INDIAN INDIGENOUS KNOWLEDGE ON MEDICINAL PLANTS: THEIR CONSERVATION THROUGH BIODIVERSITY PARK

***Geetha R., Tangpu V. and Gopal G.V.**

Department of Education in Science and Mathematics,
Regional Institute of Education, Mysuru
***Email:** rgeetha875@gmail.com

The medicinal properties of plant species have made an outstanding contribution in the origin and evolution of many traditional herbal therapies. As a strategy to combat health problems globally, the WHO also has provided a special emphasis on the use of traditional folklore medicines, particularly in the context of developing countries. Ethno-medicine is an integral part of the traditional practices in developing countries of the world, and medicinal plants play a pivotal role in traditional medicines. Over the past few years, the medicinal plants have gained a wide recognition due to an escalating faith of people in herbal medicine, in view of its lesser side effects compared to allopathic medicines. As to provide scientific base to the claims of putative traditional plants, numerous studies pertaining to the treatment and control of various diseases have been made all over the world using herbal medicines.

Keywords: Medicinal plants, Traditional folklore knowledge, Herbal medicines, Biodiversity Park, Conservation, RIE campus

Introduction

The entire science of Ayurveda is based on nature and natural product-based medicines. It is aimed at achieving a state of balance in accordance with one's own body i.e., so called five elements in terms of ecology are the ecological factors water, air, land, fire and earth. This is the total environment in which humans have acquired lot of knowledge from mother nature. The tribes of Gujarat and Tamil Nadu had folk lore medicinal knowledge, which they practice to cure many diseases. Many excellent phytotherapic remedies are found. This ethnic knowledge has developed into a big science, i.e., ethnobotany, ethnozoology, ethnomedicine and ethnopharmacology and so on. This traditional knowledge of tribes has a base, i.e., the indigenous knowledge was established in India by late. Prof. S. K. Jain, former director of Botanical Survey of India.

Methods and Procedures

One of the authors had taken a part of his Ph.D work on Gujarat tribes as a base for the research paper. Since plants are used by tribes of Gujarat, Kerala and Tamilnadu are enumerated. A biodiversity park is established in RIE Mysuru in which some of the processes mentioned below are maintained.

1. *Aegle marmelos* L. corr, Family: Rutaceae

   Fruit juice made of this fruit pulp is a cooling astringent and the leaf infusion is used in case of jaundice.

2. *Ampelocissus latifolia* (Roxb.), Family: Vitaceae

   The fruit juice is acidic and excellent medicine for deworming and the boiled juice or infusion is good for curing fever.

3. *Adhatoda vasica nees*, Family: Acanthaceae

   The leaves are used by the patient in case of asthma. It consists of an alkaloid vasicine extracted from the tender twig, given to children suffering from stammering and for kidney stones.

4. *Acorus calamus L.*, Family: *Acoraceaepoaceae*

   It is popularly known as German ginger. The rhizome decoction is recomended for vomitting sensation and stomach pain.The root powder, along with honey, is given as brain tonic.

5. *Aloe vera (L.) Blume. f*, Family: Liliaceae

   The leaf gel is used on the skin for curing certain ailments. It is used in cosmetics and the gel is also used in ointment for treating piles.

6. *Asperagus racemoses willd*, Family: Liliaceae

   The root powder is known to be used by women with the problem of scanty milk and menstrual disorders. The roots are used as an aphrodisiac.

7. *Azadiracta indica A. Juss.*, Family: Meliaceae

   The leaf paste is applied on skin rashes and the seed oil is applied on boils and other skin infections; the powdered leaf is consumed in case of Type II diabetes. It acts as a blood purifier. The bark is used for curing fever.

8. *Boerhavia diffusa L.*, Family: Nyctaginaceae

   The leaves are used as a vegetable. The leaf paste is used as a tonic drink. *Punarnava,* an alkaloid is present in the leaves. It is a rejuvenator and is an excellent medicine for pain relief in rheumatoid arthritis.

9. *Basella rubra L.*, Family: Basellaceae

   The tender shoots and leaves are used as a vegetable and they are also used in juice form to reduce stomach ulcers and for the digestive system health.

10. *Centilla asiatica L.*, Urban Family: Apiaceae

    The leaves are used as a nervine tonic; on a daily basis if one consumes two leaves on an empty stomach, burnish sensation in the stomach is also cured. It is used as a liver tonic. It is used in the preparation of brahmi with amla fruit juice, a hair oil, which is a cooling astringent and is used for dry scalp and dandruff.

11. *Cocculus hirsutus L.*, Diels Family: Menispermaceae

    The leaf paste is used as a cure a for poisonous insect bites. It is applied externally to relieve burning and pain The leaf infusion is used for urinary tract infections, is anti-inflammatory and anti-diabetic.

12. *Coleus ambonicus lour*, Family: Lamiaceae

    The leaves and the tender shoots are mixed along with turmeric powder as a medicine for diarrhoea. The leaf paste is applied on the forehead for headache. The leaves are cooled and taken raw in case of digestive problems.

13. *Costus speciosus (J. Konos)*, Family: Zingiberace

    The leaf is consumed raw as a cure for Type II diabetic metabolic disorder. It is popularly called as the insulin plant. The root paste is used in curing sexual disorders. It acts as an aphrodisiac. The root juice is consumed orally twice daily for curing impotency.

14. *Cymbopogan martani (Dc.)*staff., Family: Poaceae

    The leaves are used popularly in the preparation of tea. The leaf decoction is taken internally, along with pepper powder, in case of cough and respiratory problems.

