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Diversification of Agriculture Through Medicinal and Aromatic Plants

Effectiveness of medicinal and aromatic plants is well established for the ancient time in the world. Manifold effect of these herbs for curing the chronic diseases is well established. Industries are now moving forward to collaborate with the farmers to transfer new and effective technologies. High value Medicinal and Aromatic Plants (MAPs) now can be produced through active participation of company and farmers. Wasteland can also be used by MAPs since it has ability to well performed because in coming years scarcity of natural resources and other inputs can be prominent. Isolation of bio-molecules from MAP's and improving their contents in plants would further enhance the demand, consequently the profit as these molecules may find use in wide range of applications. The systematic, organized, complementary and globally accepted marketing channel will enhance the socio-economic level of billions people. The basic need is to involve the international industry to develop products through organic cultivation for better effectiveness. The time has come for growers to diversify their traditional grain crops with high value medicinal and aromatic crops.

INTRODUCTION

Many plants have been used by Rishi-Muni from ancient time to heal and cure chronic diseases. The manifold effects of medicinal herbs are still feasible. Today ayurveda reached at the considerable level and could possible by the devotional efforts of our great ancient people Dhanvantari, Charak, Sushrut etc., The herbal treatment system was also adopted by western countries and with due course of time so many modifications have been made.

The villagers of the remote areas are still depends on the herbal medicinal plants because allopathic treatment is unavailable at several levels. Most of the pharmaceutically important preparations from living organisms have come from different plants which are continuously being explored even today also. The need of Medicinal and Aromatic Plants (MAP's) is on the rise in most of the countries due to its importance. Business accountability of medicinal herbal material is valuable and now playing the significant role in the improvement of health for both human as well as live stocks. India is one of the vast diversified, oldest, reservoirs of medicinal and aromatic plants those are used traditionally to cure both acute as well as chronic diseases.

More than five hundred million peoples in India are associated directly or indirectly on plant based medicinal products. The person having poor economic levels are basically depends on these affordable and easily available medicinal plants. Nowadays, if the product is having herbal formulation the educated society has more propensity and acceptability. Marketing of the almost medicinal and aromatic plants are by and large unorganized till date except mint oil, which can give remunerative price to the growers. This may act as a model for many such conditions in near future. Businessman feels that organized retail can addressing the dishes in Indian horticulture such as in fruits, vegetables etc. medicinal herbs can be cultivated as intercrop or can be grown in crop rotation with vegetables and fruit crops.

Today progressive farmers are attracting to enhance their farm income through medicinal and aromatic plants but lack of proper and assured marketing channels, growers are avoiding to cultivate such valuable medicinal crop plants. Fortunately, efforts are made by scientists of the different government and non-government organizations towards developing the Herbal Gardens and also assuring the availability of its quality propagating materials. This success only could be possible by great devotion of scientific community of different institutions. These types of efforts are maintaining several types of medicinal and aromatic plants including both major as well as wild species. This can open up new avenue to those who wants to improve their economic condition as well as valuable contribution in the pharmaceutical as well as cosmetic industries. It is assumed that

amongst most of the prescribed medicines about three fourth medicinal and aromatic plants are involved in their formulations and most of them are used traditionally. Many others are synthetics ingredients prepared on prototype compounds isolated from plant origin.

CONTRIBUTION IN EXPORT

The export of raw and processed plant materials in India is valuable. It is estimated that import of foreign money exceeded billions US dollars from medicinal and aromatic plants. India is being the second largest exporter, next to China and accounts for about 50 per cent of export in comparison to other countries. Although, use of medicinal and aromatic plants in the national market is worth of about Rs. 8000 crore and quantitatively about 2,50,000 tones but worldwide, India has very small share in the growing market. Indian medicinal and aromatic plants with their value added products/extracts can contribute valuably in the cosmetic and aroma industries.

