

Ayurvedic Medicine Industry in India: With Special Reference to Kerala

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ABSTRACT

India has rich heritage of Ayurvedic treatment and healing of chronic diseases which reflects a prolonged history of standardization and professionalization that has transformed certain aspects of medical and health traditions. Herbal medicines are also gaining importance in developed countries due to changing modern life style induced and chronic diseases. As there has been a steep increase in the cost of health maintenance under biomedicine, the indigenous health systems have become popular and the global consumer preference towards plant medicine and natural products has significantly increased in the recent years. Ayurveda has been seen as an indigenous counterpart to biomedicine. It has been popular in many states of India. Kerala has shown vast scope for wellness and medical tourism as treatment and healing of chronic and life style induced diseases through traditional medicines such as Ayurveda and Yoga are becoming popular in many parts of Kerala and particularly in the tourist destinations. Against this backdrop, present paper highlights the growth and development of Ayurveda industry in India and particularly in Kerala.

Introduction

Among various indigenous systems of medicines, Ayurveda is said to be dominant throughout the country more than 5000 years. Ayurveda is an integrated system of medicine that takes a comprehensive view on the physical, mental, spiritual and social aspects of human beings. Some of the key Ayurvedic treatments encompass of taking balanced diet, appropriate exercise, meditation, herbs, massage, correct breathing practices and exposure to sunlight. The public, usually access Ayurvedic treatment for chronic ailments such as arthritis, gastro-intestinal problems, liver problems, skin problems, rheumatism, bronchitis, anemia, muscular-skeletal problems, mental disorders and for various beauty treatments (Ashrit, 2006). Ayurved is an age old, well documented system of medicine in India. This system of medicine is mostly plant based and treated the patient on an individual basis. This system of medicine has many plus points over the allopathic system,

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like lesser side effects and cheaper in cost etc. Although drugs are very effective and treat patients quickly in allopathic system, but they may produce some other problems. To avoid the flaws of allopathic system, ayurvedic medicines, particularly herbal medicines, have been increasingly used worldwide and have taken by all the rage during the last few decades (Prasad, 2007).

India has 16 agro-climatic zones, 45000 different plants species and 15000 medicinal plants. There is growing domestic and international demand for natural products including pharmaceuticals and other products with medicinal value, food supplements and cosmetics. However, India's share in global export market for medicinal plants is just 0.5 per cent. Aromatic oils are other potentially important forest products, with expanding global markets and limited supply. The market structures for medicinal plants and aromatic oils in most of the states in India are weak and focusing on local trading only. With growing market demand and high potential revenues, many states are considering developing more state control market systems for these products. Madhya Pradesh has made the progress in developing market system for medicinal plants. Chhattisgarh and Jharkhand are also promoting cultivation of medicinal plants in order to empower tribal communities. Madhya Pradesh State Minor Forest Produce Cooperative Federation assists primary collection societies in selling non-nationalized non-timber products by offering fixed purchasing rates for a small selection of plants with market potential.

Medicinal & Aromatic Plantation

Cultivation of medicinal and aromatic plants provide sustainable means of natural source of high value industrial raw materials for pharmaceuticals, agri-chemical, food and cosmetic industries and opens up new possibilities for higher level of gains for farmers. India now covering an area of nearly about 0.4 million hectares are finding a much higher place in international agri-business with an estimated annual growth rate of 10-15 per cent. Medicinal and aromatic plants derive medicines, essential oils and products worth of \$ 72 billion world-wide with the share of \$60 billion of medicinal herbal materials. It is estimated that the demand for medicinal plants alone by the year 2050 would be \$5 trillion. The domestic market of Indian System of Medicine and Homeopathy is of the order of Rs. 4000 crore of which Ayurveda drug market alone is about Rs. 3500 crore. India's total export earnings from the crude drugs, herbal extracts and finished products stand at meager Rs. 800 crore. It is estimated that India's annual production of medicinal and aromatic plants raw materials may equal about Rs. 6000 crore (Singh, 2006). The farming area of the medicinal plants is small and scattered

