

COMMONLY USED MEDICINAL PLANTS OF VETERINARY IMPORTANCE

P.Vikrama Chakravarthi* & S.Murugesan

**Assistant Professor, Department of Clinics,
Veterinary College and Research Institute, Namakkal*

Introduction

The traditional systems of medicine largely depend on natural resources for their medicines, out of which plants form the bulk of the medicine. The plants have been used for medicinal purposes long before prehistoric period. Ancient Unani manuscripts Egyptian papyrus and Chinese writings described the use of herbs. Evidence exist that Unani Hakims, Indian Vaidis and European and Mediterranean cultures were using herbs for over 4000 years as medicine. Indigenous cultures such as Rome, Egypt, Iran, Africa and America used herbs in their healing rituals, while other developed traditional medical systems such as Unani, Ayurveda and Chinese Medicine in which herbal therapies were used systematically. It is known that the two Pandavas, Nakul and Sahdev were experts in veterinary medicine who mastered the use of plants for animal welfare. The vast knowledge has been documented in Nakul Samhita. The official regulatory document of Indian Pharmacopoeia pertaining to General Conspectus of Medicinal Plants was published long ago in 1844, which mainly listed most of the commonly used indigenous remedies. This was followed by Indian Pharmacopoeia 1868, which covered both the drugs of British Pharmacopoeia (BP) 1867 and indigenous drugs used in India, with a supplement published in 1869 incorporating the vernacular names of indigenous drugs and plants.

The All India Ethnobiology Survey carried out by the Ministry of Environment and Forests, India estimates that over 7,500 species of plants are estimated to be used by 4,635 ethnic communities for human and veterinary health care across the country (Foundation for the Revitalisation of Local Health Traditions or FRLHT, 1997). A study of the codified medical texts of Ayurveda reveal that approximately 1,700 species of plants are documented for their medicinal properties and mode of action and over 10,000 herbal drug formulations are recorded (FRLHT, 1997). Rigorous inventories from the Unani, Siddha or the Tibetan medical systems also would yield more information on plant use. Modern medicine is also getting more interested in medicinal plant therapies and as a result the demand for medicinal plant products in the western world is on the rise. Drug laboratories are today analysing more and more plant products as remedies for the ever growing list of diseases. Some of the existing major life saving drugs is plant derived. For example the

reserpine, a drug commonly used to control high blood pressure and as an effective tranquiliser which was isolated from the raw plant *Rauvolfia* extract and used in western medicine in 1952. Interestingly, the powdered root of *Rauvolfia* has been in use in India for at least 2,000 years to treat mental illness (Srivastava, 1995). This root, 35 years since it gave the world its first tranquiliser, has become both medically and economically extremely important. The US alone dispenses over 22 million prescriptions for reserpine (Srivastava, 1995). Therefore knowledge of medicinal plants for both livestock and human is an important asset (human capital) for the livelihoods of common man. The present article highlights the major medicinal plants of veterinary importance for common use.

Medicinal plants use in indigenous medicine

Among ancient civilisations, India has been known to be rich repository of medicinal plants. The forest in India is the principal repository of large number of medicinal and aromatic plants, which are largely collected as raw materials for manufacture of drugs and perfumery products. About 8,000 herbal remedies have been codified in AYUSH systems in INDIA. Ayurveda, Unani, Siddha and Folk (tribal) medicines are the major systems of indigenous medicines. According to WHO, around 21,000 plant species have the potential for being used as medicinal plants. As per data available over three-quarters of the world population relies mainly on plants and plant extracts for their health care needs. More than 30% of the entire plant species, at one time or other were used for medicinal purposes. It has been estimated, that in developed countries such as United States, plant drugs constitute as much as 25% of the total drugs, while in fast developing countries such as India and China, the contribution is as much as 80%. Thus, the economic importance of medicinal plants is much more to countries such as India than to rest of the world. These countries provide two third of the plants used in modern system of medicine and the health care system of rural population depend on indigenous systems of medicine.