SALE OF PLANT PRODUCT

Sales of plant derived drugs are projected to increase at an average annual growth rate of 6.4 per cent reaching \$5 trillion by end of 2050 (Dr. S.P.S. Khanuja, 2007). These projection exclude plant derived nutraceuticals that do have specific well documented therapeutic properties other than promoting body resistant to diseases. A wide range of dietary supplements, vitamins, minerals, plant based cosmetics, perfumes, flavors, essence etc. which are maintaining the health available in the market. The industry is complex because some small and medium companies do not share data. The main theme of success is to creating awareness and developing new scientific interest in medicinal and aromatic plants. Natural plant extract from medicinal and aromatic plants are recognized as main source of chemical diversity for the production of new formulations either single or compound. So many plants products have been identified for curing serious diseases like Cancer, sugar, hepatitis, antiviral etc.

DEVELOPMENTAL CONSTRAINS

There are so many constraints in the production of medicinal and aromatic plants in developing countries, amongst them:-

- Lack of information, regarding social and economic uses
- Improper agricultural practices

- Lack of knowledge of proper harvest and post-harvest technologies
- Lack of cheaper processing techniques
- Poor yield and low quality products
- Insufficient training facilities to the progressive farmers
- Lack of facilities from government organization regarding infrastructures, warehouses, cold storage etc.
- Initial high cost of farm inputs.

UNREGULATED MARKETING

The unregulated expansion of marketing facilities of medicinal and aromatic plants is threat to the biodiversity. Collection of high value and popular medicinal & aromatic plants species by local people may cause the extinction of that species. Moreover, overgrazing, deforestation and ecosystem degradation are also responsible in declining the availability of wild medicinal and aromatic plants. So governments may take action against uncontrolled wild collection of rare species. Recently attention of the educated people towards MAP's is increasing due to its quality, safety, efficacy and even permanent curing the diseases.

FIXATION OF VALUE

Medicinal and aromatic plants have great potential regarding sustainable cultivation by which farmers are benefitted by higher price of their products in comparison to traditional crops. Contract farming is facilitating private companies to develop a close interaction with farmers for their uniform quality inputs and marketing to assured cash returns. Government also supporting to contract farming because small farmers can benefitted with respect to facilities, infrastructures, resources and ultimately higher prices.

EMPLOYMENT

Large numbers of farmers are attracting every year towards cultivation of medicinal and aromatic plants by getting quality planting materials from Central Institute for Medicinal and Aromatic Plants (CIMAP-Lucknow) and earn additional income even from small holdings. Amongst MAP's some plants are high value crop viz., Geranium, Kali musli, Safed musli, Scented rose (Damask rose) etc. and can also provide

additional profit even from the small piece of lands. Development of superior variety can ensure high productivity and improved quality, which is preferred by user companies and ultimately farmers can be benefitted. CIMAP has developed large number of superior varieties with adoptive values, yield potential and quality traits. Farmers can diversify their agriculture by growing these varieties with low cost of cultivation and higher quality produce according to the drug industries. MAP's are such crops which open up new employment avenues for women, because they can easily contribute their activities in part time in preparation of nursery beds, sowing, intercultural practices, drying, packaging etc.

FARMERS AND INDUSTRIES

Industries are now coming forward to collaborate to the farmers to transfer technologies. High value MAPs now can be produced through active participation of company and farmers. Wasteland can also be used by MAPs since it has ability to well performed because in coming years scarcity of natural resources and other inputs can prominent. Isolation of bio-molecules from MAP's and improving their contents in plants would further enhance the demand, consequently the profit as these molecules may find use in wide range of applications. In favors of billions people a complementary system should be formulate which is globally accepted. The basic need to involve in the international industry is to develop products through organic cultivation for better effectiveness. To promote MAP's quality and production Governments/Institutions/NGOs should formulate strategies to withstand in the drug sector. This would cover not only the domestic market but global market also.

CONCLUSION

Day by day, huge acreages are converting into the water deficit areas at global level. Medicinal and aromatic plants can withstand well in the increasing frequency of abiotic and biotic stresses. Thus, keeping in view of the forms size, market demand and importance of medicinal plants, it is inevitable to emphasize and extension of the cultivation of high value herbs so that grower community can boost-up their socio-economic level, healthy life of the world and contribute significant in the global economy.