GROWTH, INSTABILITY AND COST OF PROCESSING OF GROUNDNUT SEEDS IN JUNAGADH DISTRICT

By

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POST GRADUATE INSTITUTE OF AGRI-BUSINESS MANAGEMENT

JUNAGADH AGRICULTURAL UNIVERSITY

JUNAGADH- 362001

SEPTEMBER-2021

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PROJECT WORK REPORT

SUBMITTED TO THE

JUNAGADH AGRICULTURAL UNIVERSITY

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE

OF

MASTER OF BUSINESS ADMINISTRATION

IN

AGRI-BUSINESS

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Dedicated To

My Beloved Family

And

Respected Guide...

POST GRADUATE INSTITUTE OF AGRI-BUSINESS MANAGEMENT
JUNAGADH AGRICULTURAL UNIVERSITY
JUNAGADH-362001

Name of the student **Advisor**
Chudasma Pooja k. **Dr. C. D. Lakhlani**

GROWTH, INSTABILITY AND COST OF PROCESSING OF GROUNDNUT SEEDS IN JUNAGADH DISTRICT

ABSTRACT

***Key words*:** Growth, Instability, Multiple leaner regression, Brand Switching

The present study entitled "Growth, instability and cost of processing of groundnut seeds in Junagadh district". This study aims at analyzing growth and instability, processing cost of groundnut seeds, factor affecting groundnut production brand switching behavior and constrains faced by farmer purchasing groundnut seeds. Multi stage purposive sampling technique was use for data collection and four talukas namely Junagadh, Vanthali, Keshod and Manavadar of Junagadh district were selected to survey 120 samples of groundnut grower. The statistical tools adopted for the analysis of data were exponential function, tabular method, multiple linear regression model and Garrett's ranking technique. The result shows that Area, production and yield of groundnut had negative growth during the overall period (1999-00 to 2018-19) in Gujarat. Low instability in area (28.34 %), production (47.24 %) and yield (33.14 %) of groundnut were observed during overall study period (1999-00 to 2018-19). Total processing cost of groundnut seeds was calculated Rs. 13,677,243.00 and total processed quantity was estimated 1, 25,000.00 qtls in last five years. Cultivated area, pest and disease significantly influenced groundnut production in Junagadh district. High price of previous brand, recommendation by dealer and pear group and unavailability of preferred brand were the three major reasons behind brand switching for groundnut variety GG-20. Major constraints were unavailability of improved varieties, high cost of groundnut seeds and germination faced by groundnut farmers.

POST GRADUATE INSTITUTE OF AGRI BUSINESS MANAGEMENT
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CERTIFICATE-II

Date: 04/ 09/ 2021

This is to certify that the project work report entitled **"GROWTH, INSTABILITY AND COST OF PROCESSING OF GROUNDNUT SEEDS IN JUNAGADH DISTRICT"** submitted by **Ms. CHUDASMA POOJA KISHORBHAI** to Junagadh Agricultural University, Junagadh in partial fulfilment of the requirements for award of the degree of **MASTER OF BUSINESS ADMINISTRATION IN AGRI-BUSINESS** after recommendation by the project evaluation committee were defended by the candidate before the following members of the evaluation committee. The performance of the candidate in the oral examination was satisfactory. We, therefore, forward with recommendation.

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Place: Junagadh
Date: / / 2021

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Western Bio
Vegetable Seeds Pvt. Ltd.

Date.29/07/2021

TO WHOMSOEVER IT CONCERN

This is certify that ***Miss. Chudasma Pooja K.*** From ***Junagadh Agricultural University,*** has completed her report work in ***Post Graduate Institute of Agri Business Management,*** Gujarat from 01/05/2021 to 30/06/2021.

She has submitted the final report as per the guideline provided by the company, we wish her all the best for her future.

Yours Faithfully,

Western Bio Vegetable Seeds Pvt. Ltd.

(Director)

Western Bio Vegetable Seeds Pvt. Ltd.

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e mail : info@westernbioseeds.com

Regd. Office : SF-11, Unique Metropolis, Near Prasang Party Plot, R C Technical Road, Gota, Ahmedabad - 382 481. Gujarat

ACKNOWLEDGEMENT

I respectfully bend my head in thanksgiving to the **Almighty God** for all of his benefits throughout my life, especially for the assistance provided to me by many known and unknown hands during the course of my project work.

This project report entitled **"GROWTH, INSTABILITY AND COST OF PROCESSING OF GROUNDNUT SEEDS IN JUNAGADH DISTRICT"** is not the product of exclusively my efforts. For the completion of this work I received magnanimous support from many that, a comprehensive acknowledgement is almost impossible. Still I would like to reckon from my inner heart, my deep gratitude and indebtedness to all.

I should also record my gratitude to **Dr. R. M. Chauhan,** Honorable Vice Chancellor and Director of Research and Dean of P. G. studies; JAU, Junagadh for providing me necessary facilities throughout my academic life in JAU.

Then I would like to thank **Dr. C. D. Lakhlani,** Principal and Dean and my esteemed guide, whose valuable guidance has been the ones that helped me for the patch this project and make it a full proof success. His suggestions and his instructions have served as the major contributor towards the completion of the project. No words in my vocabulary would suffice to express my heartfelt thanks and gratitude for his valuable advice, suggestions and encouragement throughout my academic career, his personal attention and consideration are also thankfully acknowledged here with.

I am also indebted to **Dr. H. Y. Maheta**, **Dr. S. M. Trivedi,** and **Prof. Kalpesh Kumar, Prof. C. R. Bharodia, Prof. Nisha Thaker, Dr. Jagruti Bhatt, Mr. Viral Chaudhary, Barad Neetaben Kanabhai,** PGIABM, JAU, Junagadh who were real source of help and assistance to me during the course of the project. I take this opportunity to thank all staff members of PGIABM who spared their precious time to provide me with valuable inputs for project without which it would have not been possible.

I revere with deep sense of gratitude, **Mr. A.P. Patel,** joint managing director of Western Bio Vegetable Seed Pvt. Ltd. for granting me permission for doing my project work and in the esteemed organization.

I am deeply indebted to **Dr. D. P. Goswami,** Director of research & development of Western Bio Vegetable Seed Pvt. Ltd. for their boundless encouragement, for their unforgettable attention and support in my project work.

I wish to express my thanks to all seniors and beloved juniors and all the non-teaching staffs of **PGIABM** family for their unforgettable love and care in my personal pursuits.

I express my heartfelt gratitude to all my batch mates. I express my special thanks to my friends **Poorva Mavani, Krishna Kasturi, Disha Patel, Nisha Mendpara, Jyoti Makani, Bhumi Malani, Sweta Zalavadiya, Kinjal Jethva, Vishva Patel, Ravi Singala, Siddharth Asodariya, Prakash varu,** and **Jaydip Kanazariya** who have been constant sources of help and encouragement.

Words are not enough to express my wholehearted and affectionate gratitude to my **Parents, Uncle, Aunty, Sister** and **Brother** for their boundless love, selfless sacrifice and encouragement at every stage of my life and without their moral support; i could not have completed the thesis.

A word of apology to all those I have not mentioned in person and note of thanks to each and every one who have blessed me with their prayers. Needless to say, I solely am responsible for any errors, which may remain.

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Place: Junagadh

Date: / /2021 **(Chudasma Pooja K.)**

LIST OF ABBREVIATIONS

NARS	: National Agricultural Research System
ICAR	: Indian Council of Agricultural Research
R & D	: Research and Development
NSP	: National Seed Project
MT	: Million tons
ha	: hectare
QTY	: Quantity
Kg	: Kilogram
Qt	: Quintal
Rs	: Rupees
UAE	:United Arab Emirates
INR	: Indian rupee
CAGR	: Compound Growth Rate
CV	: Coefficient of Variation
CDI	: Cuddy Della Valle Index
NFSM	: National Food Security Mission
NPV	: Net Present Value
B-C Ratio	: Benefit cost ratio
TR	: Total revenue
GM	: Gross margin
NFI	: Net farm income
RNI	: The return on naira invested
FYM	: Farm Yard Manure
AMIC	: Agricultural Market Intelligence Center
APEDA	: The Agricultural and Processed Food Product Export Development Authority

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CHAPTER - I

INTRODUCTION

Agriculture, as the backbone of Indian economy, plays the most crucial role in the socio-economic sphere of the country. India as a predominantly agricultural country attributes a major share of its overall development to the agriculture sector. Indian agriculture is a miscellaneous and extensive sector involving a large number of stakeholders. India has one of the largest and institutionally most complex agricultural research systems in the world. The green revolution contributed to the Indian economy by providing food self-sufficiency and improved rural welfare. Moreover, since independence, India has observed considerable increase in the production of oilseeds (through the yellow revolution), milk (through the white revolution), fish (through the blue revolution), and fruits and vegetable (through the golden revolution). The role of the National Agricultural Research System (NARS) was imperative in the con-text of all these momentous and successful upheavals. However, such a complex research system was not a sudden development. Instead, historically, it involved a process that started in the second half of the 19th century during the colonial period and eventually led to the establishment of the Imperial (now Indian) Council of Agricultural Research (ICAR) (Singh and Borthakur, 2013).

The agricultural sector is highly dependent on the availability and quality of seeds for a productive harvest. Therefore, in order to increase the quantity and quality of produce, efforts are made to introduce enhanced varieties of seeds with the help of advance technology and modern agricultural methods (Singh *et al.*, 2019).

Seeds are not only a strong symbol for food sovereignty and biodiversity, but also one of the important elements to strengthen farming communities. In India there are two types of seed systems: the formal system, which is market-oriented and is developed by the public and/or private sectors and the family or community production system which is based mainly on seed self-provisioning exchanges and gifts among neighbours and the informal market traditionally. Seeds are the reproductive organs representing both continuity and change of the species.

Seeds are a means for spatial and temporal dispersion of plant populations. Agriculture has always played a vital role in sustaining human life. An integral and inseparable part of human civilization, agriculture has seen new turns with ever rising human culture. Change of lifestyle, technology and mainly the industrial revolution

has played a pivotal role in changing the shape of agricultural values (Pandey *et al*., 2017).

1.1 HISTORY OF SEED INDUSTRY IN INDIA

National Seed Corporation was established in 1963. The Government of India enacted the Seeds Act in 1966 to regulate the growing seed industry. The sixties were the most eventful times for Indian agriculture, not only because of introduction of high-yielding cereals, particularly wheat and rice but also for many other positive developments related to seed such as, constitution of Seed Review Team, enactment of Seeds Act, 1966 and formation of National Commission on Agriculture. This was the period, during which the private sector significantly stepped into the seed business (Gadwal, 2003).

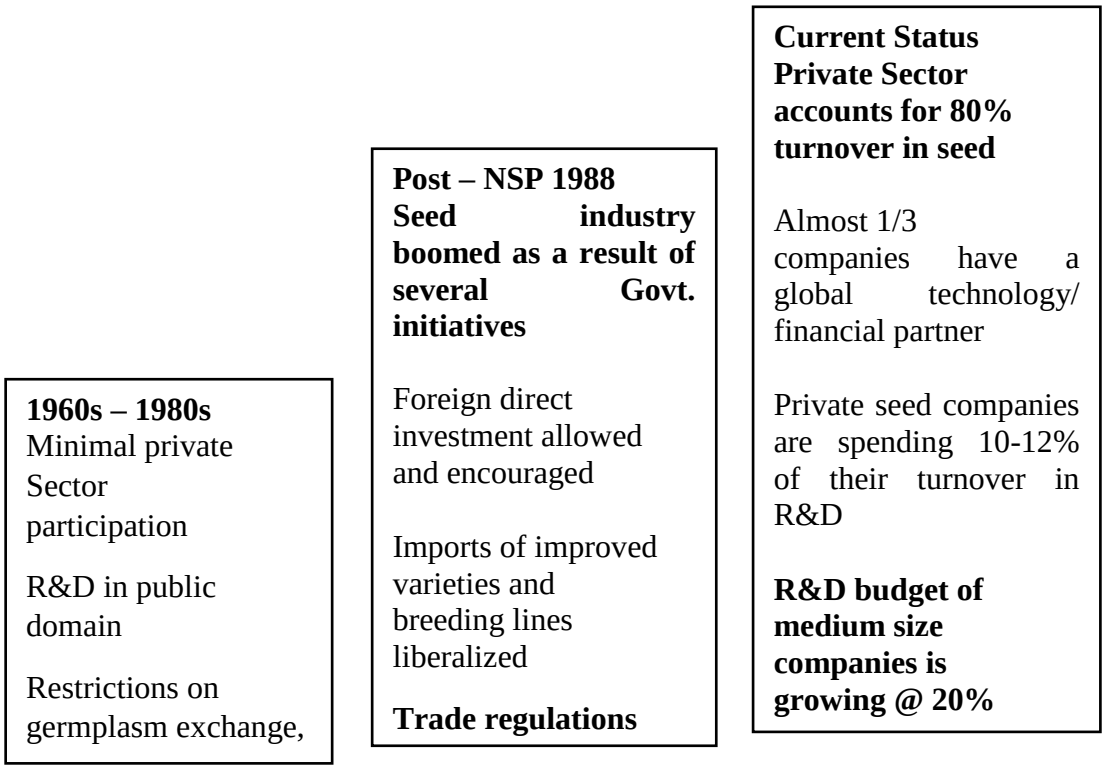

Fig. 1.1 Evolution of seed sector in India

Source: Chauhan *et al*. 2016

The Indian seed industry has played a very critical role in the growth of Indian agricultural. Indian seed industry is the fifth largest seed market in the world. The seed industry has grown steadily in the last four decades. A number of transformations have taken place in this sector over the past few decades like rising a

penetration of the organized sector, growth in contract farming, agriculture becoming more mechanized, easy loan facilities, rise of exports, use of agrochemicals and high yielding seeds and an increasing role of the private sector in processing, branding and marketing, etc.