Treatment with medicinal plants is considered very safe as there is no or minimal side effects. These remedies are in sync with nature, which is the biggest advantage. The golden fact is that, use of herbal treatments is independent of any age groups and the sexes.

The ancient scholars only believed that herbs are only solutions to cure a number of health related problems and diseases. They conducted thorough study about the same, experimented to arrive at accurate conclusions about the efficacy of different herbs that have medicinal value. Most of the drugs, thus formulated, are free of side effects or reactions. This is the reason why herbal treatment is growing in popularity across the globe. These herbs that have medicinal quality provide rational means for the treatment of many internal diseases, which are otherwise considered difficult to cure.

Herbal medicines formulations

There are estimated to be around 25,000 effective plant-based formulations, used in folk medicine and known to rural communities in India (Verma and Singh, 2008). There are over 1.5 million practitioners of traditional medicinal system using medicinal plants in preventive, promotional and curative applications. It is estimated that there are over 7800 medicinal drug-manufacturing units in India, which consume about 2000 tonnes of herbs annually.

Herbal/Veterinary Ayurvedic products currently cover following major segments:

- ❖ Digestives,
- ❖ Liver support agents,
- ❖ Lactation promoters,
- ❖ Nutritives/Tonics,
- ❖ Anti-bloating agents,
- ❖ Anti-stress agents,
- ❖ Anti-diarrheal agents,
- ❖ Uterine tonic / ecbolic agents,
- ❖ Immunomodulators.

Among these the liver tonic segment is identified as one of the popular segments in terms of growing use of Ayurvedic formulations in veterinary industry. Post-partum problems faced by farmers are addressed by Ayurvedic and ecbolic formulations. As a support therapy in anti- mastitis segment, herbal solutions in the form of spray or creams have carved a good place in the industry due to the herbal properties manifested as anti-inflammatory or as cellular immunity booster to counteract udder infections. The anti maggoticidal and fly repellent properties of specific herbs have paved the way for herbal dermatological sprays and gels globally in a big way. With growing awareness on the need to reduce animal stress for better productivity and quality demand for herbal immunomodulator is pacing up not only in poultry but also in large animal sectors. Further, restrictions on use of chemical galactogogues (for e.g., use of oxytocin for letting down milk) have contributed towards growing demand of natural milk boosters. In general, herbal products have mainly addressed the metabolic disorders of cattle, sheep, poultry and other species. Majority of these products, which have been evaluated as per the guidelines of modern medicine, are prescribed by qualified veterinary doctors across the country. A few products which have been in the market for several decades have become over the counter drugs. The animal feed supplements are recommended by consultants and advisors to the feed manufacturers.

Table 1. Important medicinal plants used livestock diseases(Rastogi *et al.*, 2015 and Parthipan, *et al.*, 2016).

