

MEDICINAL PLANTS FOR MODERN HEALTH CARE

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There is a growing focus on the importance of medicinal plants and traditional health systems in solving the health care problems of the world. Because of this awareness, the international trade in plants of medical importance is growing phenomenally, often to the detriment of natural habitats and mother populations in the countries of origin. Most developing countries have viewed traditional medical practice as an integral part of their culture. In spite of this traditional health care systems suffered a setback during colonial times and lost patronage particularly in urban areas. Unfortunately, post-independent India still suffering from the colonial hang up continued to favour western allopathic medicine as the system of choice for India's health care system. The results are there for all to see. We have next to no primary health care and practically non-existent veterinary care in our rural areas because the expensive western system is too slow (it takes 5 years to train a doctor) to meet the critical health care needs of our exploding population..

The answers to these problems are obvious . A strong revival of the Indian systems of medicine like Ayurveda and Siddha and a thoughtful, high level investment in developing the medicinal plant base and manpower needed to translate our traditional skills and resources to a functional, modern system. . Our role model should be China which has a tradition as old as ours but has done a far better job of maintaining that tradition and making it relevant to China's health needs. In China traditional medicine still retains a 40 % share of the medicine market nationwide. In rural areas, 90 % of the medicines used are of traditional origin. The sale of traditional medicines in China has more than doubled in the last five years. Today, the majority of China's factory processed drugs are of plant origin and medicinal plant preparations are almost as important as others like antibiotics. A highly developed and well organised industry delivers quality drugs to the Chinese people and exports plant based drugs to markets where the Chinese system of medicine is practised. Although most of this goes to Asian countries including India, China is developing markets in Europe, Canada and the USA.

India should learn something from this and develop its domestic market as well as exploit the international market which is growing very large, very quickly. With the interest in phyto, or plant based medicines growing in Europe and the US, it is estimated that trade in herbal drugs and cosmetics is of the order of a few billion dollars annually. And it is a growing market. One only has to see the instant success and rapid growth of a small level entrepreneur like Shahnaz Hussain to understand what a well organised industry backed by research and standardisation could achieve.

India should not export medicinal plants per se but go in for value addition of the highest order and manufacture and export phyto medicines to international specifications. There is more than enough expertise available in the country and short training programs can bring local manufacturers up to international standards. Unfortunately, at present most Asian countries export raw materials even though they have the technical knowledge and

pharmaceutical industries to add value to their resources. Very often, the financial resources are lacking or industry is not organised to exploit this branch. This results in the situation that almost 90 percent of the finished health products are still being manufactured in Europe and North America.

At present a lot of raw material is being imported by Europe and America, often in violation of the Convention on International Trade in Endangered Species (CITES). Germany is the largest importer of unprocessed medicinal plants (and a significant offender of CITES regulations) since it has a strong tradition of alternative medicine. Along with the formal allopathic system, other, alternative forms of medicine are used and prescribed by doctors in conservative institutions like university clinics and government hospitals. von Ardenne's oxygen enrichment therapy is as widely used as ayurveda and acupuncture. Germany, which gave the world homeopathy, is comfortable with the use of plants as medicine and along with its own tradition of using European plants like lavender, rosemary and gentian for therapeutic purposes, it has willingly included alternative and traditional healing methods from other cultures.

Policy and use regulation is one of the most sensitive aspects of developing and using plant based medicines and health products. This means that use must be sustainable and the harvesting and gathering of medicinal plants should be very strictly regulated so as not to kill off the goose that lays the golden egg. Indiscriminate harvesting will lead to the extinction of natural populations which are still the only source of bioresources. Already, world markets experience wild fluctuations in the price of herbals. Such fluctuations usually come in cycles of six to nine years since the availability of many wild plants goes from oversupply to scarcity very quickly and then stabilises again. These swings reflect the stages when the plants are overharvested, are therefore in short supply and command a high price. At this time natural populations are under extreme stress and some are threatened with possible extinction. This price swing would be a good indicator for the government to gauge the threat to distinct plant types by overexploitation and could help to identify the habitats that must be put under strict regulation to foster conservation.

At present there is almost no policy worth its name to regulate the procurement and sale of medicinal plants in India. At the other end of the spectrum, products derived from medicinal plants are subject to no controls either. In fact, herbal products do not even have to pass the scrutiny of the Drug Controller of India, like allopathic drugs have to. The Drug Controller's office has no authority to examine or challenge the contents of herbal products. This has led to stories about spurious contents and blatant cheating on the part of the better known herbal drug companies. One story, apocryphal or not, about a very well known company says that they produce more Chyavanprash than would be possible if they had bought every single Amla (*Emblica officinalis*) grown in the country. Amla is an essential ingredient of Chyavanprash. The allegation against this company is that it uses the humble pumpkin instead of the expensive Amla, thus inflating its profits severalfold, even as it puts a spurious product on the market.

If India is to become a major player in the international phytomedicine and herbal cosmetic market, it will have to enforce stringent quality control and transparency like China which has very strict criteria for regulating the sale of traditional plant based medicines. In a paper prepared for the World Bank, Lambert and co-authors describe the Chinese treatment and handling of medicinal plants and herbal drugs. There are several lessons that India can learn from China, like how to maintain the high standard of quality control that gives Chinese products their excellent reputation.. All traditional Chinese medicines that are produced by the pharmaceutical industry for export or for local use, are subject to quality control tests before being released. Each factory has its own quality control unit that makes random quality checks.

The important thing about the Chinese quality control system is the attitude. Rather than wanting to cut corners and boost production (and increase profits) by putting in pumpkin instead of Amla, the attitude is that high standards must be maintained and the quality and reputation of Chinese traditional medicines produced in China must be ensured. The government has laid down rigid criteria for traditional medicines. The manufacturer must list all ingredients. Reviewing authorities check on the veracity of these listings. It is only when they are satisfied that the product conforms to the specifications described in Chinese traditional medicine, and that it is safe and effective, will the medicine be allowed to be released in the market or for export. The review and assessment is not carried out by some silly bureaucratic committee but by persons trained in Chinese medicine.

The Chinese are aware of the scepticism with which new and alien products can be treated by the global community. In their efforts to integrate Chinese medicines into the modern medicine system and conquer a share of the international pharmaceutical trade, they have laid a very strong emphasis on transparency, standardisation and quality control. In order to achieve this, they have developed pragmatic, workable methods to upgrade and modernise the production of Chinese medicines. Instead of pontificating and theorising as we tend to do in India, the Chinese have made their system viable by a hands on approach. This includes establishing a close working relationship between field scientists, pharmacologists and clinicians so that an all round integration is achieved.

The Indian systems of Ayurveda, Unani, Siddha and the host of other lesser known medicine practices in tribal areas are a fund of knowledge and wealth. We have not yet developed a comprehensive, overall strategy for forward and backward integration between collectors, vaidas and hakims on the one hand and the scientists, modern market place and export arena on the other. Until we do that with rigid quality control, we will not be able to translate our assets into export earnings or into desperately needed, affordable health care for our people.