

Herbal Nutraceuticals: A Growing Trend in the Food Industry

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SUMMARY

Herbal nutraceuticals have emerged as a significant trend in the food industry, driven by increasing consumer demand for natural and health-promoting products. The rise of herbal nutraceuticals, which are plant-based supplements and functional foods offers potential health benefits beyond basic nutrition. Herbal nutraceuticals due to their growing popularity, including heightened awareness of holistic health there is a shift towards preventive care and a preference for natural ingredients. It also highlights key developments in the industry, such as advancements in extraction and formulation technologies, which enhance the efficacy and safety of herbal products. Despite their benefits, there are some challenges such as ensuring product standardization, navigating regulatory frameworks and the need for robust scientific evidence to support health claims. The trend towards herbal nutraceuticals reflects a broader movement towards integrative health approaches, emphasizing the need for ongoing research and consumer education to fully realize their potential in modern dietary practices.

INTRODUCTION

The connection of herbal nutraceuticals and the food industry has witnessed a remarkable evolution in recent years. As consumers gradually prioritize health and wellness, food manufacturers are incorporating herbal ingredients into their products to meet the growing demand for natural functional foods. Nutraceuticals, a term coined from the fusion of "nutrition" and "pharmaceutical," represent a growing sector that bonds the gap between food and medicine. Nutraceuticals refer to substances derived from food sources that offer health benefits beyond the basic nutritional value found in regular foods (Hasler,2002). Nutraceuticals, basically are biologically active compounds discovered in food which include attributes of both nourishment and medication. These naturally occurring bioactive or chemical compounds function not only as nutritional supplements but also show various properties that promote health, cure diseases, or possess preventive capabilities (Hussain,2015 and Dureja,2003). They offer numerous health benefits beyond the fundamental nutritional contributions. These bioactive compounds can be categorized into two groups according to their sources: those derived from herbal origins, and those found in dietary supplements.

Herbal bioactive ingredients	Dietary supplements
Anthraquinones	Carbohydrates
Alkaloids	Proteins
Tannins	Lipids
Carotenoids	Vitamins
Flavonoids	Probiotics
Bitters	Prebiotics
Essential oil	Mushroom

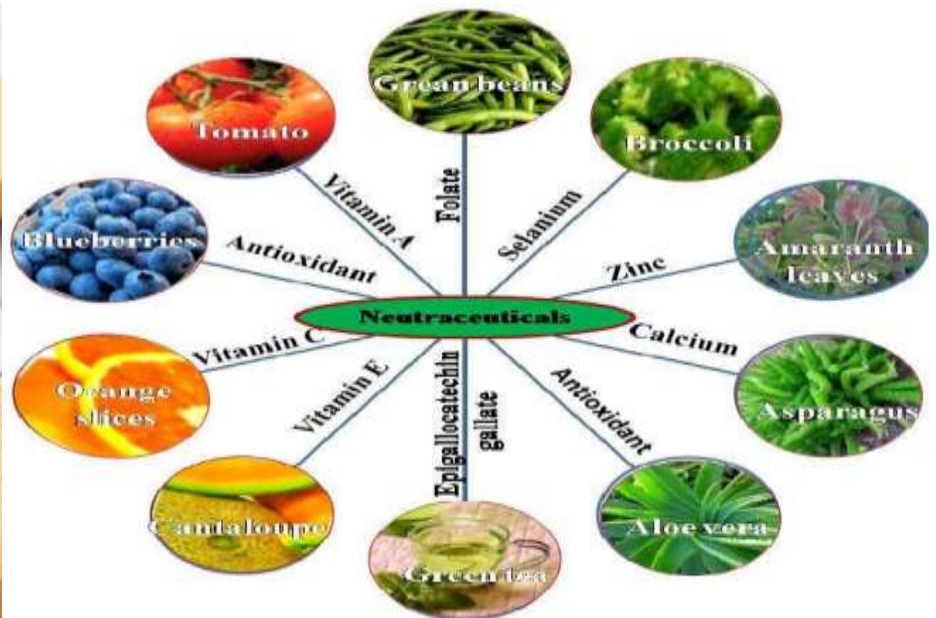
The Emergence of Functional Foods:

Functional foods are defined as those that offers additional health benefits beyond basic nutrition. Apart from this they have gained significant power in the food industry like consumers are seeking foods that not only satisfy hunger but also contribute to their overall well-being. Herbal nutraceuticals with their rich array of bioactive compounds, they are well-suited to meet this demand and contributing natural solutions for health-conscious consumers (Singh,2012).

Incorporating Herbal Ingredients:

Food manufacturers are increasingly incorporating herbal ingredients into their products in order to enhance their nutritional profile and appeal to health-conscious consumers. For example, green tea extract that is rich in antioxidants such as catechins, is commonly added to beverages, snacks, and supplements to capitalize on its claimed health benefits, including antioxidant and metabolism-boosting properties.

