowering and seasonal studies. They are well placed to develop methodologies for monitoring the impact of climate change on plants for botanic gardens and conservation agencies in India.

Hence in the present study the species diversity was studied in 100 botanic gardens of India and the study reveals 56 RET legumes species are represented in 33 botanic gardens. A new model for comparing the data stored in herbarium vis-à-vis present data available in botanic gardens is also developed and using this model other herbaria may utilised for studying the impact of climate change in a more comprehensive manner.

It will not be out of place to mention that the present study is first of its kind effort to digitized herbarium specimens of a national herbarium and RET legumes species growing in botanic gardens of India and put these in one place and made accessible through HILWeb and a computer model is prepared which show the mechanism to study the impact of climate change. The HILWeb has a provision to accommodate data of other herbaria and thus a India Herbarium Network can be establish which will be immense useful to entire country.

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