with more than 80 per cent of the raw material still being harvested from the wild. Thus, proper survey, documentation and harvesting of medicinal and aromatic plants in forest areas may provide enormous opportunities for income and employment generation as well as promoting Indian system of medicines. The degraded forest land can be converted into plantation of medicinal and aromatic plants with community participation and revitalizing soils. Medicines grown in the rural backyards help save money, apart from staving off diseases. A programme of herbal medicinal plantation was supported by UNDP and Danish International Development Agency for revitalizing local health traditions in southern states of Kerala, Karnataka and Tamil Nadu. The forest departments in collaboration with community-based organizations have promoted the concept of Garden of healing in Karnataka, Kerala and Tamil Nadu. Now, UNDP and Global Environmental Facility have commissioned the Foundation of Revitalization of Local Health Traditions, Bangalore to assist in drawing up medicinal plants conservation programme in Arunachal Pradesh, Sikkim, Meghalaya, Uttaranchal, Jammu & Kashmir, Himachal Pradesh and Chhattisgarh. India's 4635 ethnic communities including 1 million folk healers use around 8000 species of medicinal plants. The growing demand for herbal products in the domestic and global market also makes the use of eco-system. Over 90 per cent of medicinal plants commercially used are harvested from wild in an unsustainable manner. This is one of the reasons of loss of biodiversity. About 1000 species are under various degrees of threat across the different biogeographical regions in the country. India's herbal market size is estimated to be about Rs. 5000 crore and there are enormous potential to increase the size of herbal market in India. There are about 8000+ manufacturers of whom, 7000 have sales of less than Rs. 1 crore a year. There is a vast potential for production, distribution and marketing of herbal products in India (Singh, 2006).

Manufacturing of Ayurvedic Medicines

Ayurvedic manufacturing industry is different from the general pharmaceutical industry in terms of source of knowledge, nature and process of drug discovery, scientific applications, and fragmentation of markets, consumer categories and pricing. It shares similarities with the pharmaceutical sector in the case of product innovation, marketing strategies, institutional development and networking (Harilal, 2009). India's pharmaceutical industry is one of the fastest growing segments of the Indian economy with an average annual growth rate of 14 percent during 2002-05 (Greene, 2007). The value of the pharmaceutical market in India was \$6 billion in 2004 representing 2 percent of global market, and ranking fourth in terms of volume and 13th in value (Mani, 2006). Though the turnover from

Ayurvedic sector constitutes meager in terms of actual, it also holds 2 percent of the global herbal market. The leading companies like Dabur, Zandu, Himalaya, Arya Vaidya Sala, Kottakkal (henceforth, AVS) have achieved a significant growth in the last few years. In 2003, among 9,000 Ayurvedic firms, a mere 2 percent constituted more than 80 percent of the market share, while the rest of the firms (small/tiny/household) had a smaller percentage, though they have a strong niche market in some regions, especially in rural areas. The smaller firms cater to a large spectrum of population by providing with low cost Ayurvedic medicine.

