



Income Generation of Farmers via Medicinal Plants Cultivation: A Review

Krishan Kumar Singh^{1*}, S. P. Singh², B. Kumari², A. K. Paliwal³, J. S. Chauhan⁴ and J.M.S. Rawat⁵

¹School of Agricultural Science, Career Point University, Kota, Rajasthan, India

²Department of Botany, Hindu College, Moradabad (U.P.), India

³Department of Botany, Govt. P. G. College, Rudrapur, Uttarakhand

⁴Department of Seed Science and Technology, Chauras Campus, HNB Garhwal University, Srinagar Garhwal, Uttarakhand, India

⁵Government Degree College, Rudraprayag, Uttarakhand, India

*Corresponding Author E-mail: forekrishna@gmail.com

Received: 18.04.2019 | Revised: 25.05.2019 | Accepted: 3.06.2019

ABSTRACT

Medicinal and aromatic plants undertaken an important position in Ayurveda, Homeopathy and Unani medicine. These plants provide raw materials for pharmaceuticals, cosmetic, drug and other industries. Farmers collect more income via cultivation of the medicinal and aromatic plants than other commercial and traditional crops. Trading of medicinal plants worth globally stand over \$ 5 billion and about INR 3 billion in India. National medicinal plant board, India provide subsidy of 30%, 50% and 75%, according to different plant species availability for production. About 95 medicinal plants species listed under National Ayush Mission (NAM) for cultivation. About 39 angiosperm plant species of herbs, shrubs and trees are found very common and some are wild in Uttar Pradesh and Uttarakhand state. Cultivation of medicinal and aromatic plants is the ideal alternative for some traditional uneconomic crops and help in medicinal plant protection.

Keywords: Medicinal plants, Farmers, Income, Cultivation.

INTRODUCTION

In India, uses of medicinal and aromatic plants have been done for medicinal and other purposes from ancient times. About thousands of native plants have medicinal importance. In India, Ayurveda, Unani and Siddha medicines are of huge demands. According to the World Health Organization, "a medicinal plant is any plant which, in one or more of its organs,

contains substances that can be used for therapeutic purposes, or which are precursors for phytopharmaceutical semi synthesis". The Ministry of Environment and Forests Government of India have acknowledged and recorded more than 9,000 plant species for their importance in the medicinal and healthcare industry.

Cite this article: Singh, K.K., Singh, S.P., Kumari, B., Paliwal, A.K., Chauhan, J.S., & Rawat, J.M.S. (2019). Income Generation of Farmers via Medicinal Plants Cultivation: A Review, *Ind. J. Pure App. Biosci.* 7(4), 174-177. doi: <http://dx.doi.org/10.18782/2320-7051.7428>

Among these, about 65 plants have huge and reliable demand in world market. India however produces only limited quantities of these materials. In global market of production of plants products, India is on 6th place with about 7 % of contribution, whereas other countries like China cover the market of worth INR 18,000 annually (Singh, 2005). Use of herbal medicines is safer than modern medicine; and reduces the side effects. The global market of herbal medicine and their products is expanding tremendously. In 2004

the market was US\$ 62 billion and it will reach to about US\$ 5000 billion by 2050 (Purohit & Vyas, 2004). India is wealthy country in regarding to medicinal and aromatic plants, but unfortunately achieve less success in export of medicinal plant products due to lack of awareness among Indian farmers about economic values and income generation from medicinal and aromatic products (Negi & Sharma, 2016, Singh, 2009, Singh et al., 2007).

Table: List of Medicinal plants [Subsidy by NMPB: 1 (75%); 2-12 (50%); 13-39 (30%)]

