



SCOPE AND POTENTIAL OF MEDICINAL AND AROMATIC PLANTS PRODUCTS FOR SMALL AND MEDIUM ENTERPRISES

RAJESWARA RAO B.R.*, RAJPUT D.K., NAGARAJU G. AND ADINARAYANA G.

CSIR-Central Institute of Medicinal and Aromatic Plants (CIMAP) Research Centre, Boduppal - 500 092, Hyderabad, AP, India.

*Corresponding Author: Email- brarrao1@rediffmail.com

Received: March 21, 2012; Accepted: April 09, 2012

Abstract- Global preference for bio-chemicals and products obtained from herbs has created tremendous opportunities for biomass producers and enterprises that manufacture herbal products. India with a medicinal herbal wealth of 8000 species and aromatic plant treasure of 1200-2500 species has become global destination for phyto-molecules and products. Several technologies are currently available for commercial utilization by small and medium enterprises and the international market is ready to accept quality herbal products from India.

Keywords- Biochemicals, phyto-molecules, medicinal herbals, small and medium enterprises.

Citation: Rajeswara Rao B.R., et al. (2012) Scope and potential of medicinal and aromatic plants products for small and medium enterprises. Journal of Pharmacognosy, ISSN: 0976-884X & E-ISSN: 0976-8858, Volume 3, Issue 2, pp.-112-114.

Copyright: Copyright©2012 Rajeswara Rao B.R., et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Introduction

Natural products from plants are well known in old world civilizations. International markets have been utilizing products from herbs since several decades. India is one of the earliest civilizations that have recognized the importance of herbal products for disease management, nutrition and beauty enhancement. With the discovery of several new molecules from herbs for treating dreaded diseases like cancer and the relative safety of these products, the global demand for medicinal plant products has increased in recent years. Similarly consumers are preferring cosmetics with aromatic products from plants resulting in higher demand for the raw material. India is sitting on a treasure of 8000 medicinal and 1200-2500 aromatic plants. In the last 50 years, Central and State Government research organizations have developed several technologies for utilizing medicinal and aromatic plants. Small and medium enterprises have already been set up by many entrepreneurs and opportunities exist for new enterprises in this field [1-5].

Biomass

The primary raw material for plant based products is the biomass of the medicinal and aromatic plants. Biomass is the green or

dried plant part(s) or whole plant obtained from plants collected from their natural habitats or harvested from cultivated plants. The biomass needed for the industry should pass the following criteria-

1. should be from specific plant part(s) derived from a single botanically designated species and should not be mixed with biomass from other related or unrelated plant species
2. should be free from extraneous abiotic matter like dust, stones, soil, and biotic matter such as fungus, droppings from rodents/ insects/ birds etc.
3. should be free from damage due to insects/ diseases
4. should contain the minimum specified or accepted concentration of the chemical (s) of commercial value
5. should be free from chemical contaminants such as heavy metals, pesticide residues etc.
6. should meet the specifications agreed between the supplier and the industry such as colour, admixture with other plant parts of the same plant, level and method of drying, packing etc.

Reasonably priced, good quality (meeting the above criteria) biomass is the basic raw material for the industry and a country that has access to such standard biomass will be at an advantage in the international market.

Medicinal plant products for small and medium enterprises

Small and medium enterprises can be started with the following medicinal plants products [6-10]

1. Seeds: Production and marketing of quality seeds of high yielding varieties (seed companies).
2. Plant parts (leaf, bark, root, seed etc.)- Enterprises such as large scale cultivation as an agro-industry, marketing of dried plant parts (crude drugs) in national and international markets, establishing market net works can be started.
3. Grading of specific plant parts such as leaves of senna, roots of ashwagandha/ safed musli/ long pepper etc. This is the simplest but economically viable small enterprise that can be established at farm level and can add value to the harvested produce.
4. Powders- With the availability of electricity in villages it is possible to establish medicinal plant powders industry as a cottage or village industry by installing simple machinery such as grinders and packing machines. Some self help groups and individual entrepreneurs have already started marketing herbal powders that are safe to use e.g. Powders of ashwagandha, triphala, stevia, isabgol etc.
5. Herbal teas- Dried herbal plant parts powdered to specific mesh size and packed in tea bags or sachets are becoming popular world over. China is credited with utilizing more than 200 medicinal plants as herbal teas.
6. Herbal juices, sherbaths, herbal drinks- These are traditionally used in several countries and are currently aggressively marketed by countries like China, Thailand etc. Herbal beer is being marketed by a firm in India. Herbal drinks such as nan-nari, sugandhipala etc. are well known.
7. Herbal chocolates, sweets etc.- Sugar free sweets, drinks etc are being marketed internationally. Use of herbal extracts in food products is not a new idea.
8. Herbal extracts- Solvent extracts of several medicinal plants with specified minimum concentration of chemicals are traded globally. A number of small, medium and large industries are currently producing hundreds of such extracts.
9. Extraction of medicinal chemicals- Technologies are available for isolation of pure phyto-chemicals such as alkaloids, glycosides, flavonoids, steroids, coumarins etc. from several medicinal plants and these are regularly used by the allopathic drug industry.
10. Plant drugs- This is an age old well known industry manufacturing plant based drugs in traditional systems of medicine such as Ayurveda, Siddha, Homeopathy etc.
11. Herbal cosmetics/ cosmeceuticals- Though herbs have been used since several centuries as beauty aids, products made from medicinal plants in combination with other beauty enhancing products is becoming popular world over. Examples include many aloe products, herbal hair oils, herbal soaps etc.
12. Nutraceuticals- This is a sun rise industry with a large potential for small and medium enterprises.
13. Herbal pesticides- This enterprise has enormous potential in future.
14. Bye product utilization- Many enterprises can be established at rural level making use of bye products/ waste material.