Ayurvedic medicines are produced by several companies in India, but most of them are quite small, including numerous neighborhood pharmacies that compound ingredients to make their own remedies. There are more than 9000 Ayurvedic medicines manufacturing units in India and most of them are tiny and small units. It is estimated that the total value of products from the entire Ayurvedic production in India is in the tune of one billion dollars. The industry has been dominated by a few companies for decades. There are today 30 companies which have lion's share in business to meet the growing demand for Ayurvedic medicines. The products of these companies are included within the broad category of "fast moving consumer goods". Most of the larger Ayurvedic medicine suppliers provide materials other than Ayurvedic internal medicines, particularly in the areas of foods and toiletries, where there may be some overlap with Ayurveda, such as having traditional herbal ingredients in the composition of toiletries. The key suppliers in Ayurveda are Dabur, Baidyanath, and Zandu, which together have about 85 percent of India's domestic market. Dabur India Ltd. is India's largest Ayurvedic medicine supplier and the fourth largest producer of FMCG (Dharmanad). It was established in 1884, and had grown to a business level of about 650 million dollars in 2003, though only a fraction of that is involved with Ayurvedic medicine. Dabur's Ayurvedic Specialties Division has over 260 medicines for treating a range of ailments and body conditions-from common cold to chronic paralysis. Baidyanath was founded in 1917 in Calcutta, and specializes in Ayurvedic medicines, though it has recently expanded into the FMCG sector with cosmetic and hair care products; one of its international products is Shikakai Shampoo. Baidyanath has a sales volume of about 350 million dollars, but most of the product sales are in the cosmetic range. The company has over 700 Ayurvedic products, made at 10 manufacturing centers. Included items are herbal teas, patent medicines, massage oils, and chyawanprash. Zandu Pharmaceutical Works was incorporated in Bombay in 1919. The company focuses primarily on Ayurvedic products. However, today Zandu has a chemicals division and cosmetics division. Its total sales volume is about 45 million dollars. One of its current projects is to develop a dopamine drug from a plant extract,

applying for new drug status in the U.S. The Himalaya Drug Company was established in 1934 in Bangalore. It currently has a business level of about 500 million dollars. Charak Pharmaceuticals was founded in 1947, and currently has three distribution centers in India; it produces liquids, tablets, and veterinary supplies. Vicco Laboratories was established in 1958. It mainly produces topical therapies based on Ayurveda and is best known internationally for its toothpaste product, Vajradanti. The Emami Group, founded in 1974, provides a diverse range of products, doing 110 million dollars of business annually, though only a portion is involved with Ayurvedic products, through its Himani line; the company is mainly involved with toiletries and cosmetics, but also provides Chyawanprash and other health products. Aimil Pharmaceuticals Ltd., incorporated in 1984 and engaged in manufacturing and sale of both generic and proprietary Ayurvedic medicines, with a business level of about 20 million dollars annually. It is known for its proprietary formulas for hepatitis, diabetes, menstrual disorders, digestive disorders, and urinary diseases. Exports of Ayurvedic medicines have reached a value of 100 million dollars a year which constitute about 10 percent the value of the entire Ayurvedic production in India. About 60 percent of this is crude herbs, about 30 percent is finished product shipped abroad for direct sales to consumers, and the remaining 10 percent is partially prepared products to be finished in the foreign countries. In India, 60 percent of registered physicians are involved in non-allopathic systems of medicine. In addition to the nearly 3.66 lakh Ayurvedic practitioners, and about 1.70 lakh homeopathic physicians. Reliance on Ayurvedic medicine is heavy in certain regions of India, such as Kerala in the Southwest. Many Ayurvedic practitioners in small villages are not registered (Dharmanad).

Ayurvedic Medicine Industry in Kerala

Kerala is considered to be the home of traditional Ayurvedic system, with a rich biodiversity and natural ingredients based on plant species. Kerala has the second largest number of Ayurvedic manufacturing units next to Uttar Pradesh. In Kerala, AVS medicinal unit, established in 1903, is the pioneer in mechanization and bulk production as solution to the constraints in the steady supply of medicines. The developments in Ayurvedic pharmacy during the past half a century focused on the enhancement of potency, changing the form of medicine and improving palatability. AVS initiated the mechanization era with the initiation of AC generator in 1949. Today, almost all leading Ayurvedic firms have their outlets throughout Kerala, but each firm has created its brand loyalty and niche market in particular regions within Kerala (Harilal, 2009). AVS is located in north Kerala (Malappuram, Kasargode, Palakkad); Sitaram, Arya Vaidya Pharmacy and Vaidya Ratnam are in Thrissur-Ernakulam belt; and Nagarjuna herbal concentrates in south