The Indian seed industry is the fifth largest seed market in the world and valued at more than Rs 2500 crores. Government took many progressive and reformative steps in last three decades for the growth of seed sector in the country (Singh *et al.*, 2019).

1.2 OVERVIEW OF GROUNDNUT

Cultivated groundnut (Arachis hypogaea L.) or peanut, is a self-pollinated annual legume crop, widely grown for its high-quality edible oil and food use in the tropical and warm temperate regions of the world. The crop is grown in more than 100 countries. It is widely grown in the tropics and subtropics, being important to both small and large commercial producers. It is classified as both a grain legume and, due to it's for its edible seeds. It is widely grown in the tropics and subtropics, being important to both small and large commercial producers (Madhan and Nigam, 2014).

Indian groundnuts are available in different varieties: Bold or Runner, Java or Spanish and Red Natal. They have a rich nutty flavour, sweet taste, crunchy texture and over and above a relatively longer shelf life. Soil conditions in some producing regions are ideally suited for dry, clean and spotless Groundnuts in shell. Groundnuts in India are available throughout the year due to a two-crop cycle harvested in March and October. Groundnuts are important protein crops in India grown mostly under rain-fed conditions. Groundnut is known by many other local names such as earthnuts, pea nuts, goober peas, monkey nuts, pygmy nuts and pig nuts. Despite its name and appearance, the peanut is not a nut, but rather a legume (Mishra, 2017).

Peanut is also used for feed through the valorisation of oil cakes that represent an interesting source of proteins for livestock. In most Sahelian countries, groundnut straw is also used as dried hay and represents a major source for cattle feed during the dry season. As is the case with most of the grain legumes, peanut has an important nutritional value for human consumption. Several studies have reported a positive impact of peanut on human health, and its nutritional value has been exploited for the

elaboration of highly nutritious food products used in the treatment of severe child malnutrition (Rami *et al.* 2014).

1.3 GLOBAL SCENARIO OF GROUNDNUT

Table 1.1 here displays top 10 groundnut production countries. It can be seen that India is at 2nd place having production of 7,342,984 MT, followed by Nigeria with production of 2,824,069. China is the leading country in groundnut production doing 17,562,363 MT of groundnut production. United States is in list at fourth place followed by Myanmar, Tanzania and Argentina respectively.

Table 1.1 Global ranking in production, 2019-2020: Groundnut

Rank	Country	Production(Metric tons)
1	China	1,75,62,363.90
2	India	73,42,984.00
3	Nigeria	28,24,069.00
4	United State	27,23,005.00
5	Myanmar	16,38,998.00
6	Tanzania	10,63,041.00
7	Argentina	9,88,651.00
8	Chad	9,09,566.00
9	Sengeal	8,70,218.00
10	Guinea	5,93,733.00

(Source: Nation Master, 2019)

1.4 INDIAN SCENARIO

India is the world's leading producer of groundnuts, with 4.94 million hectares (12.20 million acres) accounting for 17.32 percent of global production and 6.70 million tonnes accounting for 14.55 percent. Groundnut crop ranks first in terms of acreage and second in terms of production among oilseed crops in India, after soyabean. Groundnut production forecast (kharif and rabi) for 2019-20 was 9.34 million tonnes, up from 6.72 million tonnes in 2018-19, according to the 3rd advance estimates. In 2019-20, NAFED procured 7.19 lakh tonnes, with Gujarat accounting for the lion's share (5 lakh tonnes) (AMIC, 2020).

Groundnut was sown in roughly 38.88 lakh hectares (96.07 lakh acres) in India during kharif 2019-20, which is 2.82 percent less than the same period previous year (40.01 lakh ha) (98.86 lakh acres). It was planted in 15.50 lakh hectares (38.30 lakh acres) in Gujarat, followed by 5.73 lakh hectares (14.15 lakh acres) in Rajasthan, 5.10 lakh hectares (12.60 lakh acres) in Andhra Pradesh, 3.82 lakh hectares (9.43 lakh

acres) in Karnataka, and 2.22 lakh hectares (2.22 lakh acres) in Madhya Pradesh (5.48 lakh acres) (AMIC, 2020).

The Indian production and area covered is largely concentrated in the above-mentioned states. Groundnut has a share of approximately 25% in the total Indian oilseed production. But this share is persistently reducing since India got independent, as it was around 70% in 1950s (Mishra, 2017).

Groundnut is a prominent oilseed crop in Telangana during the yasangi (rabi) season, though only a small area is farmed for seed during the vanakalam (kharif) season. Groundnut has been planted across 11,554 hectares (28,550 acres) in Telangana, compared to 12,326 ha the previous year (30,458 acres). Major groundnut-growing districts in Telangana include Vanakalam (kharif), Gadwal (Jogulamba), Warangal (Rural), Wanaparthy, Suryapet, and Nalgonda (AMIC, 2020).

1.5 EXPORTING COUNTRY

Table 1.2 gives data of groundnut exports made by countries in year 2019-20 with their amount as well. Here Indonesia is at first place followed by Vietnam and Philippines with their respective quantity of 213,821.57, 140,453.68 and 47,672.62 MT. Here Malaysia is ranked at 4th place which is then followed by Thailand, China, Russia and Ukraine. UAE and Nepal are the last 2 countries in the list.

Table 1.2 Export of groundnut seeds major countries

Sr. No.	**Country**	**Qty** (Metric tons)	**Value** (INR Lacs)
1	Indonesia	2,13,821.57	168252.95
2	Vietnam Soc Rep	1,40,453.68	106084.39
3	Philippines	47,672.62	38067.29
4	Malaysia	35,145.76	28628.47
5	Thailand	30,022.83	24826.99
6	China P Rp	34,082.00	24732.08
7	Russia	20,203.48	15135.48
8	Ukraine	15,107.00	12066.45
9	U Arab Emts	13,112.60	9519.83
10	Nepal	13,755.10	8180.32

(APEDA, 2019)

1.6 CLASSES OF SEED

Nucleus seed (G0): The basic seed stock is used to make the nucleus seed. This can be obtained from the original breeder. Individual plants from the space planted seed stock are identified as true to type (indicating diagnostic traits of a released variety designated for Nucleus seed production). The number of selected plants will be determined by the amount of nucleus seed to be generated, as well as the multiplication ratio. only those plants that fully conform to the diagnostic traits of the variety being multiplied are kept. The next season, these plants are space-planted in progeny rows, and each offspring is examined for diagnostic traits of the variety under multiplication during pre- and post-harvest. Any progeny that does not match these diagnostic criteria is discarded. The progenies that have been chosen are subsequently bulked up to produce nucleus seed stocks (Ntare *et al.*2008).

Breeder seed (G1, G2 and G3): The breeder seed is produced from nucleus seed under the direct supervision of the originator or sponsored plant breeder. It is only accessible for general culture and is used to expand the foundation seed. Because groundnut has a low seed multiplication ratio, three steps of breeder seed development are allowed. Breeder seed G1 I is obtained by multiplying the nucleus seed, which is then multiplied to create G2 and G3. Plants in the breeder seed crop are planted at the recommended plant density (Ntare *et al.*2008).

Foundation seed (G4): This is a product of breeder seed. The breeder and the originating institution work together to ensure that the foundation seed maintains its genetic purity and uniqueness while adhering to the guidelines set forth for this type of seed (Ntare.*et al.*2008).

Certified seed (R1 and R2): This is the progeny of foundation, registered, or occasionally certified seed that is offered for general cultivation to farmers. Under certification, certified seed produced from foundation seed is not exposed to further seed multiplication (Ntare *et al.*2008).

1.7 COMPANY PROFILE

1.7.1 INTRODUCTION

1.7.1 Western Bio Vegetable Seeds Pvt. Ltd. is an agriculture seeds company located at Gandhinagar, Gujarat. It is registered under Companies Act 1956 and headed by Managing Director, Mr. Jigar Patel.

The company is a research based agri scientific seed company. The prime activities of the company are to develop new varieties of various crops & commercialize the research varieties and hybrids through seed production & marketing. The research activities are in hybrid castor, groundnut (peanut), sesame, cumin, wheat, pearl millet, mustard, gram, green gram, black gram, pigeon pea, soya bean, fennel and vegetables like okra, cowpea, cluster bean, fenugreek, chili, tomato and other vegetables.

Western Bio Vegetable Seeds Pvt. Ltd. company is constantly engaged in research and development activities with the help of research scientist to produce quality seeds of various crops keeping in view the climatic suitability and requirement of farmers. They have distributors network all over India for sale of the company produced seeds of various crops and are also exporting to other countries.

1.7.2 Other Detail of the Company

Table 1.3 Company Profile

Name of the company	Western Bio Vegetable Seeds Pvt. Ltd.
Address	Ramwadi, Opposite Godadiya Hanuman Temple, Nr. Randheja Railway Crossing Gujarat State Highway 71, Gandhinagar, Gujarat 382620
Logo of the company	
Year of the establishment	1956
Director	Mr. Jigar Patel
e-mail	info@westernbioseeds.com
Website	https://www.westernbioseeds.com/
Phone No.	096879 91931

Table 1.4 Products of Western Bio Seeds Pvt. Ltd.

Product	Variety
Groundnut	King Nir-20, King-111, King-666, King Pramukh, King Kranti, King Raksha, King-45 and King Bhim
Castor Hybrid	King Amul, King Pratap, King Anmol-44, King Shiva, King Manek, King Sumul, King Super Shiva, King Anmol-44+, King Shiva+ and King Ganesha
Cumin	King Krishna and King Balaram
Seasamum	King Karma, King Karma-44 and King Black
Green Gram	King Navjivan, King Power, King Power+
Hybrid Bajara	King-1112, King-2021, King-555
Mustard	King Prabhat, King Suprabhat, King Surya
Wheat	King Leader, King Leader +, King Super-303, King Super
Fennel	King-88, King-88+,
Guwar seed	King No.1. King No.1+
Rajka	King sPavan
Soya bean	King Shakti
Black Gram	King-109, King Chandragupt, King Bold
Gram	King Ganesh, King Ganesh+
Moth seed	King Gold
Pigeon Pea	King Trived, King Trived+ , King Super Red

Psyllium	King -18
Fenugreek	Queen Ruchi
Coriander	King Super +
Rjka Bajra	King Gauri, King Amba
Hybrid Maize	King-8666, King-7444, King-9596
Hybrid Cotton BG II	King Sardar BG II, King Kranti BG II, King-81 BG II, King Megik BG II

1.7.3 Mission of the Company

Constantly innovate and improve the production to provide quality seed to farmers by maintaining excellent genetic purity and germination, and also keep ourselves vigilance on the purity of the seed. Provide scientific and improved cultivation technology of the crop to the farmers through exhibition and also a direct demonstration on the farm to enhance the crop production.

1.7.4 Vision of the Company

"Being pioneer in seed production in the country and remain nation class provider of quality seed of oil seeds, cereals, pulses, spice and fibre crops, our sole aim is to increase the productivity of farmers and thus increase national production."

1.8 Practical Utility

The study will be helpful to the company to know which factor affects the groundnut production. This study will be helpful to the company to understand its customers' requirements and according to that they can frame their existing strategy and improve their products. This study will also reveal the knowledge level of the farmer that will help the company to know their customer very well and how to improve their present practices according to their customers' knowledge. The processing cost of wheat seeds will guide company on taking cost reduction measures if require and also may help in formulating their cost budgets. This study will provide important database about the perceived quality of their product among the groundnut

growers that will result in an increase the sell and ultimately retain to their customers. Reasons behind brand switching is to help the company in achieving and maintaining their pool of buyers in future also. The study will help to identify the constraints faced by farmers to purchase groundnut seed. This is beneficial for both i.e., for farmers and company. Thus, the results will be more useful to company officials, farmers and academicians.

1.9 OBJECTIVE OF STUDY

1. To analyze the growth and instability of groundnut seeds
2. Economic of processing of groundnut seeds
3. To study the factors affecting groundnut production
4. To identify reason behind brand switching for groundnut variety of GG-20
5. To find out the constrains faced by the farmer purchasing to groundnut seeds

1.10LIMITATIONS OF THE STUDY

1. This survey was restricted to Junagadh district only.
2. The results was totally derived from the respondent's answers. There might be a difference between the actual and projected results.
3. The sample size will be limited to 120 respondents, which might not be representing the whole district.

CHAPTER – II

REVIEW OF LITERATURE

Literature review aims to portray the critical points of current and collected knowledge on the topic under study. It seeks to describe, summarize, evaluate, clarify and integrate the content of primary reports. Moreover it forms the basis for the justification for future research in the area. As such, review of literature has become an inevitable part of any scientific investigation. Hence a brief review of available literature, related to the study is presented under following heads.