This is not an exhaustive list and many new, innovative ideas can be transformed into small and medium enterprises.

Aromatic plant products for small and medium enterprises

Technologies are available for isolation of aroma principles from aromatic plants through distillation, fractional distillation, solvent extraction, expression, super critical fluid extraction etc [4,5,10]. The following products can be obtained from aromatic plants and enterprises can be established based on these products.

1. Essential oils
2. Aroma chemicals
3. Concretes/ absolutes/ pomades from flowers
4. Oleoresins from spices
5. Resins, resinoids
6. Gums
7. Perfumed water/ hydrosol

These products are widely used in fragrance industry, flavour industry, aromatherapy and pharmaceutical industry. A number of single consumer products or multiple products enterprises can be started at rural and urban centres. Examples of small and medium enterprises in existence include companies manufacturing soaps, agarbatties, rose water, ittars, perfumes, hair oils etc.; aromatherapy/ naturopathy centres, beauty clinics etc.

Global market for medicinal plants and their products

China is ahead of India in this trade and India's market share is meager providing excellent scope and opportunity for new enterprises. The major drawbacks for global positioning of Indian medicinal plant products are: dearth of scientific validity of claimed medicinal properties, quality inconsistencies and high prices of the products. Other factors include adulteration, unethical means adopted by some companies, contaminants exceeding prescribed levels, not adhering to time schedules etc. Government of India is encouraging setting up of industries and is providing training, incentives etc. and is negotiating with many countries concerning export/ import regulations etc. National and State Medicinal Plants Boards are encouraging cultivation, processing, quality testing and exports of herbals and their value added products [9,10].

Global market for aromatic plants and their products

The following table provides an idea of the global trade in aromatic plants and their products.

Table1- Global trade in aromatic plants and their products

Particulars	Trade
Aromatic plants traded in the world	400 types of essential oils
Value of essential oils traded in the world	US\$ 5 billion in 2011
Value of aroma chemicals in the world	US\$ 2.8 billion in 2011
Global trade for flavours & fragrances	US\$ 22 billion in 2010
Global trade in cosmetics	US\$ 300 billion in 2010

The above table indicates the potential of global trade based on aromatic plants. India is in a leading position for volume (> 30000 tonnes/annum) and value of essential oils produced and traded (Indian export of essential oils is worth Rs. 6 billion). Indian essential oils are being imported by all industrially developed countries. Menthol mint industry in north India is a standing example of how scientific farming coupled with entrepreneurship can lead to success at national and international platforms. Ample opportunities exist to emulate this model and apply it to several other Indian aromatic plants [2,5,9,10].

Conclusions

Global consumer preference for natural products to synthetics in perfumery, flavouring, pharmaceutical and many other industries has created tremendous potential for natural products from medicinal and aromatic plants. To match this demand, technologies were developed for commercial utilization by small and medium enterprises. India with its natural wealth of medicinal and aromatic plants offers excellent scope for establishing enterprises at rural as well as urban centres.

Acknowledgements

The authors thank the Director, CIMAP, Lucknow for facilities and encouragement.

References

- [1] Rajeswara Rao B.R. (1990) *National Workshop on Medicinal, Aromatic Plants and Non-Edible Oil Seeds for Rural Industrialisation*, 1-75.
- [2] Rajeswara Rao B.R. (1993) *CHEMEXCIL Exp. Bull.*, 27 (10), 1-11.
- [3] Rajeswara Rao B.R. (1999) *Medicinal plants for dry areas. In: Sustainable Alternate Land Use Systems For Drylands.*, 139-156.
- [4] Rajeswara Rao B.R. (1999) *Aromatic plants for dry areas. In: Sustainable Alternate Land Use Systems For Drylands.*, 157-170.
- [5] Rajeswara Rao B.R. (1999) *XIV FAFAI Seminar on Fragrances and Flavours in the 21st Century*, 134-139.
- [6] Rajeswara Rao B.R., Rajput D.K., Patel R.P., Sastry K.P., Reddy L.P.A. and Ramesh Kumar R. (2008) *National Conference and Exhibition on Herbal and Traditional Therapies.*, 41-46.
- [7] Rajeswara Rao B.R., Rajput D.K. and Sastry K.P. (2005) *National Seminar on Biotechnology: Its Applications in Agriculture, Animal Sciences, Fisheries (Aquaculture)*, Vol. II, 36-42.
- [8] Rajeswara Rao B.R., Sastry K.P. and Rajput D.K. (2004) *Workshop on On-farm and Non-farm Linkages for Employment Generation*, 1-9.
- [9] Rajeswara Rao B.R., Sastry K.P., Rajput D.K., Patel R.P., Ramesh Kumar R. (2008) *National Seminar cum Exhibition on Traditional and Ethnic Foods-Opportunities and Challenges for Industrial Development*, 17-20.
- [10] Rajeswara Rao B.R., Sastry K.P., Ramesh Kumar R., Rajput D.K., Patel R.P. and Reddy L.P.A. (2009) *National Level Seminar on Medicinal and Aromatic Plants and Value Added Products*, 26-36.