Kerala (Ernakulam and southward), SD Pharmacy, while Oushadhi and Pankajakasthuri cater to all regions of Kerala. There is heavy geographical concentration of units in Kerala. Majority of the units are located in north Kerala. This concentration of industry may be ascribed to the availability of medicinal plants, existence of qualified *vaidhyars*, recognition for Ayurvedic system etc. Majority of the units have a strong traditional knowledge of Ayurveda which was richly inherited from their forefathers. District wise data of Ayurvedic firms shows that concentration of industry in the state is especially in Thrissur. There are 195 manufacturing units in Thrissur, because it is the home-ground of the Ashtavaidya families who continue to exert a strong influence here and Vaidyaratnam, a major firm is connected to Thaikkattu Moosath, one of the Ashtavaidyas. Kollam and Ernakulam follow Thrissur with 121 and 112 units, respectively. Despite the constraints like increasing raw material expenditure, firms like AVS, Vaidyaratnam and Oushadhi have made significant profits (Harilal, 2009).

Ayurvedic manufacturers in Kerala could be broadly categorized under the three types : (1) household level, small manufacturing centres run largely by vaidyas to serve the village needs. These are largely self-regulated entities, growing on the basis of the track record and credibility; (2) large-scale units solely manufacturing Ayurvedic medicines as per the texts. Many a times, these companies draw upon traditional knowledge and selectively adopt modern technology to attain growth; and (3) firms, which mainly concentrate on the nutraceuticals and cosmetics along with medicines. However, they face regulatory problems (Harilal, 2006). Normally Ayurvedic drug manufacturers in Kerala are classified into two categories - organized and unorganized manufacturers. The organized sector can be further classified into large scale manufacturers and small scale manufacturers. Large scale manufacturers are well established manufactures who operate at national and international levels. They are the leaders in the industry who bring dynamic changes into the industry. Large firms have the advantage of being the torch bearers of the royal families who possessed mastery of Ayurveda. These firms enjoy the goodwill and acceptance in the minds of the present day consumers. They invest largely in R & D and are largely responsible for the revival and growth of the Ayurvedic industry in the country. In terms of source of knowledge, nature and process of drug discovery, product innovation, marketing, scientific applications, fragmentation of markets, consumer categories and pricing they resemble the allopathic pharmaceutical sector. Kerala State Industrial Development Corporation (2004) identified 11 major players in the State. Small scale manufactures operate in a particular geographical area and produce a few specialized drugs. They are large in number but contribute very marginally to the total production. Their production is mainly household oriented. They do not carry production on

all days. Nonetheless they are very strong in their area of operation. The unorganized sector consists of small units owned and operated by *vaidhyars* who are locally well accepted. They have rich clients and are always approachable. They produce as per the need and do not face problems like infrastructural constraints, procurement of medicines, mechanization and other fiscal formalities and regulations. The production process followed by them is very simple.

Most of the medicinal herbs needed for the preparation are grown in their own premises or are locally bought. Their consumers have greater confidence in them and they are not registered manufacturers their sales turnover is not officially known but the total sales of the entire unorganized manufactures taken together will be much larger than the sales of the large firms taken individually. Even the new generation Ayurvedic firms possess sound hereditary traits. This hereditary legacy has helped tremendously in earning reputation and good will for the units. The Ayurvedic industry in the state is dominated by the private sector. There are only two public sector firms in the state. The Pharmaceutical Corporation of Kerala Limited (Oushadi) and Ayurdhara⁴ established in 2000 operated by the Kerala State SC/ST Federation. These two units supply Ayurvedic medicines to the government Ayurvedic hospitals, dispensaries and clinics. Besides they have agencies within the state and outside. Among these two units Oushadi is key public sector firm and that part of the demand unmet by Oushadi is fulfilled by Ayurdhara (Harilal, 2009).