2.1 Growth and Instability

2.2 Processing cost of groundnut seeds

2.3 Factors affecting groundnut production

2.4 Reasons for brand switching for groundnut variety of GG-20

2.5 Constraints faced by the farmer for purchasing the groundnut seeds

2.1 Growth and Instability

Patil and Yeledhalli (2016) analysed growth instability in area, production and productivity of different crops in Bengaluru division. The study was based on secondary data. The Compound Annual Growth Rate (CAGR) and instability index was used to the analyse data. The area and production of cereals observed negative growth but productivity had a positive growth. The growth in area, production and productivity of pulses have been increased significantly.

Samal *et al.* (2017) analysed growth and instability in oilseeds production in Odisha. The main objective of the study was to analysing the district level growth and instability of oilseeds with special emphasis on groundnut in the state of Odisha. The study used secondary time series data. The Compound Annual Growth Rate (CAGR) and Cuddy-Della Valle Index (CDI) were used for data analysis. The I decadal period had experienced overall negative growth of groundnut and total oilseed production. The II decadal period has witnessed remarkable improvement in the growth of groundnut and oilseeds production in the state and also across the districts. However, there are 9 districts with negative growth rate in the II decadal period. The instability in the production of groundnut and total oilseeds have experienced much improvement in the

2nd decadal period. However, 13 districts had high level of instability during the II decadal period.

Sagolsem *et al.* (2017) investigates the growth and instability of major crops in North East India. The study was based on secondary data. The exponential growth function instability index was used to the analyse data. Rice, the major crop in North East India, is growing overtime and become the most dominant crop of the Kharif season. Area, production and productivity of rice have increased manifold overtime and it boosts the total productivity of cereal. Potato and oilseed are also making inroads in the late years. Pulses, fibre and sugarcane are seen as neglected crops in North East India. It can be inferred that there is a wide fluctuation in area, production and productivity. Overall area effect is more dominant factor for increasing the production of the crops. . In pulses, during phase I, there is positive growth in area, production and productivity of 1.71, 1.98 and 0.27 per cent respectively. Phase I with variations in instability indexes. During phase II, it shows little hope in area and production of 0.64 and 0.34 per cent respectively.

Shruthi *et al.* (2017) analyzed the area, production and productivity of groundnut crop in Telangana. The study was based on secondary data. The exponential growth function was used to the analyse data. The results revealed that the compound growth rate of area and production of groundnut in India shows a negative trend while the productivity was positive over the years. In pre bifurcated Andhra Pradesh the annual average production of groundnut during 2011-12 was 1231 thousand tons and the annual average yield per hectare was 873 kg/ha. The area and production of groundnut was high in Rayalaseema region compared to other regions of the state. The area, production and productivity of groundnut in Mahabubnagar district of Telangana was increase over the study year. The annual average production of groundnut crop during 2013-14 was 220 thousand tonnes and annual average yield per hectare during the same period was 1751 kg/ha.

Jain (2018) analysed the growth and instability in area, production, yield and price of rice in India. The study was based on secondary data. The Compound Annual Growth Rate (CAGR) and instability index was used to the analyse data. The analysis shows that at all India level compound annual growth rate of area, production and yield of rice were positive but it had been declining gradually over the periods. In the recent

decade (2000-01 to 2011-12) there is increase in instability at all India level in area, production and yield of rice.

Bist and Kumar (2018) studied on growth and instability analysis of pulses production in India. The study was based on secondary data. The exponential growth function and Cuddy-Della Valle Index (CDI) were used for data analysis. The results have shown a highly significant but low growth rate of 2.14 percent in pulses production during this period. This growth rate is significantly higher in the sub period II. The area and yield under pulses have also shown a marginal but significant growth rate of 0.44 and 1.19 percent respectively. But yield growth rate was found higher than the growth rate in area implying that area allocation under pulses is increasing poorly even after National Food Security Mission (NFSM) while improvements in yield are there.

Gupta (2019) analysed growth and instability analysis of area, production and yield of major cereals in Chhattisgarh plains zone of Chhattisgarh. The study was based on secondary data. Kinked growth rate formula and slight modification was used for instability analysis. The results of growth analysis have shown rising trend in production and yield for most crops during the second sub-period and instability analysis indicated declining trend in instability of production and yield during second sub-period. The relationship between growth and instability was found to be negative during the second sub-period.

Jainuddin *et al.* (2019) studied the determinants of growth and instability of groundnut production in Karnataka. The study was based on secondary data. The Compound Growth Rate Analysis (CAGR), Cuddy-Della Valle Index (CDI) and Hazel's decomposition model was used for data analysis. The growth pattern showed a downward trend along with higher instability in area, production and yield of groundnut in all the districts during period II. The variation in groundnut production was predominantly due to interaction effect of yield and area during period I, whereas change in mean area largely contributed during period II in the state.

2.2 Processing cost of groundnut seeds

Hussaini (2010) evaluated processing of groundnut by women in five rural area of north central Nigeria state, using a sample of 100 women processors randomly selected from the study area. Data analysis was done using descriptive statistics, net

farm income model and data envelopment analysis. The study revealed that average technical and scale efficiency scores were 80 and 83 percent respectively. As per the cost and returns analysis from groundnut processing in cost Rs. 20,250.9/qtl. and net return Rs. 10,586.6/qtl.

Reddy and Kumar (2010) studied an economics of mango processing plants at Chittoor district in Andhra Pradesh. They have selected fourteen units from small scale units, four from medium scale and two from large scale units. Multistage stratified random sampling technique was used for the study. Project evolution technique, financial efficiency was used for analysed data. It is observed that the benefit cost ratio of small firms were higher than the large firm for all the discount rate. The gross ratio was less than one signifying the efficient operation of the firm. It is substantially high and varies from 0.93 for small firms to 0.97 for large firms. On the other hand the Net Present Value (NPV) criteria large firms (Rs.679.7) is rank higher than small and medium firms (Rs.159.1) and (Rs.129.6) respectively is rate of 10 per cent. The study revealed that the small firms are more efficient than the large firms.

Singh and Kardam (2013) done an economic analysis of groundnut crop in Jaipur district of Rajasthan. Multi-stage sampling was used for the selection of primary data of the study. Four villages from selected taluka were selected on the basis of highest area. The cost of cultivation confronted by farmer of selected groundnut crop. In groundnut about 77 per cent cost was variable cost and among fixed cost, renal value of owned land was found highest (17 %) of the total cost. The overall cost of production was Rs. 2399 on cost C3 basis. The gross income per hectare in cultivation of groundnut was Rs. 57557. The net income was workout Rs. 8610. However, return on per rupee with rental value owned land was Rs. 1.16 and without rental value Rs. 1.41.

Banerjee and Shrivastava (2014) carried out an economic analysis of cashew nut processing in India. The survey covers various cashew nut processing units in different parts of West Bengal. Economic data analysis was done in total cost per unit was broken down into fixed cost and operating cost. The results showed that if the plant be operated with full capacity and efficiency then there would be profit of 1329.07 per day, excluding all expenses.

Varalakshmi (2016) done an economic analysis of chicken nuggets processing unit. Primary data pertaining to input use, output yield were collected to compute cost of processing, production and to work out selling price. Data on project cost, cash flows were used to find out the viability of investment. Simple benefit-cost analysis, break-even level, project evaluation techniques have been used to analysed data. The result indicate the the cost of production of nuggets was highest on small units compared to medium and large scale units. All the processing units are found to be economically feasible with NPV of Rs. 7.76, 39.88 and 92.31 lakhs and IRR of 36 per cent, 47 per 20 cent and 71 per cent for small, medium and large scale units respectively. B-C ratio was estimated at 1.52, 1.75 and 2.23 with payback period of 3.17, 2.78 and 2.19 years for small, medium and large scale units respectively.

Pethani (2017) studied economic analysis of pigeon pea processing in Junagadh. The primary data for processing cost of various items like raw materials, labor, storage cost etc. was collected from processing unit. Economic analysis of pigeon pea was calculated by tabular analysis. The study revealed that total fixed cost of pigeon pea seeds was amounted to Rs. 9,06, 608 with the share of 23.30 per cent in total processing cost. Total variable cost of processing of pigeon pea seeds was Rs. 2,79,43,941 with the share of 76.70 per cent in total processing cost. The total cost of processing was estimated to be Rs. 2, 88, 50,549. Gross and net returns were found to be Rs.3, 26, 18,695 and Rs. 37, 68,146.

Khorne *et al.* (2019) studied on economic analysis of processing of rice mill in Maharashtra. Bhandara and Gondiya district was randomly selected. The data was collected by survey method by conducting personal interviews of processors using specially designed schedules prepared for the purpose. The primary data in respect of cost of processing by processors in production was collected. Simple tabular analysis was used. Total variable cost was Rs. 6.10 lakh, Rs. 9.06 lakh and Rs. 14.51 lakh per annum for small, medium and large size group of rice mill. Average total cost per unit per year were Rs.1398491, Rs. 1887490.5 and Rs. 3142475.5 in small medium and large units respectively. Average total cost per unit per year for all size group revealed the share of total fixed cost was 51.97 to 56.32 per cent and 43.68 to 48.02 per cent share total variable cost of total incurred rice mill owners in processing of rice.

Dalla *et al.* (2020) analysed the cost and returns of groundnut production in Qua'an Pan local government area of Plateau State, Nigeria. Multistage sampling technique was used in selecting 150 respondents for the study. Primary data were collected through the use of structured questionnaires and interview technique and were subjected to both descriptive and inferential statistics. The result indicates that majority (79%) of the groundnut farmers acquired their farmland by inheritance. Groundnut production in the study area is profitable. The total revenue (TR), gross margin (GM) and, net farm income (NFI) per hectare obtained were ₦194880, ₦139380 and ₦123730 respectively. The return on naira invested (RNI) by farmers in the study area was ₦1.70 indicating that for every one naira invested, ₦1.70 profit was gained.

2.3 Factors affecting groundnut production

Girei and Giroh (2012) analysed the factors affecting sugarcane production under the out growers scheme in Numan local government area Adamawa state, Nigeria. Primary source collected using structured questionnaires in a random sampling technique. Forty (40) farmers each were selected from the six out grower zones giving total of 240 farmers out of which 120 were retrieved and used for the study. Data collected were analyzed using descriptive statistics and the production function analysis. The study identified inadequate and late allocation of farms and inadequate credit as the major factors of sugarcane production.

Wongnaa (2013) analysed the factors affecting the production of cashew in Wenchi municipality, Ghana. Data collection was through well-structured questionnaire administered on 140 respondents selected through random sampling technique. The methods of analysis used were descriptive statistics and production function analysis using the Ordinary Least Square (OLS) criterion to estimate the parameters of the production function. Results showed that majority of the farmers were ageing and 55.7 percent of them have a maximum of five years of cashew farming experience. Also there was high level of illiteracy as about 61.4 percent of total respondents have no formal education. Farming was majorly on subsistence level as the mean farm size was 3.33 acres. Results further showed that farm size, fertilizer, pesticides, pruning, and education affected cashew production.

Chandio *et al.* (2016) studied factors affecting agricultural production. In the study, secondary source of data was used to examine the factors affecting agricultural production in Sindh province of Pakistan. The study employed Cobb-Douglas production function to examine the effect of factors affecting on agricultural production of Sindh province. The results shows that cropped area, fertilizer consumption and sugarcane support price have positive and significant effect on agricultural production of Sindh province whereas the effect of government expenditure was found negative.

Bilgili *et al*. (2018) studied factors affecting cotton production decisions of farmers. This study aimed to determine the factors affecting cotton production decisions of producers in the Eastern Mediterranean region of Turkey. The data obtained from the questionnaires conducted with farmers. The logistic regression model was used for analysed data. They identified six factors influencing the decision-making in cotton production, which included economic, technical, political, environmental, personal, and product-related factors. The logistic regression model attempted to explain the factors convincing farmers to cultivate cotton. The variable related to the cotton experience of farmers was found significant.

Mwatawala *et al.* (2019) studied an exploration of factors affecting groundnut production in Central Tanzania: Empirical evidence from Kongwa district, Dodoma region. The main objective of the study was to explore factors affecting development of groundnut farming in central Tanzania. Household survey, focus group discussions, key informant interview and documentary review were employed during data collection. Multiple linear regression method was used for analyse data. The majority of farmers were male, belong to active age group married and have adequate education to engage in farming activities. Cost of seeds, cultivated area, education level, poor farming practices and pests, diseases and household size all significantly influenced groundnuts production.

Manzvera *et al.* (2019) analysed profitability and factors affecting groundnut production under irrigation in Zimbabwe. The main objective of the study was to estimating the profitability, as well as factors that affect groundnut (*Arachis hypogea*) production under irrigation in Zimbabwe. 102 groundnut farmers were interviewed by using purposive stratified random sampling method with structured questionnaires. Linear regression analysis method used for analyse data. The 72 percent of interviewed

farmers made profits from groundnut production and marketing, with an average of 40 percent return per United States dollar invested, making groundnut enterprise a profitable venture in the Zimbabwe. Market information access, farmers' experience and cost of labour significantly affected the profitability level of groundnut production under irrigation.