S.No.	Plant Names	Family	Common Names	Parts Used
1.	<i>Commiphorawightii</i> (Arn.) Bhandari	Burseraceae	Guggal	Lt
2.	<i>Acaciacatechu</i> Willd.	Fabaceae	Kattha	Fr
3.	<i>Aeglemarmelos</i> (L.) Corr.	Rutaceae	Bel	Fr
4.	<i>Albizialebeck</i> Benth.	Fabaceae	Siris	Br
5.	<i>Alstoniascholaris</i> R.Br.	Apocynaceae	Saptarni	Br, L, Lt
6.	<i>Gloriosasuperba</i> L.	Colchicaceae	Kalihari	Sd, R
7.	<i>Plumbagozeylanica</i> L.	Plumbaginaceae	Chitrak	Wp
8.	<i>Pterocarpusmarsupium</i> Roxb.	Fabaceae	Beejasar	L, Fl
9.	<i>Rauwolfiaserpentine</i> Benth. ex Kurz	Apocynaceae	Sarpagandha	R
10.	<i>Saracaasoca</i> L.	Fabaceae	Ashok	Br, Fl
11.	<i>Tecomellaundulata</i> (Sm.) Seem.	Bignoniaceae	Rohitak	Br, Sd
12.	<i>Abrusprecatorius</i> L.	Fabaceae	Ratti	L, Sd, R
13.	<i>Justiciaadhatoda</i> L.	Acathaceae	Adusa	Fl, L
14.	<i>Achyranthesaspera</i> L.	Amaranthaceae	Latjira	Wp
15.	<i>Aloevera</i> (L.) Burm.	Asphodelaceae	Ghratkumari	L
16.	<i>Andrographispaniculate</i> (L.) Burm.	Acanthaceae	Kalmegh	Wp
17.	<i>Asparagusracemosus</i> Willd.	Asparagaceae	Shatavar	R
18.	<i>Azadirachtaindica</i> A. Juss	Meliaceae	Neem	L, Br, Sd
19.	<i>Bacopamonnieri</i> (L.) Pennell	Plantaginaceae	Bramhi	Wp
20.	<i>Boerhaaviadiffusa</i> L.	Nyctaginaceae	Punarva	Wp
21.	<i>Senna alexandrina</i> Mill.	Fabaceae	Senna	P
22.	<i>Catharanthusroseus</i> (L.) G. Don	Apocynaceae	Sadabahar	Fl, L, R
23.	<i>Cinnamomumtamala</i> (Buch.-Ham.) Nees et Eberm.	Lauraceae	Tejpat	L, Br,
24.	<i>Clitoriaternatea</i> L.	Fabaceae	Aprajita	Fl
25.	<i>Plectranthusbarbatus</i> Andrews	Lamiaceae	Patherchur	L, Sd
26.	<i>Convolvulusmicrophyllus</i> Sieb. ex Spreng.	Convolvulaceae	Shankhpushpi	Wp
27.	<i>Ecliptaalba</i> Hassk.	Asteraceae	Bhrangraj	Wp
28.	<i>Phyllanthusemblica</i> L.	Phyllanthaceae	Amla	Fr, Sd
29.	<i>Lepidiumsativum</i> L.	Brassicaceae	Chandrasur	Wp
30.	<i>Ocimumtenuiflorum</i> L.	Lamiaceae	Tulsi	L, Sd, R
31.	<i>Phyllanthusamarus</i> Schum & Thonn.	Phyllanthaceae	Bhumi amla	Wp
32.	<i>Plantagoovata</i> Forssk.	Plantaginaceae	Isabgoal	Sd
33.	<i>Sidacordifolia</i> L.	Malvaceae	Sida	Sd, L, R
34.	<i>Solanumnigrum</i> L.	Solanaceae	Makoi	Fr, Wp
35.	<i>Tephrosiapurpurea</i> Pers.	Fabaceae	Srphonk	Wp
36.	<i>Terminaliaarjuna</i> (Roxb.) Wt., & Arn.	Combretaceae	Arjun	Br, L
37.	<i>Tinosporacordifolia</i> Miers.	Menispermaceae	Giloi	St
38.	<i>Vitexnegundo</i> L.	Lamiaceae	Nirgundi	L, Fl, R
39.	<i>Withaniasomnifera</i> (L.) Dunal.	Solanaceae	Ashwagandha	R

(Wp = Whole plant, L = Leaves, R = Root, St = Stem, Sd = Seeds, Br = Bark, Lt = Latex, Fl = Flower, Fr = Fruit, P = Pod)

Constraints for the economic expansion of medicinal plants:

- Require of field studies on the cultivation of medicinal plants;
- Inadequate knowledge of the export companies and personnel with standards restrictions. This results in low prices for medicinal herbs and drugs;

- Technologies for the management of medicinal plants and their supplies.
- Marketing information regarding the international organization dealing with medicinal plants for capturing world market share.