15. *Dorstenia contejerva L. Var haus Tonni L.,* Family: Moraceae

    This plant leaf juice is applied externally in case of snake bite. The boiled root is crushed and churned into a paste and applied on wounds caused by snakebites. It cures stomach pains and others symptoms like vomiting.

16. *Flaveria trinervia (sprens) C.mohr* Family: Asteraceae

    It is a popular medicine in Karnataka; the decoction of rhizome is used to cure jaundice. The leaf paste is applied on wounds to heal.

17. *Gloriosa superba L.,* Family: Liliaceae

    The decoction of the rhizome is used in curing haemorrhoids, snake bites, ulcers and arthritis. It is used as an anthelmintic.

18. *Hemidesmus indicus*, Family: Periplocaceae

    The root powder is used in the preparation of the infusion. A cup of it is taken in the morning for two weeks to reduce inflammation.

19. *Moringa oliefera lam*, Family: Moringaceae

    The leaves are cooked and used as a nutritional supplement for nutritional deficiency for children. The leaves and flower buds are used as vegetables. It is a good aphrodisiac agent. The leaves and fruits are usedin curing stomach ache.

20. *Nyctanthus arborristis*, Family: Nyctaginaceae

    It is a very common plant cultivated for its scented flowers. It is an excellent medicine for Nipha virus. Leaves are taken and thoroughly washed in water and put to boil and made in 200 ml of decoction. At the end pepper powder is added with three drops of lemon juice. This liquid is consumed twice a day before meals for 15 days. Drowsiness and fever will come down in 10 days.

21. *Oxalis cornculata*, Family: Oxalidaceae

    The leaves are a little acridic, eaten as vegetable by soligas (tribes of Karnataka Their fresh juice is used in treating piles, anaemia and cataract.

22. *Phylanthus neruri hook. F.,* Family: Euphorbiaceae

    The Leaf extract is taken on an empty stomach to cure jaundice. It is diuretic and relieves colic pain.

23. *Plumbago zeylanica linn.,* Family: Plumbaginaceae

    The root juice is taken orally twice a day in case of piles. Infusion of the root paste is given in scorpion bite as a cure.

24. *Spilanthes acmella murr,* Family: Asteraceae

    The pungent head inflorescence is chewed by tribes for curing stammering defect. Leaf extract is taken for throat infection

25. *Solanum nigrum L.,* Family: Solanacaeae

    The ripe black fruits are eaten raw for Vitamin B deficiency. The freshly prepared leaf juice is given for damaged liver and to cure jaundice.

Discussion and Conclusion

The plants listed are available in many places in the forests and in nature. We can cultivate them as they have lot of medicinal values for health care. This ancient knowledge is preserved in some medicinal texts but a lot is to be done by testing in laboratories. This plant lore and plants have to be conserved following the regular in-situ and ex-situ practices. Global traffic has increased the level of air pollution. The northern hemisphere is the leading producer of carbon dioxide, carbon monoxide and sulphur dioxide. Recently Delhi has faced smog. In 2007, China surpassed the USA as the top emitter of carbon dioxide. Globalisation has resulted in the development of many industries, which have less environmental regulation, leading to increased pollution and depletion of natural resources. There are many government organisations and non-government organisations like WWF, Green Peace, WWF CHETNA, etc. Hundreds of environmental protection schemes and organisations are taking part all over the world to protect and conserve wild life.

As part of the sustainability of nature in RIE Mysuru, we have established a biodiversity park with many medicinal plants and many activities to educate children in schools, especially about environment. Recently, Karnataka has adopted a mud ball campaign to develop forest in empty waste land, which will help in fulfilling the following objectives like stopping degradation of the forest, protecting fauna in their natural environment, ensuring sustainable use of resources, conserving biological diversity, promoting reduction of environmental pollution, promote eco-friendly technologies, conserving wild life, protecting the world from climate change.

Before it is too, late, it is better to develop lot of biologiclal park, zoos, buffer zones, reserve forests and biodiversity hotspots to be in act, so that human life on earth will be safe and we can give our future generation the best, ensuring the use of renewable energy like solar water and wind, promoting reduction pollution and wasteful consumption. In this paper the phyremedial intervention for the alarming problem of Nipah virus has been mentioned which can help millions of people all over the country, who are suffering from this disease.

Acknowledgments

Authors are thankful to the Director, NCERT New Delhi and Principal, RIE Mysuru, for their constant support for the biodiversity park development and for participating in the plantation programme. Thanks is also due to the financial support through the (Programme Advisory Committee) programme.

References

GOPAL, G.V. 2004. Medicinal Plants in India and Their Conservation. An Ethnobotanical Approach. *Ethnomedical Plants*. pp. 1–17. Pionter Publication, Jaipur. ISBN 81-7132-386-3.

LEWIS, W.H. AND H.P.F. ELVIN–LEVIS, 1977 *Medical Botany*. Plants Affecting Man's Health. Wiley, New York.

NAYER, M.P., K. RAMA MURTHY, AND V. S. AGARWAL. 1989. *Economic Plants of India*. Vol 1. Botonical Survey of India. Cambridge.

WOI. 1988, *The Wealth of India. Raw Materials*. Vol 2. B. Publications and Information Directorate CSIR. New Delhi.

———. 1992.*The Wealth of India. Raw Materials*. Vol 3. Publications and Information Directorate CSIR, New Delhi.