

**A Commentary on the Current Scenario and Future Perspectives of Herbal
Drugs: Emphasizing Commercial Potential and Challenges**

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ABSTRACT

A large population of globe relied on holistic and alternative medicine and there is a drastic growth in consumption of herbal substances in last few decades. The studies, suggest that almost 80% of the population in developing world relying on herbal substances as pharmaceuticals, cosmeceuticals and nutraceuticals. Evidently there is a sharp growth in global trade of herbal supplements and medicines. China and India have been the leading suppliers of herbal goods until date. However there is a drastic difference in terms of their market size. There are several challenges in the manufacturing of herbal formulations, such as, but not limited to, regulatory hurdles, quality control issues, and the scientific validation required supporting the efficacy and safety of herbal formulations. These all factors together poses serious challenges for Indian exporters. This article presents a brief overview of the current landscape and future prospects of herbal drugs, with a particular focus on their commercial potential and associated challenges.

Keywords: Standardization, Herbal medicines, Herbal cosmetics, Nutraceuticals, Global trade

1. Introduction

Since time immemorial human society had exhaustive knowledge about herbs and herbal medicine. Herbal medicines and home remedies have been in practice since man started recognizing their use as a cure for various ailments of the body, but routine use in practice began from the time when great scholars and saints documented the information in systematic manner in the shape of “*Samhitas*”. The wealth of information gathered and assembled by those scholars and saints on a wide range of issues are directly connected to human ailments. The design of polyherbal blends and their use is so great that it is beyond our imagination. If we refer to historical data most of the research institutes have worked on clinical research for ayurvedic and herbal preparations for validating the indications mentioned in reference texts, but till date no research organizations nor Government bodies have made an attempt to standardize ayurvedic formulations in today’s pharmaceutical requirements for traditional system of medicines, 84% herbal medicines are ayurvedic, rest are referred to other traditional medicines [1-3].

Since ages, herbs and herbal medicines are preferred by people. Majority of the global population still rely on herbs and herbal remedies for chronic ailments[4]. Majority of people worldwide are moving towards herbal medicines due to rapid information flow, education, awareness etc. In addition, suspected side effects of synthetic chemical based formulations promote the preference for herbal medicines. Botanical materials constitute a major part of all the traditional medicines and the Indian *MateriaMedica* includes about more than 2000 materials of natural origin. With vast biodiversity, India has a rich heritage of traditional medicine and the traditional health care system that has been flourishing for many years. Demand for herbal medicines has increased remarkably due to people awareness about natural therapies. Herbal products are not only popular in India but are also gaining its importance in western world. These herbal products are sold as food supplements/dietary

supplements, botanicals and also as traditional herbal medicine products (THMP). These products are marketed in various dosage forms like tablet, syrup, ointment, capsule etc. In India, Ayurvedic medicines are often considered safe by general masses and are obtained as “Over the counter” (OTC) products. However, it’s indicated that if the medicines are not formulated with proper translation of ayurvedic practice can cause health problems [5-6].

However, the difficulty of standardizing Ayurveda formulations is due to the intricacy of the herbal formulations in the Ayurveda medication sector. At first appearance, the many generic Ayurveda formulas created and sold by various corporations’ exhibit huge differences among the same product. When it comes to Ayurvedic medicine, strict and uncompromising quality control measures are critical to maintain consistency and high standards throughout the whole industry's formulations and products. In order to undertake regular quality control on these formulations, it is required to create thorough standardization procedures and analytical tools for quantifying markers [7-9].

2. Market Share of Ayurvedic Medicine in the Pharmaceutical Industry

Plant, animal, and other natural products have proven essential in the treatment of human ailments. As a result of a common perception of having comparatively fewer toxicities, and side effects, and their effectiveness, the Ayurvedic medicines are in high demand. Ayurvedic medicinal practices and herbal-based medicine manufacturing enterprises have mushroomed over the globe because of these good features.

The market size, revenue generation, and sales data of Indian herbal drug exports have a marked amount of increment in the recent past due to the global inclination towards natural and traditional medicines. The Indian herbal drug export market has diversified and a varied export basket from herbal extracts to essential oils, herbal teas, and Ayurvedic medicines have been registered. The turnover from Indian herbal drug exports has contributed much to

the Indian economy. Major importing countries for Indian herbal drugs are the United States, countries in Europe, and in the Southeast Asian region.

Ayurvedic herbs and their derivatives shown a tremendous yearly growth rate and rise in sales over the previous decade. As per a research report on AYUSH Sector has been published by Forum on Indian Traditional Medicine (FITM), the current turnover of Indian AYUSH industry is US\$ 18.1 billion and the market size of Indian AYUSH industry as a whole, has grown by 17 per cent during 2014-2020. The total AYUSH & herbal medicines export of India has increased from US\$ 1.09 billion in 2014 to US\$ 1.54 billion in 2020, registering a robust growth rate of 5.9 per cent annually [10].