In Kerala, there are mainly four outlets for the primary collectors to sell their products viz., the oldest market at Badagara, in Kozhikode District; Kozhijanpara in Palakkad District (both in North Kerala) and Kottur in Thiruvananthapuram District (South Kerala). In Kerala the traders who appear in the second place collect the plant at a cheap rate and sell it to the distributor at the district level at a high price. With the growth of the Ayurvedic manufacturing units the number of these traders at village level has increased. They adopt two methods to raise their profits, either by reducing the buying price from the primary collectors which is much easier as they have less bargaining power and other by increasing the selling price of the plant part. The latter is not an easy strategy as there are too many traders in the market. Here an increase in the price by one trader will only lead to loss of a potential consumer. So the traders opt the way of deteriorating the financial gains of the primary collectors to raise their capabilities. The third actor in the chain in Kerala is the big businessmen who buy plant parts from the traders and sell it to the manufactures. They adopt some kind of value addition here. The business men or commission agents collect the plant in the raw form and convert it into semi processed form. Various methods of

semi processing that are possible are cleaning and grading, cutting mixing, deseeding etc.

Cleaning and grading are simple processes. Cleaning involves washing the plant part mostly root part and removing the mud and other impurities from the plant. This provides tremendous opportunities for the businessmen to charge higher price. Grading involves separating different quality classes. Another kind of chain operating in Kerala is institutional or government regulated one. The primary /tribal collectors are directly connected to the tribal cooperatives which come under the Kerala State SC/ST Federation. The four branches of the Federation, located in Trivandrum, Adimali, Thrissur and Wayanad districts, market the medicinal and other forest products. Every year, the Minor Forest Products Committee allots forest areas to different tribal societies for the collection of NWFP's. To facilitate collection, societies establish collection depots inside the forests during the peak collection season.

An estimate (Gautam *et al.*, 2002) shows that about 84 percent of the domestic market for Indian system of medicine is for Ayurveda, 13 percent for homeopathy and 3 percent for Unani and Siddha. India's pharmaceutical exports grew from \$1.9 million in 1999 to \$5.2 billion in 2005 with a trade surplus of \$3.8 billion and the vast majority of India's exports, are mainly to developed economies of the west, particularly the US, Germany, the UK and Russia (28 percent, 10 percent, 8 percent, 11 percent, respectively). On the other hand, most of the Ayurvedic exports from India are in the form of food supplements, toiletry products and cosmeceuticals. This is because of the non-acceptance of Ayurvedic medicines and drugs for want of data on its scientific proof 13 and efficacy standards. The growth of Ayurveda in comparison with the manufacturing sector of Kerala is promising with high level of growth and consistency in net profit, value of output and NVA. The fast depletion of medicinal plant is a major concern, and higher vertical integration is required for sustaining this industry by reducing the transaction cost (Mani, 2006).

Conclusion

Herbal medicines and their preparations have been widely used since ancient period in developing and developed countries. Herbal medicines are the synthesis of therapeutic experiences on generations of practicing physicians in indigenous systems of medicine (Thillaivanan and Samrasj, 2014). Because of the efficacy, safety and lesser side effects, they are also in great demand in the developed countries due to chronic health problems. The Indian systems of medicine i.e., Siddha, Ayurveda & Unani mainly encompass herbal medicines along with herbo-mineral formulations. The preparations are either as single herbs or as collections of herbs in composite formulae. However,

herbal medicine manufacturing industry faces challenges, constraints and problems in availability of raw materials as quality of medicinal plants is declining due to environmental degradation, climate change and over exploitation of resources. The adulteration is also increasing as standardization in processing and manufacturing of herbal medicines is not being ensured by the manufacturers. The cost of herbal drugs and medicines is also gradually increasing. Thus, strict regulation in cultivation of medicinal and aromatic plants, conservation of herbal resources and traditional knowledge as well as manufacturing of herbal medicines will be required.

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