Wai *et al.* (2020) studied the factors influencing profitability of groundnut production and value-added groundnut products in Myinmu township, Sagaing region, Myanmar. The main objective of the study was to analyse value added processing opportunities and profit function of groundnut farmers in Myinmu township, Sagaing region, Myanmar. 150 groundnut farmers were interviewed by using purposive random sampling method with structured questionnaires Descriptive analyses, cost and return analyses and regression analyses were used. The groundnut profit positively and significantly influenced by groundnut yield, while family labour cost, hired labour cost and total material cost were negatively and significantly influenced on profit of groundnut. The profit of highly purified grain, total material cost, family labour cost and hired labour cost were negatively and significantly influenced, and price and processing cost were positively and significantly influenced. The profit of low purified grain, total material cost and family labour cost were negatively and significantly influenced, and price and processing cost were positively and significantly influenced.

Iticha and Taresa (2020) studied on factors affecting adopted of soya bean production technology in Ethopia. A survey data collected from 188 randomly selected smallholder farmers in Tiro Afeta district, Ethiopia. The data were analyzed using descriptive statistics; econometric models and Kendall's Coefficient of Concordance (W). The result from Heckman two step model indicated that education level of household, total livestock holding, improved seed availability, frequency of extension contact, credit use and farm income were positively and significantly influenced where as market distance negatively and significantly affected adoption of soybean production technologies. Also the, result indicated that age, land holding size, and farm income determine the intensity of soybean technologies adoption positively and significantly whereas distance from market affect negatively and significantly.

2.4 Reasons for brand switching for groundnut variety of GG-20

Zalavadiya (2014) studied the brand switching behaviour of farmers towards sprint fungicide. The study was carried out in Junagadh district. Multistage sampling was adopted. Total sample size consisted of 100 famers for the study. Percentage method was used for analysis of data. The study revealed that product is not available in the market. Availability had fewer impacts on brand switching. Major factor is better quality, farmers are willingly changing the brand if the good quality product were available in the market. Brand image is one of the major influencing factor in fungicides.

Velavan *et al.* (2015) studied on brand preference and brand switching behaviour of bt cotton farmers in Andhra Pradesh. Five villages were randomly selected from each mandal, from each village, five irrigated and five rainfed farmers were selected through pre- stratified random sampling method. Factor analysis was used. Yield performance, resistance to pest and disease, seed germination, new varieties, and new technology were found to be an important reason for brand switching.

Hingrajiya (2015) studied the brand switching behaviour of coromandel pesticide in Junagadh district. Multistage sampling was adopted. The sample size was of one-hundred-twenty farmers and thirty dealers. Multiple regression method was used. The study revealed that factors influencing for brand switching from other companies to coromandel, included dealers' recommendation, friend's experience, quality and availability in their order.

Poshia (2016) studied the brand switching behaviour of cumin farmers of Junagadh district. Multistage sampling was adopted. Total sample size consisted of 100 famers for the study. Percentage method was used for analysis of data. The study revealed that (41%) of the farmers had changed their brand preference for the cumin seeds. Majority (33%) farmers had switching brand of the peer group influence and (24%) farmers who changed the brand because of high pest and disease with the old brand. Another reason for switching the brand included low productivity, high price, unavailability and low quality.

Suhagiya (2016) studied the brand switching of cotton farmers towards nuziveedu seeds in Junagadh and Gir Somnath district. Multistage sampling was adopted .The sample size was of one-hundred-twenty farmers. Percentage method was

used for analysis of data. The study revealed that (34%) of the respondents were switched over their brand because of the poor quality of the old brand followed by (30.83%) of those who changed the brand because of poor influence of dealers with the old brand. Another reason for switching the brand included (12.50%) poor brand image, (10%) advertisement and (7.50%) friend experience.

Singh and Bansal (2019) analysed factors influencing brand switching behaviour among Indian youth. To examined the factors which influence brand switching behaviour among customers regarding their mobile phone service providers. A sample of 200 students from different colleges situated in the district Bathinda of Punjab state were chosen as respondent. Multiple regression method is used to analyse data. The four factors i.e. service quality, price, trust and brand image were analysed to know their effect on brand switching behaviour of customers. The value of Adjusted R Square which is .450 which explains that all the independent variables together explain the variation in dependent variable i.e. brand switching. Actual significant value is 0.05 and which shows that there is an association between the dependent variable, Brand switching and the independent variables, Service Quality, Price, Trust and Brand Image.

Appiah *et al.* (2019) studied on brand switching and consumer identification with brands in the smartphones industry. The in-depth semi structured interviews were particularly useful in allowing other questions to be added to further probe for answers and explanations. 18 males and 22 females respondents was taken as a sample. The emerged data were analysed using the thematic analysis method. Brand switching occurs when customers are motivated to review available alternatives in the marketplace due to a change in competitive activities. Socially, switching occurs when a customer's belief in a brand is externally influenced within the social setting. When the boundary between the “in-group” and the “out-group” is impermeable and changing, group.

Detroja (2019) studied the brand switching behavior of farmers towards Coromandel fertilizer in Junagadh district. Multistage sampling was adopted. Total sample size consisted of 100 famers for the study. Multiple regression method was used to analyze the data. The study revealed that main reasons for brand switching from other companies to Coromandel included price, availability, credit facility and recommended

by dealers.

2.5 Constraints faced by the farmers

Shalini and Chandra (2014) analysed constraints faced by the farmers in cultivation of major crops in Uttarakhand. The study is based on personal interview with 100 farmers of the district. Garret's ranking method was used for analysed data. The study finds that the major financial, situational and marketing constraints faced by the farmers in cultivation of major crops include the cumbersome process of taking aid from bank, late availability of loan, high interest rate, large amount of down payment requirement, problem of day by day deterioration of soil health, water table going down every year, lack of storage facility, lack of suitable markets, buyer's monopoly power and lack of adequate price information system.

Dhurwey *et al.* (2015) identified the production and marketing constraints of major cole vegetable crop in Bemetara district, Chhattisgarh and hundred sample were selected randomly with multistage random sampling. Ten villages and ten cole vegetable grower from each of selected villages were considered to collect the required information. Percentage method was used for analysed data. In the study, it was found that major constraints were scarcity of labour, followed by problem of high infestation of diseases, lack of technical knowledge, lack of soil testing facilities and lack of information regarding crop cultivation. The major constraints faced by farmers in marketing were lack of proper method for harvesting of crop, lack of facility regarding standardization and grading and lack of regulated and co-operative market.

Tiwari *et al*. (2016) studied the constraints faced by the farmers and their remedies in technological adoption of rice wheat- cropping system in eastern Uttar Pradesh. The main objective of the study was to assess the constraints faced by the farmers in rice wheat cropping system in Milkipur and Amaniganj block of Faizabad district of Eastern Uttar Pradesh. A total number of 200 farmers were selected through proportionate random sampling technique from eight sample villages. The constraints faced by the farmers were general-illiteracy, poor socioeconomic conditions and lack of technical knowledge and awareness, small landholdings, low precipitating come, underdeveloped physical infrastructures and lack of proper marketing system.

Shankar *et al*. (2016) studied on buying behaviour of cotton growers with reference to cotton seed in middle Gujarat. To identify the problems faced by the cotton growers of middle Gujarat in cotton seed marketing. A multi-stage sampling design was applied for the study and required data were collected from 120 cotton growers (26 marginal, 19 small, 30 medium and 45 large) spread over 12 villages of 6 talukas, covering three cotton growing districts of the middle Gujarat. Garrett ranking technique was used analysed data. The most important constraint viewed by the cotton growers was non-availability of the branded seed demanded in desired quantity followed by non-availability of the branded seed in time.

Pandya *et al*. (2017) studied constraints faced by bt cotton growers in Bharuch district of Gujarat state. The district comprises of eight talukas, among which Bharuch, Jambusar, and Amod talukas were randomly selected for the study. From each taluka three villages were selected randomly with maximum number of Bt. cotton growers. In each of the selected villages farmers were selected according to random sampling to form 90 respondents as a sample size for the study. Frequency, percentage, ranking and correlation, were used to analyse the data. The results of the study revealed that the major input constraints, encountered by the Bt. cotton growers were inadequate supply of electricity, lack of irrigation facility and canal water availability, High cost of plant protection chemicals, Non availability of required quantity of FYM, High cost of chemical fertilizer, High cost of hybrid seeds and Lack of credit facility. With respect to technical constraints, majority of the respondents faced problem of lack of knowledge disease management, High initial cost, Lack of knowledge to manage the pest and lack of knowledge about different cultivation practices. Majority of the respondents faced the problem of labour. Non-availability of labours at the required time and high wages of labourers. Regarding marketing, Low price of produce, Exploitation by middlemen were faced by farmers.

Daudi *et al*. (2018) studied the groundnut production constraints, farming systems, and farmer-preferred traits in Tanzania. The main objective of the study was to document the groundnut farmer's major production constraints, farming systems, and varietal trait preferences in selected agro ecologies of Tanzania. Data were collected from 170 groundnut farmers using a semi structured questionnaire, focus group discussions, and field observations. Chi-square method and Statistical Package

for the Social Sciences (SPSS) software used for analyse data. Diseases, pests, drought, and no availability of improved seeds were identified as the main production constraints.

Gohain and Singh (2018) analysed those problems and constraints faced by farmers in marketing of agricultural produce in Punjab. The main objective of the study was to find out the problems of farmers in the marketing of paddy, wheat, maize and cotton. A total sample of 180 farmers from 12 villages of six districts was selected for the study. Garretts' ranking method use for analyse the data. The results from the study indicated that the most important problem identified by the farmers in the marketing of paddy and wheat was the delay in procurement of paddy in the markets followed by the deduction of payments by commission agents due to higher moisture content in the grains. The problem faced by majority of farmers in the marketing of maize and cotton was the lack of public procurement of the produce and lack of remunerative price of the crop respectively.

Kumar *et al*. (2018) studied constraints faced by the farmers in production and marketing of vegetables in Haryana. Study was carried out in Sonipat for cauliflower, Yamunanagar for Potato, Ambala for onion, Karnal for tomato, Gurugram for radish. The primary data and hence data was collected through proper structured schedule. Major production related constraints expressed by vegetable growers were lack of information about cultivation of vegetables, higher cost of fertilizers, seeds and labour and their unavailability when needed, lack of suitable cold storage facilities, high cost of storage, costly weedicides, spurious plant protection chemicals, and lack of credit. Major marketing related constraints expressed in marketing of vegetables were lack of market information, higher price fluctuation, higher amount of price spread, malpractices in weighing and storing of vegetables, problem of storage facilities, lack of processing industries/units, higher price fluctuations, high cost of labour, high transportation cost, and delay in payments.

CHAPTER-III

METHODOLOGY

The methodology adopted for evaluation of the objectives the present study is described under following heading.

3.1 Location

3.2 Sampling Technique

3.3 Sources of Data

3.4 Statistical Analysis

3.1 LOCATION

Junagadh district was selected purposively as the majority of the farmers of this district are growing groundnut crop. It occupies significant share in area and production of groundnut. The climatic condition and soil is favorable for groundnut cultivation in this district.

The geographical location of Junagadh district is 20.44º to 21.40º North (Latitude) and 69.40º to 71.05º East (Longitude). The maximum temperature of this district is 42ºC and minimum temperature is 10ºC. There are six main rivers which flow through the district which are Ojhat, Uben, Hiran, Raval, Madhuvanti and Machhundri. The average rainfall of Junagadh district is 787 mm. Junagadh district is located in western Gujarat and is surrounded by Arabian Sea to its South. The district is divided into 9 talukas of which major ones include Junagadh, Keshod, Manavadar, and Vanathli.

The geographical area of Junagadh district is 8,846 sq. km. Agriculture is the backbone of the district economy. Major crops produced in the district are wheat, oilseeds (also include groundnut), cotton, mango, banana, onion and brinjal.

The methodology comprises selection of the study area, type of data information, sampling techniques and tool for analysis of data. It is divided in the following sub title:

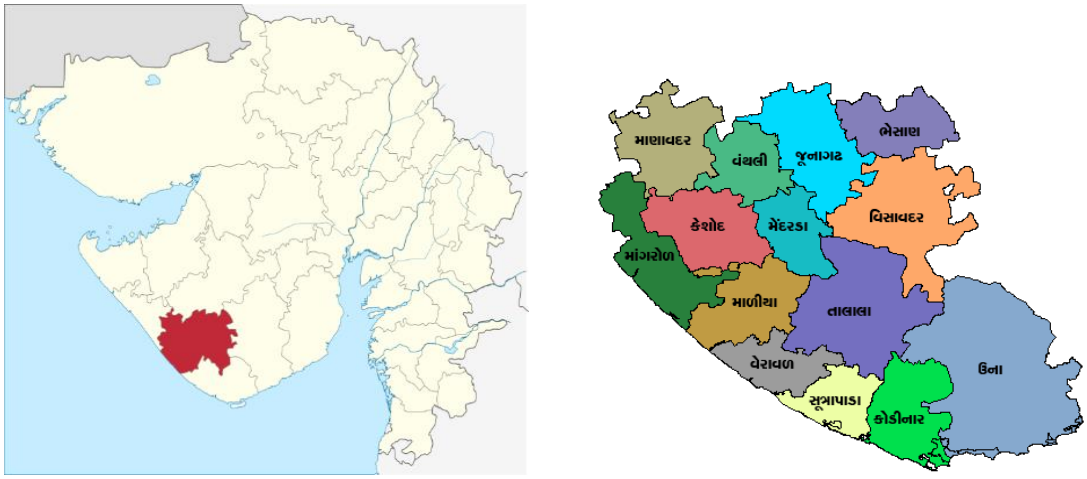

Figure 3.1 Location of study

3.2 Sampling technique

Multi stage purposive sampling technique was used for data collection. At first stage Junagadh district was selected purposively for the study because company wants to improve retail marketing network in Junagadh district. GG-20 variety of the groundnut was selected. The reason behind selection of groundnut seed variety GG-20 is the large number of farmers adapting it in Junagadh district because of suitable climate conditions and its better immunity against insect pests, which ultimately results in availability of vast amount of research data to analyse the market more accurately. At second stage four taluka's namely Keshod, Vanthali, Junagadh and Manavadar was selected as the large numbers of groundnut growers are available in those taluka. At third stage from each taluka two villages were selected depending on the number of customers of the company available in that particular village. So, 15 farmers from each village were selected by random sampling technique. Thus, total 120 farmers were selected.