Name of the herb	Parts used	Ailment use	Preparations and applications	Type of Animal
<i>Acalypha indica</i> (Kuppaimaeni)	Leaves	Healing wounds	Paste, Topical	Ruminants
<i>Achyranthes aspera</i> (Nayuruvi)	Leaves	Watering in eyes	Juice, Topical	Goat
<i>Adhatoda vasica</i> (Adathoda)	Leaves	Respiratory infections	Decoction, Oral	Ruminants
<i>Aloe vera L</i> (Soaththukatralai)	Leaves	Anoestrus	Decoction, Oral	Cow.
<i>Allium sativum</i> (Poondu)	Bulb	Respiratory infections, Fever, Skin infections and foot and mouth disease	Juice, Oral	Cow
<i>Andrographis paniculata</i> (Chiriyangai)	Rhizome	Fever	Decoction, Oral	Cow
<i>Asparagus racemosus</i> (Thanneervittaan)	Whole plant	Constipation	Juice, Oral	Cow
<i>Azadirachta indica</i> (Vembu)	Seed	Wounds	Seed oil, Topical	Cow
	Leaf	In swellings and inflammation, Constipation and as mosquito repellent	Paste	Cow
<i>Boerhavia diffusa</i> (Punarvana)	Leaves	Improve vitality	Paste	Cow
<i>Calotropis gigantea</i> (Vellaerukku)	Latex	-Wounds on legs	Raw, Topical	Cow
<i>Cardiospermum halicacabum L.</i> (Mudakaththaan)	Leaves	-Fever	Paste, Oral	Goat
<i>Coriandrum sativum</i> (Kottamalli)	Seed oil	Constipation, Indigestion	Oral	Goat
<i>Cissus quadrangularis</i> (Pirandai)	Leaves	Downer cow syndrome	Decoction Oral	Cow
<i>Curcuma longa</i> (Manjal)	Rhizome	Wound, fever and Respiratory infections.	Paste, Topical Oral	Ruminants
<i>Gymnea sylvestre</i> (Sirukurunjaan)	Leaves	Fever	Paste, Oral	Cow
<i>Leucas aspera Spreng</i>	Leaves	Wound	Juice, Oral	All animals

(Thumbai)	Flower	Fever		
<i>Madhuca indica</i> (Illupai)	Flower	Fever	Paste Oral	Sheep
<i>Moringa oleifera</i> (Murungai)	Leaves	Nutritonal deficiencies	Paste Oral	Goat
<i>Murraya koenigii</i> (Karivaappilai)	Leaves	Anoestrus	Raw, Oral	Cow
<i>Ocimum sanctum</i> (Thulasi)	Leaves	Respiratory infections	Juice ,Oral	Cow
<i>Pedaliium murex L.</i> (Perunerunjil)	Leaves	Fever	Paste Oral	Sheep
<i>Phyllanthus niruri</i> (Keezhanelli)	Whole plant	Liver and urinary disorders.	Paste, Oral	Cow
<i>Phyllanthus emblica</i> (Nelli)	Fruit	Immunomodulation	Paste, Oral	Birds
<i>Piper nigrum</i> (Thippili)	Seed	Mastitis, respiratory infections and intestinal disorders.	Paste, Oral	Cow
<i>Piper betle</i> (Vetthialai)	Leaf	Rumen and metabolic disorders	Paste, Oral	Cow.
<i>Tinospora cordifolia</i> (Seenthilkodi)	Stem	Respiratory infections	Raw, Oral	Sheep
<i>Tribulus terrestris</i> (Nerinchil)	Leaves	Enteritis	Juice, Oral	Goat
<i>Trigonella foenum graecum</i> (Methi)	Seeds	Urinary disorders and appetizer.	Paste, Oral	Cow
<i>Vinca rosea</i> (Nithiya kalyani)	Dried whole plant	Cancer	Powder, Injection.	Dog
<i>Vitex negundo</i> (Nochi)	Leaves	Mosquito repellent	Raw	Farm house
<i>Withania somnifera</i> (Amukkara kizhangu)	Root	Fever, ulcer, immunomodulation, Tissue healing and antibacterial	Powder, Oral	Ruminants
<i>Zingiber officinale</i> (Inji)	Rhizome	Conjunctivitis	Juice, Oral	Ruminants

Table 2. Export and Import details of Medicinal plants (Verma and Singh, 2008).

