

Medicinal Crops: A New Source of Earnings for Farmers of Maharashtra State, India

Kahate P.M.

Department of Botany, Phulsing Naik Mahavidyalaya Pusad, Dist. Yavatmal, Maharashtra.

Abstract:

India is an agrarian country from ancient times. Maharashtra farmers cultivate different types of crops like Wheat, Soyabean, Jowar, Maize, Rice, etc. in their fields. Due to consistent fluctuations in environmental conditions, disease and pests attacks, market problems, crops yield is less and they cannot get good earnings. Humans are disease susceptible and depend on drugs. Many medicinal plants such as Shatavari, Ashwagandha, Kali-musli, Haldi, and their properties are commonly known by peoples from ancient times. Now a day's most of the peoples turn their intention over Ayurvedic drugs for curing of diseases. Today, medicinal plants have Global market; many industries and firms take their interest in the production of plant drugs than antibiotics. If farmers cultivate these medicinal plants as crops in their fields, they can get a second source for earnings which will be fulfilling their needs.

Keywords: Medicinal plants, crops, farmers.

Introduction

The agriculture and allied sector continues to be pivotal to the sustainable growth and development of the Indian economy. Not only does it meet the food and nutritional requirements of 1.3 billion Indians, it contributes significantly to production, employment and demand generation through various backward and forward linkages.

Rural India comprises 73 % of the country's population, but its share in the total national income is less than 45 %. The rural sector is characterized by low income levels, poor quality of life and a weak human capital-base. Joblessness is particularly acute in the rural areas because agriculture has been in crisis over the last decade. The major issues in the livelihood sectors are as (i) Traditional livelihood sectors like agriculture, horticulture and livestock are affected (crop land area is shrinking due to Special Economic Zones (SEZs) and other industrial activities; crop land has been degraded due to over application of chemicals; and poor economic returns are experienced due to the increase in input cost and lesser availability of fodder. (ii) People are not exposed to the improved practices that may fetch those better economic gains. (iii) There is a severe paucity of agricultural labourers. (iv) There has been a continuous decrease in the monetary yield from nearly all types of crops raised in the region. (v) There have also been wide fluctuations in the price of the crops raised in the region.

The most important reason for the emergence of agrarian distress in the country during 1990s is the low level of absolute income as well as large and deteriorating disparity between income of a farmer and non-agricultural worker, which turned even more serious in latest years. Therefore, strong measures are actually needed to harness all possible sources of growth in farmers' income within as well as outside agriculture sector. (Khanam *et al.*, 2018) Plants have been used since ancient times to heal and cure

diseases and to improve health and wellbeing. Despite ancient nature of the tradition, medicinal plants still form the basis of traditional or indigenous health systems and are reported by the World Health Organization (WHO) to still be used by the majority of the populations in most developing countries. Medicinal and aromatic plants (MAPs) play a significant role in meeting the demands of the traditional medicine markets which are found both domestically in the producing and in overseas markets. Interest in traditional systems of medicine and, in particular, herbal medicines, has increased substantially in both developed and developing countries over the past two decades. Successful cultivation of medicinal crops is economically attractive provided marketing is not a problem. The derivatives of medicinal plants are non-narcotics having no side effects. Over 1.5 million practitioners of the Indian system of medicine in the oral and codified streams use medicinal plant in preventive promotional and curative applications. It is estimated that there are over 7800 medicinal drug manufacturing units in India, which consume about 2000 tons of herbs annually. Global and national markets for medicinal herbs have been growing rapidly, and significant economic gains are being realized (WHO, 2003).

Farmer's views in Maharashtra

From few decades village economy changed radically, substituting farm production for trades and livestock's, the farming system did not go through a stage of food self-sufficiency. The farming system not caters to market demand whenever required and villagers have not well developed skills required to operate in the markets e.g., acquiring market information, grading of the product, acquiring working capital, hiring trucks for transport, etc. Now a day, there are serious problems in growing of common crops like workers, crop diseases, dependency on chemical fertilizers and pesticides, uncertainty of crop yield and selling prize, instabilities in rain and summer days, etc., pose an enormous challenge to sustaining agricultural growth. Due to these reasons famers are not interested in the growing of common crops and going into big cities for work. Villages are without farmers, fields are without crops and cities are crowded. Why this will happen? Because no one takes part in increasing the field production and selling prizes for farmers; everyone is going to industrialization.

Medicinal plant

India is considered a treasure house of valuable medicinal and aromatic plants, which provide the raw material for the formulation of indigenous medicines apart from exports. In India, earlier, the medicines used in indigenous systems of medicines were generally prepared by the practicing physicians by themselves, but now this practice has been largely replaced by the establishment of organised indigenous drugs industry. It is estimated that at present there are more than 10,800 licensed pharmacies in Indian systems of medicine and nearly 4,60,000 registered practitioners of Ayurveda, Siddha, Unani medicine and Homeopathy. There has been an appreciable increase in the area under medicinal plant cultivation and production of medicinal and aromatic plants over the years. Medicinal and aromatic plants constitute a major segment of the flora, which provides raw materials for use in the pharmaceuticals, cosmetics, and drug industries. Evidence shows that the total domestic potential for crude drugs and oil extracts in India is worth Rs. 3 billion, of which the requirements of over-the-counter products The indigenous systems of medicines, developed in India for centuries, make use of many medicinal herbs. These systems include Ayurveda, Siddha, Unani, and many other indigenous practices. More than 9,000 native plants have been established and recorded curative properties and about 1500 species are known for their aroma and flavour (Deshpande *et al.*, 2006). In the broadest sense, domestication of medicinal plants is

a process of increasing human inter-action with the medicinal plants. The first stage is the collection of wild medicinal plants from the forests for consumption and for income generation. The second stage is active cultivation of the plants. Given the growing global demand for medicinal plants and the decreasing natural supply of them, cultivation of medicinal plants is bound to be an economic activity. Cultivation is closely related to conservation of the wild stock of these plants.