Table 3.1 Distribution of Sample Size

Districts	Taluka	Village	No. of farmers	Total Sample
Junagadh	Junagadh	2	15	30
	Vanthli	2	15	30
	Manavadar	2	15	30
	Keshod	2	15	30
	Total	8	-	120

3.3 SOURCES OF DATA

The data was collected from both primary and secondary sources.

3.3.1 Primary Data

Primary data was collected with the help of the well-prepared questionnaires by seeking telephonic interview of the farmers. Primary data was collected related to age, education, household size, annual income and experience. Other relevant primary data like factors of groundnut production, brand switching, constrains of purchasing groundnut seeds was collected through different questions.

3.3.2 Secondary data:

The secondary data and other relevant information for the study was gathered from the published reports, journals, company's website *etc*. For processing cost point of view company's published audited cost sheet and profit & loss account of last five years was taken into consideration.

The secondary data was collected through the following source:

- Direct from the company
- Product leaflets and broacher's
- Company website

3.4 Statistical analysis:

To fulfil the specific objectives of the study based on nature and extent of availability of data, growth, instability, multiple liner regression and Garrett's ranking technique was used. Each method to be used for the study are described as below:

3.4.1 Growth and instability

The growth rate of selling of groundnut seeds in Gujarat state for last twenty years was computed by using following exponential functional (Ajum and Madhulika, 2018).

$$Y_t = ab^t$$

Where,

Y= Area/Production/Productivity

a = Intercept

t = Time variable

b = Regression coefficient

The above equation can be written as:

$$\text{Log } Y_t = \text{Log a} + t \text{ Log b}$$

The value of log b in equation (2) were computed using the formula,

$$\text{Log b} = \frac{(\sum t \text{ Log Y} - (\sum t \sum \text{Log Y/N}))}{\sum t^2 - \frac{(\sum t^2)}{(N)}}$$

The percentage compound growth rate (r) was computed growth rate was worked out by:

$$r = [(\text{Antilog of log b}) - 1)] \times 100$$

Instability:

$$\text{Instability} = CV(1 - R^2)^{1/2}$$

Where,

CV = Coefficient of variation per cent

R^2 = Coefficients of determination from a time-trend regression adjusted by the number of degrees of freedom

3.4.2 Processing cost of groundnut seeds (Pethani, 2017)

Sr. No.	**Items of cost**	**Amount (Rs.)**
A.	**Fixed cost :**	
1.	Depreciation on building	
2.	Depreciation on machinery & equipment's	
3.	Insurance fees	
4.	Interest on fixed capital @ 10%	
	Total fixed cost:	

B	**Variable cost**	
1.	Electricity & fuel charges	
2.	Wages to labor	
3.	Repair & maintenance charges	
4.	Loading/Unloading charges	
5.	Storage cost	
6.	Grading & Packaging cost	
7.	Revalidation & Sealing charges	
8.	Interest on working capital @10%	
	Total variable cost	
	Total cost	
	Total quantity processed (qtl)	
	Cost of processing (per qtl)	

3.4.3 Multiple Linear Regression

The multiple linear regression analysis was used to identify factors affecting Groundnut production of farmer (Mwatawala *et al.*, 2019).

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + U$$

Where,

Y = Yield of Groundnuts (Kg/ha)

X_1 =Sex of farmer (1 if male and 0 if a female)

X_2 = Age of farmer (Year)

X_3 = Education (Year)

X_4 = Household size (Number of persons aged 18-60 years in a household)

X_5 = Access to reliable market information (1=if yes 0 = if otherwise)

X_6 = Poor farming practices (1=if yes 0 = if otherwise)

X_7 = Cost of seeds (Rs/ha)

X_8 = Pests and diseases (1=if yes 0 = if otherwise)

X_9 = Area under groundnut cultivation (ha)

a = Constant term

U= error term

$X_1 – X_9$ = Regression coefficient

3.4.4 Reason behind brand switching

To study the reasons behind brand switching to GG-20 variety by the farmers in Junagadh district, simple tabular analysis was used. The parameters for the study of brand switching of groundnut growers are given below. (Suhagiya, 2016)

- Price (High, Medium, Low)
- Availability of preferred brand (High, Medium, Low)
- Size of package (Kg)
- Credit facility (Yes, No)
- Yield (Increase, Moderate, Decrease)
- Recommendation (Dealer, Pear group influence, Advertisement)
- Risk of pest and disease (High, Medium, Low)
- Low productivity (Yes, No)

3.4.5 Garrett's Ranking method:

$$\text{Percent position} = \frac{100\ (R_{ij} - 0.5)}{N_j}$$

Where,

R_{ij} = Rank given to the i^{th} attribute by the j^{th} individual

N_j = Number of attributes ranked by the j^{th} individual

By referring to the Garrett's table, the per cent positions estimated was converted into scores. Thus, for each factor, the scores of the various respondents become added and then mean value was estimated. The attributes with the highest value are considered as the most important one and the other followed in order (Gohain and Singh, 2018).

Constraints faced by farmers:

- Poor quality of the groundnut seeds
- Unavailability of improved varieties
- Poor supply of groundnut seeds
- High cost of groundnut seeds
- Germination
- Low production
- Unavailability of seed in local area
- Lack of subsidy
- Lack of credit facility
- High transportation cost

CHAPTER- IV

RESULT AND DISCUSSION

In regard with the objectives of the study, the collected primary and secondary data has been analyzed by employing appropriate tools and techniques. In this chapter, the major findings of the study are represented in the form of tables and figures and discussed with proper theoretical explanation. The present chapter is further divided into the following sections for better understanding and cover all of the objectives:

4.1 Growth and instability

4.2 Processing cost of groundnut seeds

4.3 Factors affecting groundnut production

4.4 Reasons for brand switching for groundnut variety of GG-20

4.5 Constraints faced by the farmer for purchasing

4.1 GROWTH AND INSTABILITY:

4.1.1 Growth in area, production and yield

Table 4.1 shows the compound growth rate of groundnut area, production and yield during two sub-periods and the entire study period. Duration of period I is 1999-00 to 2008-09, duration of period II is 2009-10 to 2018-19 and overall study period is 1999-00 to 2018-19. In the overall study period (1999-00 to 2018-19), as well as in the two sub-periods, the area under groundnut showed a considerable and negative growth rate. During the overall study period (1999-00 to 2018-19), area under groundnut crop grew at a compound annual growth rate of -10.05 per cent in Gujarat. The period I (1999-00 to 2008-09) had the maximum compound growth of area under groundnut crop *i.e.* 9.65 per cent while in period II (2009-10 to 2018-19) it declined to 26.21 per cent. The increase in acreage in cotton can be attributed to factors such as tolerance to a variety of agro-climatic conditions, decreased labour costs and a lower water table.

During the study's overall duration, as well as periods I (1999-00 to 2008-09) groundnut production had a significant and positive compound rate. But during period II (2009-10 to 2018-19) groundnut production had non-significant and negative compound rate. The compound growth rate analysis showed that the highest and

significant growth rate during period I (1999-00 to 2008-09) was 38.67 per cent per annum followed by period II (2009-10 to 2018-19) with -26.21 per cent per annum. During overall period (1999-00 to 2018-19) of study, groundnut production in Gujarat was decreased with a compound growth rate of 28.01 per cent per annum in production. That might be due to area under groundnut cultivation in overall period had decreased from 1.82 million hectares in 1999-00 to 1.68 million hectares in 2018-19. The remaining increase in production was due to increase in the yield.

Positive and significant growth trend was observed during overall study period (1999-00 to 2018-19) as well as during two different periods for groundnut yield in Gujarat. During the overall study period (1999-00 to 2018-19) the yield of groundnut registered positive and significant annual growth and it was decreased with a compound growth rate of 14.28 per cent per annum. The highest growth of groundnut yield observed in period I (1999-00 to 2008-09) *i.e.* 37.40 per cent per annum followed by period II with 18.57 per cent per annum. Yield has been increased from introduction of improved variety, coupled with adequate rainfall.

Table 4.1 Compound growth rate in area, production and yield of groundnut

Period	**Parameters**	**Area** (Mha)	**Production** (MT)	**Yield** (kg/ha)
Period I (1999-00 to 2008-09)	CAGR (%)	9.64781	38.6755	37.404
Period II (2009-10 to 2018-19)	CAGR (%)	-26.21	-26.21	18.576
Overall Period (1999-00 to 2018-19)	CAGR (%)	-10.05	28.016	14.28

4.1.2 Instability in area, production and yield

The Cuddy Della Vella Index was used to determine the variability of groundnut acreage, production and yield in overall study period (1999-00 to 2018-19) and was presented in table 4.2. During the overall study period (1999-00 to 2018-19) low instability was reported in areas under groundnut cultivation in Gujarat with an estimated instability index of 28.34 percent. In period II (2009-10 to 2018-19)

instability decline from 4.50 per cent in the period I (1999-00 to 2008-09) to 21.23 per cent. It could be due to decrease in the area under crop in the second period as a result of drought and insufficient rainfall.

During the entire study period (1999-00 to 2018-19) production instability was 47.24 per cent. Production instability fell to 41.78 per cent in period II (2009-10 to 2018-19) from 50.44 per cent in period I (1999-00 to 2008-09). It could be attributable to an increase in yield.

During the entire study period (1999-00 to 2018-19) low yield instability was recorded at 33.14 per cent and yield instability decreased to 40.42 per cent in period II (2009-10 to 2018-19) from 37.58 per cent in period I ((1999-00 to 2008-09).

The study found out that the area, production and yield of groundnut are less variable and stable.

Table 4.2 Instability in area, production and yield of groundnut

Period	**Parameters**	**Area** (Mha)	**Production** (MT)	**Yield (**kg/ha)
Period I (1999-00 to 2008-09)	**CV (%)**	24.54	50.77	46.87
	Instability Index	21.23	50.44	37.58
Period II (2009-10 to 2018-19)	**CV (%)**	4.63	55.35	53.77
	Instability Index	4.50	41.78	40.42
Overall Period (1999-00 to 2018-19)	**CV (%)**	34.02	48.88	38.32
	Instability Index	28.34	47.24	33.14

4.2 PROCESSING COST OF GROUNDNUT SEEDS

Total cost

Total cost in economic, the sum of all cost incurred by firm in producing a certain level of output. The sum of fixed costs, variable costs, and semi-variable costs. In the context of investments, the total amount spent on a particular investment, including the price of the investment itself, plus commissions, fees, other transaction costs, and taxes.

Fixed cost

These costs were those that were usually not directly related to the amount of use. In accounting and economics, fixed cost also known as indirect cost or overhead cost are business expenses that are not depend on the level of good or services produced by the business. This includes depreciation, investment interest, housing rent and insurances. They tend to be recurring, such as interest or rent being paid per month.

Variable cost

A variable cost is a corporate expense that varies with production output. Variable costs are those costs that vary depending on a company's production volume; they rise as production increases and fall as production decreases. Variable costs differ from fixed costs such as electricity charges, fuel charges, wages of labor, repair and maintenance charges loading/ unloading charges, store cost, grading and packaging cost, revalidation and selling charges, interest on working capital, advertising and office supplies, which tend to remain the same regardless of production output.

Depreciation

Depreciation may be defined as the decrease in value of a piece of property during a period of time. Company calculate deprecation by return down value method. Depreciation value is dependent on the life expectancy of the machine. Annual interest on investment is charged against the piece of equipment as an initial or guaranteed return to owners and investors, such as bond, stock, or mortgage holders with a contract rate of interest on the investment. Service and maintenance would include lubrication; wear out part replacement, repair, cleaning etc. of the machinery. These charges should be estimated accurately, since they are related directly on the basis of the production. Building cost is advisable to be included in fixed annual charge; this cost also depends on location and facilities available with the building. Depreciating assets helps companies earn revenue from assets while expensing apportion of its cost each year the asset is in use.

Description

The processing cost of groundnut seeds was calculated using the last five year(2016-20) data and is presented in table 4.3. The results indicated that total fixed cost for groundnut processing was Rs. 1,35,02,743. Total variable cost for processing of groundnut seeds was Rs. 1,74,500 in total processing cost. In different variable

costs, the highest cost was observed for wages to labor (Rs. 24,10,350) and repair and maintenance charges(Rs. 8,10,200). The total cost of possessing was estimated to be Rs. 13,677,243. Total Quantity processed was 1,25,000 qtl, cost of processing of groundnut is 109.42 per qtl.

