

NUTRACEUTICALS IN AYURVEDA: BRIDGING ANCIENT WISDOM WITH MODERN NUTRITION

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ABSTRACT

Nutraceuticals, derived from natural sources, offer health benefits beyond basic nutrition. *Ayurveda*, an ancient Indian medical system, incorporates several herbal formulations that align with modern nutraceutical principles. This paper explores the Ayurvedic perspective on nutraceuticals, key herbal components, their therapeutic benefits, and modern scientific validation. The integration of Ayurveda into contemporary wellness approaches highlights its relevance in preventive healthcare. This study also emphasizes the need for further research and standardization to ensure the global acceptance and safety of *Ayurvedic* nutraceuticals.

KEYWORDS: Nutrition, Nutraceuticals, Ayurveda, Health.

INTRODUCTION

Nutraceuticals, a combination of "nutrition" and "pharmaceuticals," are bioactive compounds that provide therapeutic benefits. Ayurveda, the traditional Indian medicinal system, has long emphasized the medicinal value of food and herbal formulations. The concept of "*Rasayana*" (rejuvenation therapy) in *Ayurveda* closely aligns with modern nutraceutical principles, focusing on longevity, disease prevention, and overall well-being. Many *Ayurvedic* texts, such as Charaka Samhita and Sushruta Samhita, highlight the importance of functional foods, herbs.

This study explores how *Ayurvedic* principles align with modern nutraceutical concepts, offering holistic solutions for health and wellness. It also evaluates the scientific evidence supporting the use of *Ayurvedic* herbs in modern nutraceutical formulations.

Nutraceuticals in Ayurveda

Although the concept of nutraceuticals have gained popularity more in the recent times, its roots can be traced in *Ayurveda*.

तच्च नित्यं प्रयुज्जीत स्वास्थ्यं येनानुवर्तते । अजातानां विकाराणामनुत्पत्तिकरं च यत्^{II} (च.सू.5/13)

"The diet which besides providing the basic nutrition to the body, helps to maintain the healthy state of the body and prevents the occurrence of diseases should be consumed."

Ayurveda (an ancient Indian system of medicine) had mentioned the importance of the food, its benefits in maintenance of the health, and also its usage as medicine or for therapeutic use. *Ayurveda* had described many dietary supplements in various contexts e.g., *Dinacharya* (daily regimen) and *Ritu Charya* (seasonal regimen).

Although, the modern nutraceutical industry dates to 1980s in Japan, its roots can be traced to the *Ayurveda*. One of the synonyms of treatment in *Ayurveda* is *pathya* which is defined as 'wholesome food is taken in right time and quantity, that can help to recover from disease condition either alone or with other medications. *Pathya ahara* is diet which has beneficial effect over the body and mind of an individual without causing any untoward effect. Food and the methods of consumption were explained by *Ayurveda* beautifully to prevent, to treat and also to cure the diseases.

According to *vaidya Lolimbaraj* 'one should eat food not only for *sharira poshana* (nutrition) or *dhatu poshana* but also to be *ojovantha* (to stay fit immunologically). Also, the same author had stated that 'If a person eating balanced food with rational he will not be affected with diseases needing no medicines'.

Likewise, 'when a person gets disease and using medicines without following dietary protocol (*pathya*) the existing disease may not get cured.

Classification of Nutraceuticals and Their Ayurvedic Counterparts

Nutraceutical Type	Ayurvedic Example	Health Benefits
Dietary Fibers	<i>Triphala, Amalaki</i> (Indian Gooseberry)	Improves digestion, reduces cholesterol, prevents diabetes, boosts immunity
Probiotics	<i>Takra</i> (Buttermilk)	Enhances gut microbiota, aids digestion, balances <i>Kapha</i> and <i>Vata doshas</i>
Prebiotics	<i>Garlic (Allium sativum)</i> , Selenium-rich foods	Supports gut health, improves nutrient absorption, enhances immunity
Polyunsaturated Fatty Acids (PUFA)	<i>Atasi</i> (Flax Seeds)	Reduces LDL cholesterol, supports cardiovascular and brain health
Antioxidants	<i>Amalaki</i> (Indian Gooseberry)	Prevents aging, enhances immunity, supports cardiovascular health
Polyphenols	<i>Pippali (Piper longum)</i>	Anti-inflammatory, antimicrobial, supports neurological health
Spices	<i>Cardamom (Elettaria cardamomum)</i>	Supports digestion, cardiovascular health, and respiratory function
Herbal Formulations	<i>Chyavanaprash, Preenan Modak, Kushmand Avaleha</i>	Boosts immunity, improves respiratory health, enhances energy levels, and supports longevity

IMPORTANT NUTRACEUTICALS

Chyavanaprasha Avaleha

This is a classical *Ayurveda* preparation which consists of more than 50 herbs, *taila*, *ghrita*, *khandasarkara* & *madhu*. It has *rasayana* as well as *rogaghna* property. The main ingredient of this formulation is *Amalaki*, which is a rich source of Vitamin C, found to possess anti-oxidant, immunomodulatory, cytoprotective & hypolipidemic activity. *Chyavanaprasha* exhibited hepato-protective effect in studies and reduced postprandial glycemia & blood cholesterol levels.