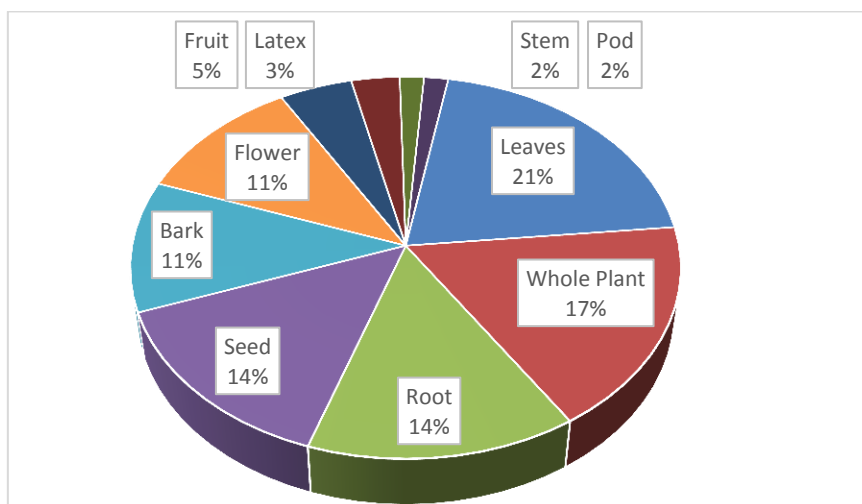


Fig. Parts used to extract medicines

Plants for Health

Today's much of the World's population largely depend on traditional medicine plant to meet daily health requirements, especially developing countries. Remedies dependent on plants products are widespread in many industrialized countries. Alike, cosmetics and other household products are derivatives of medicinal or therapeutic plants.

CONCLUSION

Demand for medicinal plants is expand rapidly in future, and fuelled by the growth of sales of herbal supplements and remedies. The key benefits of medicinal plants cultivation for farmers are improved access to local markets, assured markets and prices (lower risks) especially for non-traditional crops, assured and often higher returns, and enhanced farmer access to production inputs, mechanization and transport services, and extension advice. National medicinal plant board, India provide subsidy of 30%, 50% and 75%, on about 95 medicinal plants species which was listed under National Ayush Mission (NAM) for

cultivation. Farmers can grow some selected plants species according to their suitability and generate their income. These medicinal and aromatic plants are the ideal alternative for some traditional uneconomic crops and help in medicinal plant protection.

REFERENCES

- Balram, C., Goyal, A., Khokra, S.L., Kaushik, P., & Kaur, N. (2012). Contract Farming of Medicinal Plants in India. *International Journal of Pharmaceutical Erudition*, 2(2), 1-5.
- Biswas, B.C. (2010). Cultivation of Medicinal plants: Success stories of two farmers. *Fertilizer marketing news*, 41(3), 1-4 & 20.
- Deshpande, R.S., Neelkanta, S.T., & Hedge, N. (2006). Cultivation of medicinal and aromatic crops and aromatic crops as a means of diversification in agriculture. ADRTC, ISEC, Bengaluru.
- Jarayal, G.P., & Uniyal, M. (2003). Commercial cultivation of medicinal

- plants. Indian Society of Agribusiness, Professionals, New Delhi.
- Joshi, B.C., & Joshi, R.K. (2014). The Role of Medicinal Plants in Livelihood Improvement in Uttarakhand. *Int. J. Herb. Med.* 1(6), 55-58.
- Kokate, C.K., Gokhle, A.S., & Gokhle, S.N. (2007). Cultivation of medicinal plants. Nirali Prakashan.
- Mazid, M., Khan, T.A., & Mohammad, F. (2012). Medicinal plants of rural India: A review of use by Indian folks. National Ayush Mission: framework for implementation, Department of AYUSH Ministry of Health & Family Welfare Government of India.
- Negi, M.S., & Sharma, V. (2016). Income generation and economic improvement through cultivation of medicinal plants in Uttarakhand. *Asian Resonance* 5(2), 101-105.
- Panwar, M.S., Sharma, S.K., & R.B. (2007). "Medicinal Plants and Sustainable Livelihood" R.K. publication. New Delhi.
- Purohit, S.S., & Vyas, S.P. (2004). Marketing of medicinal and aromatic plants in Rajasthan, National Consultative Workshop on Medicinal and Aromatic Plants, held at GBPUAT, Pantnagar.
- Sastry, K.P., Kumar, J.K., & Srinivas, K.V.N.S. (2014). Promotion of cultivation and processing of medicinal and aromatic plants (MAP's) and phytochemical exploration of MAP's for future drug discovery, Central Institute of Medicinal and Aromatic Plants Research Center, Boduppal, Hyderabad.
- Singh, H. P. (2005). Promotion of medicinal and aromatic plant sector in Uttarakhand. Need of hour. National Consultative Workshop on Medicinal and Aromatic Plants, held at GBPUAT, Pantnagar.
- Singh, K.M. (2009). Scope of Medicinal and Aromatic Plants Farming in Eastern India.
- Singh, K.M., Kumar, A., Singh, R.K.P., & Kumar, U. (2013). Medicinal and aromatic plants enhancing farm income: A case of Bihar. ICAR-RCER, Patna.
- Singh, K.M., Singh, U., & Singh, P. (2007). A Study on Role of ATMA, Patna in Development of Supply Chain for Medicinal Plants in Patna District, Bihar.
- Singh, S.P., Kumari, B., & Singh, K.K. (2018). Diversity and conservation status of socio-religious angiosperms of Amroha district of Rohilkhand region (UP), India. *IJASRM. Special Issue 1*, 35-38.