

Strategy for Promotion of Medicinal Plants in India

N.G. Hegde

Importance of Medicinal Plants

Long before the development of modern medicines, India in ancient times, was entirely dependent on herbal medicines for health care. Many scripts carry elaborate prescriptions of herbal medicines for treating very complex diseases. India was the leader in health care through Ayurveda. Apart from such systematic therapies, specific herbal therapies developed by individuals were used for treating the sick and these secret therapies were passed on from the older generation to the younger generation, without disclosing them to the outsiders. Even today, herbal medicines play a significant role in India. A similar practice was also prevalent in China and many other countries in Asia and Africa. With the advancement of science, allopathic medicine gained prominence over herbal medicines. With larger commercial interest, the western countries promoted modern medicine, inspite of its high cost and side effects. However, realising the drawbacks of allopathic medicine, the world is turning back to herbal medicines. Presently, about 80% of the world population is still dependent on medicinal plants for health care and 20% of the drugs in pharmaceutical firms are of plant origin, either extracted from the plants or synthetic derivatives of these plant species.

In China, over 5000 plant species are used in drugs and traditional medicines, while over 2000 species are known for their traditional medicinal value in India. In addition to medicinal properties, some of these species are also used as tonics. Ginseng, one of the most popular species used as a tonic, is widely grown in China and Korea. In 1991, the value of Ginseng sold in USA and Asian region was over US\$ 215 million and China had a lion's share of 40% (Sial, 1995). The estimated annual market value of the plant based drug is US\$ 43,000 million and it is expected to rise to US\$ 3 trillion over the next two decades.

In India, for over 500 million people, traditional herbal medicines are the only alternative source, due to easy accessibility and lower price. This sector also provides employment to over one million traditional healers and *Vaidyas* in the country (Shankar, 1997). Thus, sustainable development of medicinal herbs provides an excellent opportunity to take advantage of the expanding market, while ensuring a steady supply to local communities.

Production of Medicinal Herbs

Generally, the villagers acquire basic knowledge about the use of various herbs from their elders and collect them fresh from their gardens or nearby forests, whenever they need them. However, with deforestation and commercialisation of agriculture, many medicinal herbs are not easily available. Furthermore, with the development of allopathic systems, doctors discourage their patients from using herbal medicines. Hence, most of the ayurvedic medicines produced by the pharmaceutical firms are used as backup remedies, tonics or to counteract the side effects of allopathic medicines, resulting in loss of faith in the system.

Presently, a large number of firms are involved in bulk production of herbal medicines in India. As most of these firms do not have their own source of raw materials required for processing, they are dependent on the natural forests. These firms have been engaging the local forest dwellers to collect raw material from the forests. The estimated value of herbs extracted for drug production is over US\$ 300 million. The raw material for most of these products come from the natural forests for which the industry barely pays the cost of labour. This has

resulted in the destruction of a large number of herbal species leading to their extinction.

Presently, very few species have been exploited for commercial production in India. Among them, Opium is the most important crop, cultivated for production of morphine over 23000 ha land in U.P., M.P. and Rajasthan. Senna is another crop cultivated in Tamil Nadu and Andhra Pradesh, covering around 2700 ha, yielding about 5000 tons of leaves and pods. Psyllium (Isabgul) is another important crop grown on 30000 ha in North Gujarat and adjoining area of Rajasthan, yielding 30,000 ton seeds. Out of this, about 82-85% of the produce is exported. Periwinkle (*Catharanthus roseus*) for extraction of Raubasine, yam bearing Diosgenin (*Dioscorea composita*) and Sinkona (*Cinchona calysaya*) are the other important species grown commercially on non-forest lands in India for medicinal properties apart from the large number of herbs and trees having medicinal properties.

A few more plant species brought under commercial production during recent years are Menthol (*Mentha arvensis*), Safed musli (*Chlorophytum tuberosum*), Aloe vera (*Aloe barbadensis*) and Anola (*Emblica officinalis*). But in the absence of an assured market and fluctuating price, great uncertainty prevails in the field.

Strategy for Development of Herbal Medicine Industry

Presently, over 100 million ha of wastelands are not only lying idle, depriving the poor of opportunities for income generation but also posing a serious threat to the ecosystem and environment. Such lands can be used for growing medicinal herbs, which are in good demand. Commercial cultivation of medicinal herbs can be promoted by establishing a linkage with bulk consumers. For successful promotion of herbal medicine industry in the country, the following steps are suggested.

1. Identification of plant species having medicinal properties and establishment of data banks and herbariums.
2. Conservation of medicinal herbs in their natural habitats -- in-situ and in protected areas (ex-situ)
3. Selection of superior germplasm based on laboratory analysis and field studies, for domestication and commercial production.
4. Standardisation of propagation and cultivation practices for producing superior quality herbal materials, which can be adopted by farmers.
5. Validation of the uses of various medicinal herbs in curing different diseases, standardization of the protocols and documentation.
6. Strengthening of research to find suitable herbal medicines to cure various diseases, particularly newly emerging diseases.
7. Patenting of the traditional practices and germplasm. Facilitation counters can be established to assist the traditional healers to patent their therapy.
8. Introduction of herbal medicine as an integral subject in medical colleges dealing with different systems of medicine.

9. Popularising the use of various herbal medicines through specific prescriptions, social marketing and mass awareness.
10. Supporting traditional healers and Ayurvedic practitioners through sharing of knowledge, networking, supply of superior quality germplasm and linkage with farmers for supply of raw materials.
11. Establishing a formal linkage between the cultivators, bulk consumers and pharmaceutical industries at national and international levels.
12. Modifications in the Government policies to support research and development on herbal medicines and to curb over-exploitation of medicinal herbs in natural forests.

Serious attempts have been made by the Government of India and several State Governments to promote the cultivation and processing of medicinal herbs both in Government and private sectors over the last two decades. However, inspite of having a bright future, particularly, as a leader in the international market, there has not been any major breakthrough in this sector. The major bottleneck seems to be the linkage between the producers and processors. While the natural sources of medicinal herbs are fast depleting, the processors are not willing to encourage the farmers to take up the scientific production of raw materials. The major reasons are higher cost of production as compared to the material collected illegally from the forests and unstable demand for the produce. As marketing of unknown brands of ayurvedic products is extremely difficult, it is difficult for the growers to organise processing and marketing of these products. Hence, encouraging farmers to take up scientific production of herbal species, with buyback guarantee is necessary to boost this sector.

Fortunately, the Government of India has already established an independent body to promote herbal medicine sector in the country. This agency can coordinate the above activities to boost the industry and capture the global opportunities in the near future.

References

1. Shankar D. and Majumdar B. 1997. Beyond the Biodiversity Convention: the challenges facing the biocultural heritage of India's medicinal plants. Medicinal Plants for Forest Conservation and Health Care – Nonwood Forest Products Series No. 11. FAO, Rome: 87-99
2. Gauniyal A.K., Singh A.K. and Virmani O.P. 1991. Major Medicinal Plants as Foreign Exchange Earner. Yojana, July: 14-18