Table 4.3 Processing cost of groundnut seeds

Sr. No.	Items of Cost	Amount (Rs.)
A.	**Fixed cost :**	
1.	Depreciation on building	76,38,050.00
2.	Depreciation on machinery & equipment's	46,76,685.00
3.	Insurance fees	6,23,008.00
4.	Interest on fixed capital @ 10%	5,65,000.00
	Total fixed cost:	**1,35,02,743.00**
B	**Variable cost**	
1.	Electricity & fuel charges	2,45,080.00
2.	Wages to labor	24,10,350.00
3.	Repair & maintenance charges	8,10,200.00
4.	Loading/Unloading charges	1,12,200.00
5.	Storage cost	150,000.00
6.	Grading & Packaging cost	2,45,250.00
7.	Revalidation & Sealing charges	24,500.00
8.	Interest on working capital @10%	4,50,110.00
	Total variable cost	**1,74,500.00**
	Total cost	**13,677,243.00**
	Total quantity processed (qtl)	**1,25,000.00**
	Cost of processing (per qtl)	**109.42**

4.3 FACTORS AFFECTING PRODUCTION

Table 4.4 shows the factors affecting groundnut production o. The result shows that the value of coefficient of multiple determination R^2 0.85, which implies that the explanatory variable included in the function explained over 85 per cent of variation in the groundnut production of farmer. The impact of factors cropping area was statistically significant at 1 per cent and 5 per cent level, the coefficient is positive (β=1948.518) indicating a positive association between cropping area and groundnut production. This means that the area of land cultivated is mostly associated with production per unit area when factors are kept constant. Pest and disease statistically significant at 1 per cent and 5 per cent level, the coefficient is negative (β= -2797.79) indicating negative association between pest and disease and groundnut production, this means when there are less pest and disease, production increases. Other factors has no influence on the groundnut production as they are all non-significant according to result.

Table 4.4 Factors affecting groundnut production of farmers

Factors	Coefficients	Standard Error	t Stat	P-value
Intercept	3902.338	1995.467	1.955601	0.053025
Cropping area (ha)	1948.518	299.1019	6.514562	0.00
Cost of seeds (kg/ha)	-0.09917	0.59821	-0.16577	0.868639
Gender of farmer	-674.511	1354.619	-0.49793	0.619516
Age of farmer	11.55013	22.0693	0.523357	0.601769
Education	-5.29317	46.19621	-0.11458	0.908985
Household size	-138.607	84.54477	-1.63945	0.10395
Access to reliable market info.	-394.014	540.2893	-0.72926	0.467376
Pest and diseases	-2797.79	854.412	-3.27452	0.001412

4.4 REASONS BEHIND BRAND SWITCHING

The reasons behind brand switching for GG-20 variety by sample farmers with multiple reasons are presented in table 4.13. Majority of farmers switched the brand due to high price (20%), recommendation by dealer and pear group (18.33%) and

unavailability of preferred brand of previous brand (16.67%), followed by risk of pest and disease (11.66%), size of package (10.83%) and only 7.5 per cent of farmer switched their brand for credit facility and low productivity, the main reason for brand switching by farmer was price and recommendation by dealer and pear group, unavailability of preferred brand.

Table 4.5 Reasons behind brand switching

Reasons	No. of farmers	Percentage of farmers
High price of previous brand	24	20
Unavailability of preferred brand	20	16.67
Size of package	13	10.83
Credit facility	9	7.5
Yield	16	13.33
Recommendation by dealer and pear group	22	18.33
Risk of pest and disease	14	11.66
Low productivity	3	2.5

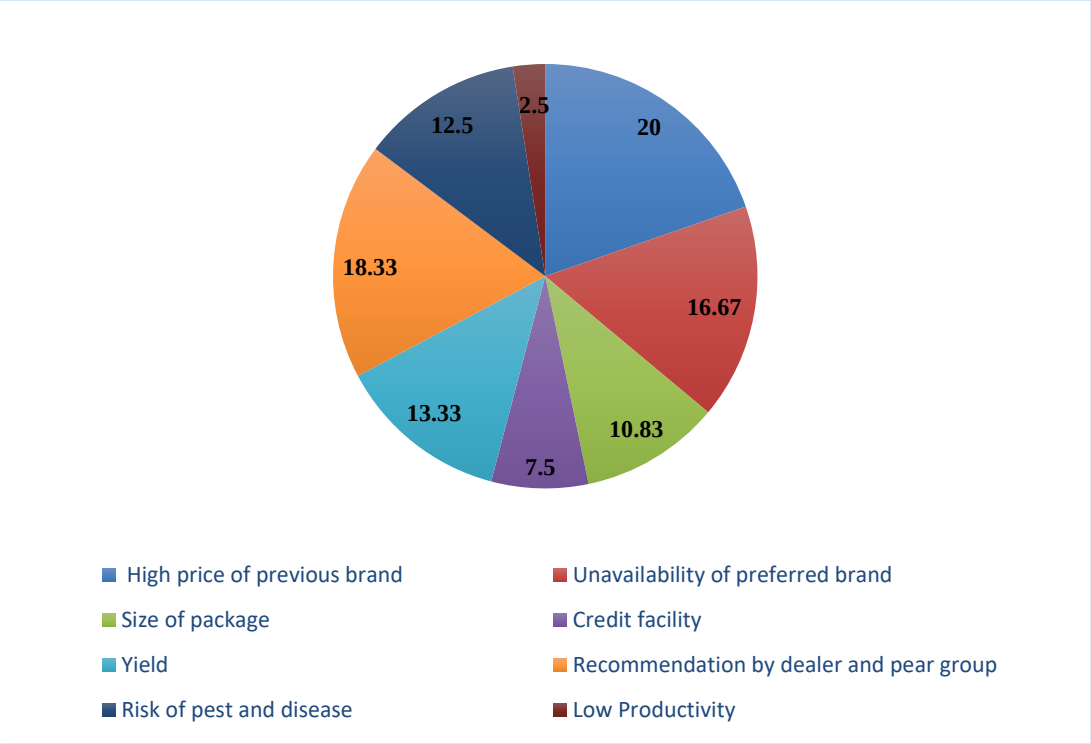

Fig. 4.1 Brand switching for groundnut verity of GG-20

4.5 CONSTRAINTS FACED BY FARMERS

Table 4.6 shows the constraints faced by farmer in purchasing of groundnut seeds. The rank were given by using Garret's ranking method. As per the data revealed from the table first and foremost constraint that has been faced by farmers was unavailability of improved varieties with mean score 56.35, followed by high cost of groundnut seeds with mean score 52.26, germination with mean score 51.55, lack of credit facility with mean score 51.39, low production with mean score 51.18, poor quality of groundnut seeds with mean score 50.78, high transportation cost with mean score 48.86, lack of subsidy with mean score 48.3, unavailability of seeds in local area with mean score 45.23, poor supply of groundnut seeds with mean score 43.74.

Table 4.6 Constraints faced by farmers in purchasing the groundnut seeds (n=120)

Sr. No.	Constrains	Total Score	Mean Score	Rank
1	Poor quality of groundnut seeds	6094	50.78	VI
2	Unavailability of improved varieties	6762	56.35	I
3	Poor supply of groundnut seeds	5249	43.74	X
4	High cost of groundnut seeds	6272	52.26	II
5	Germination	6186	51.55	III
6	Low production	6167	51.18	V
7	Unavailability of seeds in local area	5428	45.23	XI
8	Lack of subsidy	6142	48.3	VIII
9	Lack of credit facility	5796	51.39	IV
10	High transportation cost	5864	48.86	VII

CHAPTER – V

SUMMARY AND CONCLUSIONS

Agriculture, as the backbone of Indian economy, plays the most crucial role in the socio-economic sphere of the country. India as a predominantly agricultural country attributes a major share of its overall development to the agriculture sector. Cultivated groundnut (Arachis hypogaea L.) or peanut, is a self-pollinated annual legume crop, widely grown for its high-quality edible oil and food use in the tropical and warm temperate regions of the world. India is the world's leading producer of groundnuts, with 4.94 million hectares (12.20 million acres) accounting for 17.32 per cent of global production and 6.70 million tonnes accounting for 14.55 per cent. China is first ground production country. In major producing state Gujarat, it was sown in 15.50 lakh hectares (38.30 lakh acres) followed by 5.73 lakh hectares (14.15 lakh acres) in Rajasthan, 5.10 lakh hectares (12.60 lakh acres) in Andhra Pradesh.

With this background, the present study was carried out with the following specific objectives.

1. To analyze the growth and instability of groundnut seeds
2. Economic of processing of groundnut seeds
3. To study the factors affecting groundnut production
4. To identify reason behind brand switching for groundnut variety of GG-20
5. To find out the constrains faced by the farmer purchasing the groundnut seeds

Multi stage purposive sampling technique was used for data collection. At first stage Junagadh district was selected purposively for the study because company wants to improve retail marketing network in Junagadh district. At second stage four taluka’s namely Keshod, Vanthali, Junagadh and Manavadar was selected. At third stage from each taluka two villages were selected depending on the number of customers of the company available in that particular village. So, 15 farmers from each village were selected by random sampling technique. Thus, total 120 farmers were selected. The data was collected from both primary and secondary sources. Primary data was collected with the help of the well-prepared questionnaires by seeking telephonic interview of the farmers. Primary data was collected related to age, education, household size, annual income and experience. The other information

required for the study regarding company and its product were collected directly from the company.

The analysis of data was done by using various statistical method and techniques like exponential function was used to study growth and instability. Different cost like fixed cost, variable cost was used to study processing cost groundnut seeds. Multiple linear regression was used for factors affecting groundnut production. Tabular analysis was used for reason behind brand switching. Constraints were identified with the help of Garret's ranking method.

5.1 MAJOR FINDINGS OF THE STUDY

5.1.1 Analysis of growth and instability

The compound growth rate of groundnut area, production and yield during two sub-periods and the entire study period. Duration of period I is 1999-00 to 2008-09, duration of second period II is 2009-10 to 2018-19 and overall study period is 1999-00 to 2018-19. In the overall study period (1999-00 to 2018-19), as well as in the two sub-periods, the area under groundnut showed a considerable and negative growth rate. The period I (1999-00 to 2008-09) had the maximum compound growth of area under groundnut crop *i.e.* 9.65 per cent while in period II (2009-10 to 2018-19) it declined to 26.21 per cent.

During the study's overall duration, as well as periods I (1999-00 to 2008-09) groundnut production had a significant and positive compound rate. But during period II (2009-10 to 2018-19) groundnut production had non-significant and negative compound rate. During overall period (1999-00 to 2018-19) of study, groundnut production in Gujarat was decreased with a compound growth rate of 28.01 per cent per annum in production.

During the overall study period (1999-00 to 2018-19) the yield of groundnut registered positive and significant annual growth and it was decreased with a compound growth rate of 14.28 per cent per annum. The highest growth of groundnut yield observed in period I (1999-00 to 2008-09) *i.e.* 37.40 per cent per annum followed by period II with 18.57 per cent per annum.

The Cuddy Della Vella Index was used to determine the variability of groundnut acreage, production and yield in overall study period (1999-00 to 2018-19.During the overall study period (1999-00 to 2018-19) low instability was reported

in areas under groundnut cultivation in Gujarat with an estimated instability index of 28.34 percent. In period II (2009-10 to 2018-19) instability decline from 4.50 per cent in the period I (1999-00 to 2008-09) to 21.23 per cent. During the entire study period (1999-00 to 2018-19) production instability was 47.24 per cent. Production instability fell to 41.78 per cent in period II (2009-10 to 2018-19) from 50.44 per cent in period I (1999-00 to 2008-09). During the entire study period (1999-00 to 2018-19) low yield instability was recorded at 33.14 per cent and yield instability decreased to 40.42 per cent in period II (2009-10 to 2018-19) from 37.58 per cent in period I ((1999-00 to 2008-09).

5.1.2 Processing cost of groundnut seeds

The processing cost of groundnut seeds was calculated using the last five year data. The results indicated that total fixed cost for groundnut processing was Rs. 1,35,02,743. Total variable cost for processing of groundnut seeds was Rs. 1,74,500 in total processing cost. The different variable cost, the highest cost was observed for wages to labor (Rs. 24,10,350). The total cost of possessing was estimated to be Rs. 13,677,243. Total Quantity processed was 1,25,000 qtl, cost of processing of groundnut is 109.42 (per qtl).

5.1.3 Factors affecting production

The result for this objective revealed that 85 per cent of variation in the groundnut production of farmer. Cropping area was highly significant and positively affecting usage satisfaction level of groundnut production. This means that the area of land cultivated mostly associated with production per unit area when factors are kept constant. Pest and disease was significant and negative affecting usage satisfaction level of groundnut production. This means when there are less pest and disease, production increases. Other factors has no influence on the groundnut production as they are all non-significant according to result.