China and India have been the leading suppliers of herbal goods until date. However there is a drastic difference in terms of their market size. The China being the largest exporter accounts for 17% global market size, whereas India only has 8% market share, followed by Egypt (7%) and Spain (5%) [11]. This is in spite of the fact that the Indian AYUSH medical systems utilizes 7000 plant species, the Traditional Chinese medicine (TCM) uses just 5000 plant species. Poor quality control standards, inefficient agriculture techniques, a lack of awareness about global marketing tactics, and a lack of standardization of processes and services are all affecting the Ayurvedic medicine sector.

In the foreseeable future, the Ayurvedic product market is predicted to grow substantially because to the excellent effectiveness of a number of drugs developed solely using traditional Ayurvedic expertise. In spite of the fact that both countries, India and China, are leaders in herbal drug exports, one can find many differences in the kind of products being exported, the market penetration, and the regulatory framework in place. India exports Ayurvedic medicines and natural herbal products and has been getting a good response from health-conscious people, while China's herbal drug exports cover a wide array of products such as herbal extracts, herbal powders, essential oils and TCM formulations. Both countries

continue to leverage their strengths in herbal medicine production and export to meet the growing global demand for natural healthcare solutions.

According to WHO estimates, the present \$62 billion global herbal industry will expand to \$5 trillion by 2050 [12]. An effort by various organizations, including the National Medicinal Plants Board (NMPB), the Department of Ayurveda, Yoga and Naturopathy (AYUSH), the World Health Organization (WHO), in countries such as the United States, United Kingdom, Russia, Hungary, and South Africa, has resulted in new opportunities for the promotion of Ayurveda.

3. Hopes and Hurdles in the use of Ayurvedic medicine

The ancient Ayurvedic medical method is currently practiced all over the globe. A mix of medicinal herbs, animal products, minerals and metals, such as gold, copper, lead, mercury, iron and zinc, is used to create Ayurvedic medicine formulations. Ashes or bhasmas of these metals are mostly added to herbal items in the idea that they function as catalysts and enhance the specificity of the target [13]. Ayurvedic practitioners, on the other hand, often prescribe drugs that don't match current GMP standards or are made by the practitioners themselves. Ayurvedic remedies have been linked to lead poisoning in 12 instances between 2000 and 2003, according to the Centers for Disease Control [14]. Strict guidelines for Ayurvedic preparations are thus anticipated to decrease side effects and promote worldwide acceptability of these medicines. Limited rules apply to many herbal supplements currently on the market. People sometimes take these herbal supplements without fully understanding the benefits and drawbacks, and as a result, they end up with harmful side effects.

Furthermore, it is possible to change the chemical composition of plants by a wide range of variables, such as the environment in which they are grown and the climate in which they are

grown. Morphological similarity is also a factor in prescribing various plants for different illnesses [15]. Because of this, the chemical compositions of various plants differ greatly.

The adulteration of herbal drugs also has been a major concern in the global market, in view of the risks it raises with regard to consumer safety which results in the loss of credibility of traditional medicine systems such as Ayurveda and Traditional Chinese Medicine (TCM). Intentional addition of synthetic substances or herbal substitutes, mislabeling, and substitution of high-value herbs with cheaper ones are common methods of adulteration. Several research reports were published on adulteration of herbal pharmaceuticals and food supplements have been published since the turn of the 21st century. This practice, in turn, not only compromises the therapeutic efficacy of herbal products but can also bring about health hazards for the consumers [16].

There is a need for stringent regulatory frameworks, advanced analytical techniques for quality control, and enhanced awareness among consumers and manufacturers regarding the significance of using genuine, unadulterated ingredients to assure quality and authenticity of the herbal drugs. Attention to adulteration is important in maintaining the integrity and trust of herbal medicine in regard to the safety and efficacy of these traditional remedies worldwide. Standardized authentication of herbs is necessary for the delivery of high-quality herbal products for improved health. Such techniques as molecular marker quantification may be used to accurately identify plants, for example. In order to avoid harmful consequences from adulteration of herbal medicine and to reap the intended health advantages, it is essential that standards on plant material authentication be carefully enforced [9, 17, 18].

4. Recommendations and Future perspectives

The most obvious answer of why herbal drugs adulterated is the lack of regulation in India. The regulatory frameworks plays crucial role in production, distribution and dispensing of

herbal medicines. There is a need to harmonize regulatory frameworks in India with global requirements in order to develop and enhance the consistent quality and safety standards. Quality control measures must be stringent, and so should be the certification process of such drugs based on advanced analytical techniques coupled with research and development to scientifically validate traditional knowledge. Stakeholders within the supply chain need to undergo educational and training programs regarding the integrity of medicinal plants and further sustainably sourced and traceable herbal products in the industry. The global herbal drug market is projected to rise due to an increased interest in the health benefits associated with natural solutions and the possibility of integration with mainstream medicines. The technological advancements in biotechnology and nanotechnology in relation to the innovative delivery systems can bring a great impact to make the herbal formulations effective and consumer-friendly. On one hand, policy support, incentives, and the creation of herbal drug export zones can also standardize and smoothen the regulatory process and further enhance competitiveness. Transparency about product benefits and quality assurance will build consumer trust, enhance marketability, and drive demand, which is beneficial to both the herbal drug industry and global health.

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