Herbs and aromatic plants used for Ayurveda medicines and personal care products – sold by companies like as Dabur, Himalaya, Natural Remedies, Patanjali – are the main ingredients of this farm earnings boom. Industry estimates put the market for herbal products at Rs 50,000 crore, growing at a fast annual clip of 15%. Average devoted to herbs and aromatic plants is still very small — 6.34 lakh hectares out of the total currently cropped area of 1,058.1 lakh hectares — but growing at 10% annually, according to government data (Sally, 2018).

Maharashtra has different agro-ecological zones suitable for growing different medicinal plants, which are in demand. It is an obvious business risk for a farmer to give up growing conventional crops that have assured returns and start growing medicinal plants. Medicinal herbs are considered as valuable and profitable cash crops. The herbs have a good export potential also. Growing, processing and selling medicinal herbs are a better opportunity for the farmers. Medicinal herbs growing in India is considered as commercial cash crop cultivation. The plant species will have to be identified and their package of practices will be developed. Identification of species will be important criteria for marketing. For good production of medicinal plants in field following practices are needed like, planting material / seed of known identified varieties from standard source, cropping system, post-harvest technology, marketing of product, primary processing and quality control will be important.

Role of National medicinal plant board (NMPB): -

The objective of establishing the Board was to establish an agency which would be responsible for coordination of all matters relating to medicinal plants, including drawing up policies and strategies for conservation, proper harvesting, cost-effective cultivation, research and development, processing, marketing of raw material in order to promote and develop this sector. The resource pool of the medicinal plants was abundant in forest but forest areas are dwindling fast due to anthropogenic pressure. Therefore the alternative means to generate more raw materials could be only through cultivation of medicinal plants in agriculture fields. NMPB is working to promote cultivation of medicinal plants and supported in a Mission mode under Centrally Sponsored Scheme of “National Mission on Medicinal Plants (NMMP)” since 2008-09 and now continuing under National AYUSH Mission (NAM), a flagship program launched by the Ministry of AYUSH, Government of India during XII Plan period. The program is being implemented in the country through State Government designated agencies.

A farmer cultivating medicinal plants on the basis of half-baked information is not likely to be successful, for instance, must register the crop and land used to grow it in with the revenue department; this helps to prove that the crop is actually cultivated and not taken from the wild. The government of India is currently providing incentives to cultivate these plants so as to ensure availability; the plants can also be exported if a certificate of cultivation is available. These include Kutki (*Picrorhiza kurroa*), Jatamansi (*Nardostachys grandiflora*) and Kuth (*Saussurea costus*). Along with these, information is also available on common ones such as Tulsi (*Ocimum sanctum*), Pudina (*Mentha arvensis*) and

Gwarpatha (*Aloe barbedensis*) Farming techniques for trees such as *Guggul*, *Ashok*, *Anwla* (Jarayal and Uniya, 2003)

Medicinal Plants useful for cultivation in Maharashtra

S. N.	Particulars	Crop				
		Ashwagandha	Shatawari	Safed Musli	Jestmadh	Guggul
1	Season	Kharif	Kharif	Kharif	Kharif	Kharif
2	Soil	Medium, Well Drained	Light, Well Drained	Black, Well Drained	Medium well Drained	Light to Medium
3	Seed/Seedling /ha	1 Kg. Seed Seedling 60x30 cm	1 Kg. Seed Seedling 1.5 x1 m	7-8 Kg Seed Seedling 30x15 cm	250-300 Kg. wet cuttings (3-4 buds) 60x45 cm	Stem cuttings Seed 2-3 months planting 2x2 m.
4	Fertilizers Kg/ha	N:P:K: 25:30:25 N:40 after 40 days N	N:P:K: 15:15:15	N:P:K: 15:15:15	N:P:K: 40:40:0 N:30 every year	N:P:K: 15:15:15
5	Harvesting & Yield/ha	After 6 months 1215 q dry roots/ha OR 100 kg. seed	After 1.5 to 2 years 1215 q dry roots/ha	After 8-10 months 15-20 q/ha wet OR 34 q/ha dry roots	After 1.5, up to 3 years 25-50 q/ha	After 7 years 500-800 gum/plan
6	Use	Tonic, Cough, Asthma Arthritis, Inflammatory	Tonic, More milk, Narayan Tel	Diabetics, Tonic, Ayurvedic preparation	Ulcers, Cough, Asthma (Laxative, expectorant)	Arthritis, Cough, Blood pressure, Obesity, Heart problems, Diabetes
7	Price	Rs. 50/kg dry roots	Rs. 50/kg dry roots	Rs. 400-800 /kg dry roots	Rs. 60/kg dry roots	Rs. 300/kg gum

(Ref. MediAromPlants.pdf)

Conclusion

Medicinal plants cultivation and management therefore, could become highly remunerative both in financial and economic terms for the small-scale growers. Not only the plants are in increasing demand by major herbal drug industries as an essential raw material of their drugs, but also its collection, production, processing, packaging and transportation requires high labour input, which can create job lead growth in Maharashtra. Apart from the sustainability aspect, domestication of medicinal plants, if

popularised, has the advantages of enhancing rural income, saving a heritage of human knowledge, contributing to conservation of bio-diversity and improving the output from plantations. Farmers significantly increased their income, while also contributing to preservation of rare medicinal species. However, promotion of herbal medicines may not to be harmful to allopathic drugs.

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