5.1.4 Reasons behind brand switching for groundnut variety of GG-20

The reasons behind brand switching for GG-20 variety by sample farmers with multiple reasons are there. Majority of farmers switched the brand due to high price, recommendation by dealer and pear group and unavailability of preferred brand, followed by risk of pest and disease, size of package and only of farmer switched their brand for credit facility and Low Productivity. The main reason for brand switching

by farmer was price and Recommendation by dealer and pear group, unavailability of preferred brand.

5.1.5 Constraints faced by farmers

Major constraints faced by farmers are unavailability of improve varieties, high cost of groundnut seed, germination, lack of credit facility, low production, poor quality of groundnut seeds, high transportation cost, lack of subsidy, unavailability of seed in local area, poor supply of groundnut seeds.

5.2 CONCLUSION

The project was carried out growth, instability and cost of processing of groundnut seeds in Junagadh district. Area, production and yield of groundnut had negative growth during the overall period (1999-00 to 2018-19) in Gujarat. Low instability in area, production and yield of groundnut were observed during overall study period (1999-00 to 2018-19). Cultivated area, pest and disease significantly influenced groundnut production in Junagadh district. High price of preferred brand, recommendation by dealer and pear group and unavailability of preferred brand were the three major reasons behind brand switching. Major constraints were unavailability of improved varieties, high cost of groundnut seeds and germination faced by groundnut farmers.

BIBLIOGRAPHY

Agricultural Market Intelligence Centre, 2020. Groundnut Outlook.PJTSAU.3p.

Anjum, S. and Madhulika, 2018. Growth and instability analysis in Indian agriculture. *International Journal of Multidisciplinary Research and Development.* **5(11)**: 119-125.

Anonymous, 2021. Company introduction. Available at <https://www.westernbioseeds.com/> accessed on 3rd June, 2021.

APEDA AgriXchange, 2019. Export of groundnut from India. Available at < https://agriexchange.apeda.gov.in/product_profile/exp_f_india.aspx?categorycode=0501> last access 8th July, 2021.

Appiah, D.; Ozuem, W.; Howell, K. E. and Lancaster, G. 2019. Brand switching and consumer identification with brands in the smartphones industry. *Journal Consumer Behaviour.* **18**: 463–473.

Banerjee, S. and Shrivastrava S. L. 2014. Economic analysis of cashew nut processing in India. *Economic Affairs.* **59(3)**: 429-437.

Bilgili, M. E.; Yilmaz, H.; Akkoyun, S.; Vurarak, Y. and Gul, M. 2018. Factors affecting cotton production decisions of farmers: Eastern Mediterranean region, Turkey. *Scientific Papers Series Management, Economic Engineering in Agriculture and Rural Development.* **18(2)**: 41-50.

Bist, A. and Kumar, A. 2018. Growth and instability analysis of pulses production in India. *International Journal of Agriculture Sciences*. **10(14)**: 6722-6724.

Chandio, A. A.; Jiang, Y.; Koondhar, M. A. and Guangshun, X. 2016. Factors affecting agricultural production: An evidence from Sindh (Pakistan). *Advances in Environmental Biology.* **10(9)**: 164-171.

Chauhan, J. S.; Prasad, R. S.; Pal, S.; Choudhury, P. R. and Bhaskar, U. K. 2016. Seed production of field crops in India: Quality assurance, status, impact and way forward. *Indian Journal of Agricultural Sciences.* **86 (5)**: 563–79

Dalla, A. A.; Vihi, S. K.; Jesse, B. and Tor, L. G. 2020. Cost and returns analysis of groundnut production in qua'an pan local government area of Plateau state, Nigeria. *Asian Journalof Research in Crop Science*. **5(3)**: 31-40.

Daudi, H.; Shimelisa, H.; Lainga, M.; Okoric, P. and Mpondab, O. 2018. Groundnut production constraints, farming systems, and farmer-preferred traits in Tanzania. *Journal of Crop Improvement.* **35(3)**: 1-17.

Detroja, K. C. 2019. Marketing mix and brand switching behaviour of farmers towards Coromandel Fertilizer in Junagadh district. M.B.A. (Agri Business) Thesis (Unpublished). Junagadh Agricultural University, Junagadh.

Dhurwey, C.; Choudhry, V. K.; Bante, R. and Shrey, R. 2015. Constraints perceived by farmers in production and marketing of major cole vegetable crops in Bemetara district of Chhattisgarh state. *International Research Journal Agricultural Economics and Statistics.* **6(1)**: 193-196.

Gadwal, V. R. 2003. The Indian seed industry: Its history, current status and future. *Special Section: Transgenic Crops Current Science*. **84(3)**: 399-406.

Girei, A. A. and Giroh, D. Y. 2012. Analysis of the factors affecting sugarcane (Saccharum officinarum) production under the out growers scheme in Numan local government area Adamawa state, Nigeria. *Journal of Education and Practice.* **3(8)**:195-200.

Gohain, N. and Singh, S. 2018. An analysis of problems and constraints faced by farmers in marketing of agricultural produce in Punjab. *Economic Affairs*. **63(3)**: 671-678.

Gupta, A. K.; Patra, C.; Kumar, R. R. and Mamata. 2019. Growth and instability analysis of area, production and yield of major cereals in Chhattisgarh plains zone of Chhattisgarh. *International Journal of Current Microbiology and Applied Sciences*. **8(12)**: 128-133.

Hingrajiya, S. 2015. Brand switching behaviour and marketing mix of Coromandel Pesticide in Junagadh district. M.B.A. (Agri Business) Thesis (unpublished). Junagadh Agricultural University, Junagadh.

Hussaini, Y. I. 2010. An evaluation of groundnut processing by women in a rural area of North Central Nigeria. *Journal of Agricultural Science.* **2(1)**: 206-212.

Iticha, M. D. and Taresa, B. 2020. Factors affecting adoption of soybean production technologies in Ethiopia. *Food Science and Quality Management.* **96**:11-20.

Jain, A. 2018. Analysis of growth and instability in area, production, yield and price of rice in India. *Social Change and Development*. **15(2)**: 46-66.

Jainuddin, S. M.; Seema; Suhasini, K. and Lavanya, T. 2019. Determinants of growth and instability of groundnut production in Karnataka: Evidence from Hazel's Decomposition Model. *Economic Affairs*. **64(3)**: 649-661.

Khorne, G. W.; Kakde, S. J. and Munde, T. B. 2019. Economic analysis of processing of rice mill in Maharashtra. *International Journal of Chemical* .**7(4)**: 1895-1899.

Kumar, A.; Sumit; Yadav, M. K. and Rohila, A. K. 2018. Constraints faced by the farmers in production and marketing of vegetables in Haryana. *Indian Journal of Agricultural Sciences.* **89(1)**:153-160.

Madhan, M. M. and Nigam, S. N. 2013. Principles and practices for groundnut seed production in India. Tech Bull 94. pp 1-64. International Crops Research Institute for the Semi-Arid Tropics. Patancheru, Andhra Pradesh, India.

Manzvera, J.; Musemwa, L.; Govere, I. and Matsika, P. 2019. Profitability and factors affecting groundnut production under irrigation in Zimbabwe. *Journal of Agricultural and Environmental Sciences.* **8**: 32- 43.

Mwatawala, H. G. and Kyaruzi, P. P. 2019. An exploration of factors affecting groundnut production in central Tanzania: Empirical evidence from Kongwa district, Dodoma region. *International Journals of Sciences and High Technologies.* **14(1)**: 122-130.

Nation Master, 2019. Global scenario. Available at <https://www.nationmaster.com/nmx/ranking/groundnuts-production>last access 7thJuly, 2021.

Ntare, B. R.; Diallo, A. T. Ndjeunga, J. and Waliyar, F. 2008. Groundnut seed production manual. Patancheru 502 324, Andhra Pradesh, India: International Crops Research Institute for the Semi-Arid Tropics (ICRISAT). pp 1-20.

Pandey, A.; Sharma, M. and Sharma, V. 2017. Study on seed replacement ratio among the tribal farmers of northern hills agro-climatic zone of Chhattisgarh. *Indian Research Journal of Extension Education.* **17(1)**: 88-93.

Pandya, D. H.; Khodifad, P. B. And Jadav, T. D. 2017. Constraints faced by Bt cotton growers in Bharuch district of Gujarat state. *Gujarat Journal of Extension Education.* **28(2):** 282-284.

Patil, N. A. and Yeledhalli, R. A. 2016. Growth and instability in area, production and productivity of different crops in Bengaluru division. *International Journal of Agriculture, Environment and Biotechnology*. **9(4)**: 599-611.

Pethani, V, P. 2017. Study economic analysis of pigeon pea seeds in Junagadh. M.B.A. (Agri Business) Thesis (unpublished). Junagadh Agricultural University, Junagadh.

Poshia, T. V. 2016. Studied on brand switching behaviour of cumin farmers of Junagadh district. M.B.A. (Agri Business) Thesis (Unpublished). Junagadh Agricultural University, Junagadh.

Rami, J. F.; Soraya C. M.; Bertioli, L.; Foncéka, D.; Marcio C.; Moretzsohn and Bertioli, D. J. 2014. Groundnut. *In* Pratap, A. and Kumar, J. *Alien Gene Transfer in Crop Plants.* Pp 253-279. Springer Science +Business Media. New York.

Reddy, K. V. and Kumar, P. 2010. An economic appraisal of mango processing plants of Chittoor district in Andhra Pradesh. *Indian Journal of Agricultural Economics.* **65(2):** 277-296.

Sagolsem, S.; Mitra A. and Leivang, S. 2017. Growth and instability analysis of major crops in North East India. *Journal of Crop and Weed*. **13(1)**: 72-76.

Samal, S. P.; Patra, R. N.; Das, M. K. and Nanda, B. B. 2017. Growth and instability in oilseeds production in Odisha: A district level analysis. *International Journal of Humanities and Social Science Invention*. **6(11)**: 39-45.

Shalini, R. and Chandra, S. 2014. Constraints faced by the farmers in cultivation of major crops: A case study of Udham Singh Nagar district of Uttarakhand. *International Interdisciplinary Research* Journal. **2(4)**: 11-17.

Shankar, R.; Zala, Y. C. and Pundir, R. S. 2016. Buying behaviour of cotton growers with reference to cotton seed in middle Gujarat. *Internat. J. agric. Sci.*, **12(2)**: 265-270.

Shruthi, G.; Rao, B. D.; Devi Y. L. and Masih, J. 2017. Analysis of area, production and productivity of groundnut crop in Telangana. *Agricultural Science Digest*. **37(2)**: 151-153.

Singh, J.; Kumar, V. and Jatwa, T. 2019. A review: The Indian seed industry, its development, current status and future. *International Journal of Chemical Studies.* **7(3)**: 1571-1576.

Singh, M. and Bansal, S. 2019. Factors influencing brand switching behaviour among Indian youth: An empirical study of mobile service providers. *Journal of Management Research and Analysis.* **6(2)**: 98-100.

Singh, N. K. and Kardam, D. K. 2013. Economic analysis of groundnut crop in Jaipur district of Rajasthan. *Agric. Update*. **9(1)**: 59-63.

Singh, P. and Borthakur, A. 2013. History of agricultural research in India. *Current Science.* **105(5)**: 587-593.

Suhagiya, C. 2016. Brand liking, brand loyalty and brand switching of cotton farmers towards Nuziveedu Seeds in Junagadh and Gir Somnath districts. M.B.A. (Agri Business) Thesis (unpublished). Junagadh Agricultural University, Junagadh.

Tiwari, G.; Singh, P.; Lodhi, S. K.; Kumar, M. and Mishra, A. 2016. Constraints faced by the farmers and their remedies in technological adoption of rice wheat- cropping system in Eastern Uttar Pradesh. *International Journal of Agriculture Sciences.* **8(55)**: 2966-2968.

Varalakshmi, K. 2016. Economic analysis of chicken nuggets processing unit. *International Journal of Applied Research.* **2(1)**: 507-516.

Velavan, C.; Kumar, S. N. and Varadha, R. S. 2015. A study on brand preference and brand switching behaviour of Bt cotton farmers in Andhra Pradesh. *Indian Journal of Marketing*. **45(11)**:17-28.

Wai, S. S.; Than, T. and Myint, T. 2020. Factors influencing on profitability of groundnut production and value-added groundnut products in Myinmu township, Sagaing region, Myanmar. *International Journal of Agriculture.* **9**: 67-74.

Wongnaa, C. A. 2013. Analysis of factors affecting the production of cashew in Wenchi Municipality, Ghana. *The Journal of Agricultural Sciences.* **8(1)**: 8-16.

Zalavadiya, K. J. 2014. Level of satisfaction and switching behaviour of farmers towards sprint fungicide. M.B.A. (Agri Business) Thesis (unpublished). Junagadh Agricultural University, Junagadh.

ANNEXURE I

FARMERS' QUESTIONNAIRE

1. Name of Respondent: ……
2. Contact No.: ……..
3. Village: ……
4. Taluka: …… 9. District: ……
5. Age: …… 10. Education: …….
6. Family Size: …… 11. Annul income: …….
7. Land holdings: …… 12. Cropping area (ha.)……
8. Farming experience (Years) ……..

- **Factors affecting groundnut production:**

9. Yield (kg/ha): …….
10. Sex of farmer:Male ☐ Female ☐
11. Access to reliable market information: Yes ☐ No ☐
12. Poor farming practices: Yes ☐ No ☐
13. Cost of seed (Rs./ha): ……
14. Pest and diseases: Yes ☐ No ☐
15. Family Labour (Man day/ha): ……
16. Hired labour (Man day/ha): ……..