Similarly, herbs like turmeric, ginger, and cinnamon are finding their way into a variety of food products, including teas, functional beverages, snacks, and even baked goods. These ingredients not only add flavor and aroma but also contribute to the functional properties of the food which includes their bioactive compounds with potential health-promoting effects(Ho,2015).



Common herbs used as nutraceuticals:(Chauhan *et al.*, 2013)

Common name	Biological name	Constituent	Health benefits
Garlic	Dried bulbs of <i>Allium sativum</i> (Liliaceae).	Alliin and allicin	Anti-inflammatory, antibacterial, antigout, nerve tonic
Maiden hair tree	Leaves of <i>Ginkgo biloba</i> (Ginkgoaceae).	Ginkgolide and bilobalide	PAF antagonist, memory enhancer, antioxidant
Ginger	Rhizomes of <i>Zingiber officinale</i> (Zingiberaceae.)	Zingiberene and gingerols	Stimulant, chronic bronchitis, hyperglycemia and throat ache
Echinacea	Dried herb of <i>Echinacea purpurea</i> (Asteraceae)	Alkylamide and echinacoside	Anti-inflammatory, immunomodulator, antiviral
Ginseng	Dried root of <i>Panax ginseng</i> (Araliaceae)	Ginsenosides and Panaxosides	Stimulating immune and nervous system and adaptogenic properties
Liquorice	Dried root of <i>Glycyrrhiza glabra</i> (leguminosae)	Glycyrrhizin and liquiritin	Anti-inflammatory and Anti-Allergic, Expectorant
St. John's wort	Dried aerial part of <i>Hypericum perforatum</i> (Hypericaceae)	Hypericin and hyperforin	Antidepressant, against HIV and hepatitis-c virus ¹²
Turmeric	Rhizome of <i>Curcuma Longa</i> (Zingiberaceae)	Curcumin	Anti-inflammatory, antiarthritic, anticancer and antiseptic
Onion	Dried bulb of <i>Allium cepa</i> Linn. (Liliaceae)	Allicin and alliin	Hypoglycemic activity, Antibiotic and anti-atherosclerosis
Valeriana	Dried root of <i>Valeriana officinalis</i> Linn. (Valerianaceae)	Valerenic acid and velerate	Tranquillizer, migraine and menstrual pain, intestinal cramps, bronchial spasm.
Aloe	Dried juice of leaves <i>Aloe barbadensis</i> Mill. (Liliaceae)	Aloins and aloesin	Dilates capillaries, anti-inflammatory, emollient, wound healing properties
Goldenseal	Dried root of <i>Hydrastis Canadensis</i> . (Ranunculaceae)	Hydrastine and berberine	Antimicrobial, astringent, antihemorrhagic, treatment of mucosal inflammation
Senna	Dried leaves of <i>Cassia angustifolia</i> (Leguminosae)	Sennosides	Purgative,
Asafoetida	Oleo gum resin of <i>Ferula asafoetida</i> L. (Umbelliferae)	Ferulic acid and umbellic acid	Stimulant, carminative, expectorant
Bael	Unripe fruits of <i>Aegle marmelos</i> Corr. (Rutaceae)	Marmelosin	Digestive, appetizer, treatment of diarrhea and dysentery
Brahmi	Herbs of <i>Centella asiatica</i> (Umbelliferae)	Asiaticoside and medecassoside	Nervine tonic, spasmolytic, anti-anxiety

Consumer Perception and Market Trends:

The incorporation of herbal nutraceuticals into food products aligns with shifting consumer preferences towards natural and functional ingredients. Surveys indicate that consumers' observation regarding foods that is enriched with herbal ingredients considered as healthier and more desirable. This perception is driving the market for functional foods and herbal supplements, with an increasing number of products positioned to address specific health concerns such as immunity, digestion, and stress management (Srivastava, 2010). Moreover, the rise of clean label and transparency in food labelling has further fuelled the demand for herbal nutraceuticals. Consumers are inspecting ingredient lists, seeking recognizable and natural ingredients with obvious health benefits. As a result, food manufacturers are reformulating their products to replace synthetic additives with herbal extracts and other natural ingredients, exploiting on the perceived health associated with these botanicals.

CONCLUSION:

Herbal nutraceuticals are increasingly becoming important to the food industry, shaping product innovation and consumer preferences. By connecting the health-promoting properties of medicinal plants, food manufacturers are creating a new generation of functional foods that offer both nutritional value and wellness benefits. As the demand for natural, functional ingredients continues to rise, herbal nutraceuticals are poised to play a prominent role in shaping the future of the food industry.

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