Exporting of chemicals		Importing of chemicals	
Botanical names	Parts used	Botanical names	Parts used
<i>Acorus calamus</i>	Rhizome	<i>Aloe vera</i>	Dried leaf
<i>Argemone mexicana</i>	Fruit	<i>Adhatoda vasica</i>	Whole plant
<i>Cassia lanceolata</i>	Leaves	<i>Curcuma aromatica</i>	Bark and leaf
<i>Curcuma amada</i>	Rhizome	<i>Gloriosa superba</i>	Rhizome
<i>Curcuma longa</i>	Rhizome	<i>Myrica nagi</i>	Bark
<i>Curcuma aromatica</i>	Wild turmeric	<i>Strycnos nuxvomica</i>	Bark and seed
<i>Glycyrrhiza glabra</i>	Root	<i>Phyllanthus amarus</i>	Fruit
<i>Withania somnifera</i>	Vegetable rennet	<i>Ricinus communis</i>	Seed
<i>Myrica nagi</i>	Leaf	<i>Rauwolfia serpentina</i>	Root
<i>Piper longum</i>	Fruit	<i>Ocimum sanctum</i>	Leaf and essential oil
<i>Rubia cordifolia</i>	Madder root	<i>Vinca rosea</i>	Leaf, seed and stem
<i>Symplocos racemosa</i>	Bark	-	-
<i>Swertia chirata</i>	Whole plant	-	-
<i>Terminalia chebula</i>	Bark and seed	-	-
<i>Zingiber officinale</i>	Rhizome	-	-

Conclusion

Medicinal plants play an important role in the development of potent therapeutic agents. Tribal healers in most of the countries frequently used ethno veterinary herbal medicines to treat respiratory infections, wounds, eczema, skin infection, cancer, swelling and snakebite in animals. They keep no records and the information is mainly passed on verbally from generation to generation. The documentation of such vital information's from different parts of the world may give necessary inputs for research. According to a report (Singh, R *et al*) out of 20,000 medicinal plants only 2500 are studied and established to be of medicinal value. Therefore the scopes for scientific investigations on the remaining medicinal plants are in high note and the study may be carried out to develop suitable herbal veterinary formulations for use against common livestock diseases.

References

1. Farnsworth, N, R and D,D Soejarto. 1991. Global Importance of Medicinal Plants. Cambridge University Press, Cambridge.
2. Foundation for the Revitalisation of Local Health Traditions. 1997. Conserving a National Resource. Need for a National Policy and National Programme on Medicinal Plants

5. Conservation Draft of Madras Consultation.
6. Parthiban,R, S.Vijayakumar, S.Prabhu,J. Gnanaselvam, E.M.Yabesh, 2016. Quantitative
7. traditional knowledge of medicinal plants used to treat livestock diseases from Kudavasal
8. taluk of Thiruvarur district, Tamil Nadu, India, *Revista Brasileira de Farmacognosia*, 26,
9. 109-121
10. Rastogi,S, M.K.Pandey, J.Prakash, A.Sharma, and G.N.Singh,2015. Veterinary herbal medicines
11. in India, *Pharmacogn Rev.* 9(18): 155-163.
12. Srivastava, J, J Lambert, N Vietmeyer. 1995. Medicinal Plants. A Growing Role in
13. Development. The World Bank, Washington, DC
14. Singh, R, S.K.Kotwal & A.K.Srivastava. RESEARCH IN VETERINARY HERBAL
15. DRUGS.[www.hillagric.ac.in/.../18%20Research%20in%20Veterinary%20Herbal%](http://www.hillagric.ac.in/.../18%20Research%20in%20Veterinary%20Herbal%20Drugs.pdf)
16. [20Drugs.pdf](http://www.hillagric.ac.in/.../18%20Research%20in%20Veterinary%20Herbal%20Drugs.pdf)
17. Rastogi,S, M.K.Pandey, J.Prakash, A.Sharma, and G.N.Singh,2015. Veterinary herbal medicines
18. in India,*Pharmacogn Rev.* 9(18): 155-163.
19. Verma,S and S.P. Singh, 2008. Current and future status of herbal medicines, *Veterinary*
20. *World*, 1(11): 347-350
21. From Website -
22. <http://www.devalt.org/newsletter/jan98/.htm>
23. https://nhp.gov.in/introduction-and-importance-of-medicinal-plants-and-herbs_mtl