- **Reasons for brand switching:**

Reasons	Tick
Price	
Unavailability	
Size of package	
Credit facility	
Yield	
Recommendation	
Risk of pest and disease	
Low productivity	

- **Constrains faced by farmers**

Sr. No.	Constraints	Rank
1	Poor quality of the groundnut seeds	
2	Unavailability of improve varieties	
3	Poor supply of groundnut seeds	
4	High cost of groundnut seeds	
5	Germination	
6	Low production	
7	Unavailability of seed in local area	
8	Lack of subsidy	
9	Lack of credit facility	
10	High transportation cost	

ANNEXURE II

LIST OF FARMERS

Sr. No.	Farmers' Name	Contact No.	Village	Taluka	District
1	Deva Natha Batava	9909540055	Taliyadhar	Junagadh	Junagadh
2	Devashi Menshi Batava	9978703907	Taliyadhar	Junagadh	Junagadh
3	Devi Hemantbhai Batava	9913287543	Taliyadhar	Junagadh	Junagadh
4	Devshi Bhada Batava	9913923559	Taliyadhar	Junagadh	Junagadh
5	Govind Arjan Batava	9879681816	Taliyadhar	Junagadh	Junagadh
6	Hamir Bhimshi pushdiya	9909183762	Taliyadhar	Junagadh	Junagadh
7	Hamir Rana batava	9909460937	Taliyadhar	Junagadh	Junagadh
8	Hardash Mashri khodbhaya	9904171382	Taliyadhar	Junagadh	Junagadh
9	Hardash Pitha batava	9978760665	Taliyadhar	Junagadh	Junagadh
10	Haresh Bhima batava	9879556829	Taliyadhar	Junagadh	Junagadh
11	Hitesh Malde batava	9824193160	Taliyadhar	Junagadh	Junagadh
12	Jacimit Jagu batava	9913633628	Taliyadhar	Junagadh	Junagadh
13	Jagmal Bhada batava	9725576331	Taliyadhar	Junagadh	Junagadh
14	Jagu Rana batava	9909115825	Taliyadhar	Junagadh	Junagadh

15	Kana alabhai batava	9979384692	Taliyadhar	Junagadh	Junagadh
16	Amit rbara	9998586802	Ptrapashar	Junagadh	Junagadh
17	Bavan ganda zala	8200615137	Ptrapashar	Junagadh	Junagadh
18	Bharat Bandhiya	9512304680	Ptrapashar	Junagadh	Junagadh
19	Bharat batava	9870008197	Ptrapashar	Junagadh	Junagadh
20	Bharat Zala	9724653798	Ptrapashar	Junagadh	Junagadh
21	Bharatbhai	9925256563	Ptrapashar	Junagadh	Junagadh
22	Bhaveshbhai	9979572223	Ptrapashar	Junagadh	Junagadh
23	Bhima Bhadrka	9712710982	Ptrapashar	Junagadh	Junagadh
24	Kaviben Bhikhubhai zala	9979600757	Ptrapashar	Junagadh	Junagadh
25	Bhima Pithiya	9898472100	Ptrapashar	Junagadh	Junagadh
26	Bhimabhai Arjan Batava	9712817460	Ptrapashar	Junagadh	Junagadh
27	Bholabhai Bhadarka	9727837753	Ptrapashar	Junagadh	Junagadh
28	Darasan Sureja	9099131394	Ptrapashar	Junagadh	Junagadh
29	Devatbhai bheda	9723638229	Ptrapashar	Junagadh	Junagadh
30	Dinesh Bhadrka	9979787236	Ptrapashar	Junagadh	Junagadh
31	Dinesh Zala	9825901251	Nandarkhi	Vanthli	Junagadh
32	Aravand Jagani	9879966821	Nandarkhi	Vanthli	Junagadh
33	Arjanbhai Vagh	9428441053	Nandarkhi	Vanthli	Junagadh
34	Ashokbhai Rupapra	9998337557	Nandarkhi	Vanthli	Junagadh
35	Arvind Jogal	7016885266	Nandarkhi	Vanthli	Junagadh

36	Ashokbhai	9879660985	Nandarkhi	Vanthli	Junagadh
37	Vesabhai Pasabhai	9978115068	Nandarkhi	Vanthli	Junagadh
38	Arjanbhai Bhanderi	9909690180	Nandarkhi	Vanthli	Junagadh
39	Jagmalbhai Vaniya	9725545553	Nandarkhi	Vanthli	Junagadh
40	Jentibhai Goganbhai	9979244023	Nandarkhi	Vanthli	Junagadh
41	Mavjibhai Kadivar	9824233954	Nandarkhi	Vanthli	Junagadh
42	Mahendra Maniyar	9824097557	Nandarkhi	Vanthli	Junagadh
43	Mansukhbhai Ramjibhai	9879174130	Nandarkhi	Vanthli	Junagadh
44	Devabhai Sangathiya	8238681321	Nandarkhi	Vanthli	Junagadh
45	Kanjibhai Vachhani	7878702240	Nandarkhi	Vanthli	Junagadh
46	Harshad Gadhiya	9099710914	Dungri	Vanthli	Junagadh
47	S. R. Patel	9913254784	Dungri	Vanthli	Junagadh
48	Rajshibhai Dangar	9925175022	Dungri	Vanthli	Junagadh
49	Ranjitbhai Vadher	9727199982	Dungri	Vanthli	Junagadh
50	Goganbhai Kambaliya	9926145328	Dungri	Vanthli	Junagadh
51	Markhibhai Kambaliya	9726135576	Dungri	Vanthli	Junagadh
52	Govindbhai Patel	9974100881	Dungri	Vanthli	Junagadh
53	Dhirendrasinh Vadher	9978115068	Dungri	Vanthli	Junagadh
54	Nita Pravinbhai Bhanderi	9909690180	Dungri	Vanthli	Junagadh

55	Pravinbhai Patel	9725545553	Dungri	Vanthli	Junagadh
56	Karsanbhai Bhanderi	9979244023	Dungri	Vanthli	Junagadh
57	Babubhai Pedhadiya	9824233954	Dungri	Vanthli	Junagadh
58	Tejalbhai Gagiya	9824097557	Dungri	Vanthli	Junagadh
59	Ramjibhai Vaishnav	9879174130	Dungri	Vanthli	Junagadh
60	Virambhai Kachhadiya	8238681321	Dungri	Vanthli	Junagadh
61	Bhuva ashokbhai keshurbhai	9913254784	Khirashara	Keshod	Junagadh
62	Bariya Jayeshbhai Virambhai	9723512240	Khirashara	Keshod	Junagadh
63	Pithiya Naranbhai Ramdebhai	9924007292	Khirashara	Keshod	Junagadh
64	Bariya Hajabhai Devashibhai	7600540341	Khirashara	Keshod	Junagadh
65	Gami Ranachhodbhai	9727114727	Khirashara	Keshod	Junagadh
66	Kunjal Parabatbhai Rajabhai	9925424812	Khirashara	Keshod	Junagadh
67	Patodiya Madhabhai Mohanbhai	9974814802	Khirashara	Keshod	Junagadh
68	Rabari Rajabhai Pachabhai	6353922903	Khirashara	Keshod	Junagadh
69	Bhopara Lakhabhai Gigabhai	9898447118	Khirashara	Keshod	Junagadh
70	Karmta Raghavbhai Babubhai	9909297941	Khirashara	Keshod	Junagadh

71	Harijan Babubhai Bhikhabhai	9904366283	Khirashara	Keshod	Junagadh
72	Pithiya Parabatbhai Vejabhai	9723698355	Khirashara	Keshod	Junagadh
73	Harijan Hiteshbhai Mngabhai	7622903016	Khirashara	Keshod	Junagadh
74	Hiralben Devashibhai Ebhabhai	9773246083	Khirashara	Keshod	Junagadh
75	Ram Ranamalbhai Najabhai	9662164697	Khirashara	Keshod	Junagadh
76	Ram Saramanbhai	9913939647	Balagam	Keshod	Junagadh
77	Bheda Bhimashibhai Govindbhai	8156076264	Balagam	Keshod	Junagadh
78	Bheda Menashibhai Devabhai	9824848668	Balagam	Keshod	Junagadh
79	Jotava Pareshbhai Jadavbhai	9726614822	Balagam	Keshod	Junagadh
80	Bheda Kaushikbhai Saramanbhai	9726614333	Balagam	Keshod	Junagadh
81	Bheda Rameshbhai Nathabhai	7567973201	Balagam	Keshod	Junagadh
82	Rupavatiya Kalubhai	9737274874	Balagam	Keshod	Junagadh
83	Sagaraka Jisabhai bhimbhai	9909120844	Balagam	Keshod	Junagadh
84	Pithiya Jadavbhai Arajanbhai	9723902202	Balagam	Keshod	Junagadh
85	Bheda Bharatbhai Bhikhabhai	8200568150	Balagam	Keshod	Junagadh

86	Sanjava Sanjaybhai Bhikhabhai	9904761393	Balagam	Keshod	Junagadh
87	Balas Govindbhai Jinabhai	9106741073	Balagam	Keshod	Junagadh
88	Ahir Rajubhai Keshurbhai	9909739026	Balagam	Keshod	Junagadh
89	Bhatt Ranabhai Kalabhai	9925654128	Balagam	Keshod	Junagadh
90	Borakhatariya Parabatbhai Haradasbhai	9737561690	Balagam	Keshod	Junagadh
91	Saramani parabatbhai	9879478431	Matiyana	Manavadar	Junagadh
92	Kambaliya Govindbhai	9771270260	Matiyana	Manavadar	Junagadh
93	Gudaniya Laljibhai	9979542449	Matiyana	Manavadar	Junagadh
94	Gundaniya Kantibhai	9979024185	Matiyana	Manavadar	Junagadh
95	Patel Gopalbhai	9825492004	Matiyana	Manavadar	Junagadh
96	Movadiya Dipakbhai	9727620398	Matiyana	Manavadar	Junagadh
97	Malam Bhikhabhai	9913974710	Matiyana	Manavadar	Junagadh
98	Butani Manasukhbhai	9825921659	Matiyana	Manavadar	Junagadh
99	Sojitra Chunibhai	9099373253	Matiyana	Manavadar	Junagadh
100	Kordiya Govindbhai	9913869594	Matiyana	Manavadar	Junagadh
101	Roda Goganbhai	9726720965	Matiyana	Manavadar	Junagadh
102	Butani Harsukhbhai	8128135290	Matiyana	Manavadar	Junagadh

103	Dhorajiya Jagubhai	9428088372	Matiyana	Manavadar	Junagadh
104	Gajera Piyushbhai	9724436873	Matiyana	Manavadar	Junagadh
105	Dhorajiya Hemantbhai	9909295981	Matiyana	Manavadar	Junagadh
106	Panshuriya Manubhai	9725549181	Ambaliya	Manavadar	Junagadh
107	Dhorajiya Maheshbhai	9979005032	Ambaliya	Manavadar	Junagadh
108	Gajera Dilipbhai	9099473057	Ambaliya	Manavadar	Junagadh
109	Dhorajiya Dipakbhai	9727203090	Ambaliya	Manavadar	Junagadh
110	Patel Kishorbhai	9725765658	Ambaliya	Manavadar	Junagadh
111	Poshiya Dharmendarbhai	9879207492	Ambaliya	Manavadar	Junagadh
112	Gajera Ketanbhai	9998345553	Ambaliya	Manavadar	Junagadh
113	Vekariya Haribhai	9724724055	Ambaliya	Manavadar	Junagadh
114	Rathod Kanjibhai	9925739110	Ambaliya	Manavadar	Junagadh
115	Patel vijaybhai	9725541212	Ambaliya	Manavadar	Junagadh
116	Barad Kanjibhai	9904119237	Ambaliya	Manavadar	Junagadh
117	dhaduk Yogeshbhai	9428776005	Ambaliya	Manavadar	Junagadh
118	Patel Pratapbhai	9879691394	Ambaliya	Manavadar	Junagadh
119	Solanki Nanjibhai	9925184140	Ambaliya	Manavadar	Junagadh
120	Thakar Vishalbhai	9904724679	Ambaliya	Manavadar	Junagadh

ANNEXURE III

Area, Production and Yield of groundnut seeds (1999-2019)

Year	Area(Mha)	Production(MT)	Yield(Kg/ha)
1999-2000	18265	7175	393
2000-2001	17448	6882	398
2001-2002	18877	26466	1402
2002-2003	20294	10945	539
2003-2004	20034	44776	2235
2004-2005	19850	18120	913
2005-2006	19420	33581	1729
2006-2007	18525	18504	999
2007-2008	18571	32989	1776
2008-2009	19074	26609	1395
2009-2010	18225	17569	964
2010-2011	19217	35750	1860
2011-2012	16863	27168	1611
2012-2013	12853	7626	593
2013-2014	13832.71	26501.68	1915.87
2014-2015	14132.36	20311.4	1437.23
2015-2016	17583.76	28743.89	1634.68
2016-2017	16787.83	40658.05	2421.88
2017-2018	15924.14	22033.75	1382.11
2018-2019	1688.7	4645.86	2751.15