Preenan Modak

It is economically affordable too. Puffed rice is easy to digest and strengthens body. It is recommended in vomiting and diarrhoea which is frequent in infants. Priyal seeds are tonic

for heart and strengthening body. Yashtimadhu is rejuvenating (*Rasayan*) and brain tonic (*medhya*). This study is assessing efficacy of *preenanmodak* on infant's growth and development.

Kushmanda avaleha

In five basic *Kalpana Kushmanda Avaleha* or *Kushmanda Rasyana* is mentioned in *Panchvidh Kashaya Kalpana*. It has been prepared as per reference of *Sarangdhar Samhita*. *Avaleha Kalpana* or *leha Kalpana* is a semi solid preparation of drugs prepared with addition of jaggery, sugar or *Khand* (sugar candy) and boiled with prescribed juice or decoction. An indication of contribution of a food to the nutrient content of the diet. This value depends on the quantity of a food which is digested and absorbed and the amount of the essential nutrients (Protein, Fat, Carbohydrates, Mineral, Vitamins) which it contains.

Avaleha Kalpana has more shelf life due to jaggery, it is improving mental and physical health provide strength, nourishment of the body. It can be easily taken by children because of sweetness agent.

METHODS

A comprehensive literature review was conducted using classical *Ayurvedic* texts, peer-reviewed research studies, and scientific publications related to *Ayurvedic* herbs and nutraceuticals. The inclusion criteria involved *Ayurvedic* herbs with established therapeutic benefits and evidence from pharmacological and clinical studies. The analysis focused on identifying key *Ayurvedic* formulations, their bioactive compounds, and their alignment with modern scientific findings.

The methodology involved:

- Reviewing classical *Ayurvedic* literature to identify references to functional foods and medicinal herbs.
- Analyzing scientific research that validates the therapeutic efficacy of selected *Ayurvedic* herbs.
- Examining the biochemical properties of *Ayurvedic* nutraceuticals and their role in human health.

RESULTS

Several *Ayurvedic* herbs and formulations demonstrate significant nutraceutical properties. The key findings include.

1. **Ashwagandha** (*Withania somnifera*) - Acts as an adaptogen, reducing stress and enhancing cognitive function.
2. **Turmeric** (*Curcuma longa*) - Rich in curcumin, a potent antioxidant with anti-inflammatory benefits.
3. **Amla** (*Emblica officinalis*) - A natural source of Vitamin C and polyphenols, enhancing immunity and skin health.
4. **Brahmi** (*Bacopa monnieri*) - Enhances memory, cognitive function, and neuroprotection.
5. **Triphala** (Combination of Amalaki, Bibhitaki, and Haritaki) - Promotes gut health, digestion, and detoxification.
6. **Shatavari** (*Asparagus racemosus*) - Supports female reproductive health and hormonal balance.

DISCUSSION

The increasing scientific validation of *Ayurvedic* herbs supports their incorporation into modern healthcare. Studies have demonstrated their efficacy in disease prevention, stress management, immune support, and cognitive health.

Scientific Validation and Challenges

Modern research methodologies, including pharmacological analysis, clinical trials, and biochemical studies, have confirmed the efficacy of many *Ayurvedic* nutraceuticals. However, challenges remain in terms of standardization, bioavailability, and regulatory approval. The need for proper dosage formulations, quality control, and clinical validation is crucial for their integration into mainstream healthcare systems.

Future Prospects

The global demand for plant-based and natural remedies is driving the growth of the *Ayurvedic* nutraceutical industry. Emerging trends include.

- The use of nano-formulations to enhance bioavailability.
- Combining *Ayurvedic* herbs with probiotics and functional foods.
- Development of evidence-based integrative medicine approaches.

CONCLUSION

Nutraceuticals in *Ayurveda* offer a holistic approach to health by combining nutrition and medicinal properties. The alignment of Ayurvedic herbs with modern scientific findings underscores their relevance in contemporary wellness. However, further research, clinical trials, and standardization efforts are essential for their global acceptance and integration into evidence-based medicine. The future of *Ayurvedic* nutraceuticals lies in leveraging scientific advancements while preserving the wisdom of traditional healing.

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