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Nutraceutical Properties of Coriander: A Review of Health Benefits and Indian Prospects

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Coriander (*Coriandrum sativum*), commonly referred to as dhaniya in India, is one of the most extensively used herbs in Indian households. Traditionally cherished for its culinary applications, coriander has now emerged as a promising nutraceutical. Nutraceuticals, which are food components offering medical or health benefits, are gaining immense attention across India due to rising awareness of natural wellness approaches. Coriander possesses a rich phytochemical profile, including essential oils, vitamins, minerals, and antioxidants, all of which contribute to its medicinal value. This article explores the nutraceutical potential of coriander in the Indian context, emphasizing its nutritional profile, therapeutic applications, and future opportunities in the health and wellness sector.

India has a rich legacy of using herbs and spices for both culinary and therapeutic purposes. Among

these, coriander (*Coriandrum sativum*), an annual herb from the Apiaceae family, has been an integral part of Indian kitchens and traditional healing systems such as Ayurveda. Native to the Mediterranean and Western



Asian regions, coriander is cultivated widely in India for its seeds and fresh leaves. The recent boom in the global nutraceutical market has revived interest in ancient herbs, especially those with proven medicinal value. With the

Indian nutraceutical market projected to reach USD 18 billion by 2025, there is an urgent need to explore native, easily accessible plants like coriander for functional food development. This article delves deep into coriander's journey from a spice to a scientifically validated nutraceutical. The term "nutraceutical" is derived from "nutrition" and "pharmaceutical." It was coined in 1989 by Dr. Stephen DeFelice and refers to food-derived substances that provide health benefits beyond basic nutrition. These products include dietary

supplements, functional foods, and fortified products aimed at preventing or treating diseases. In India, where traditional medicine and natural healing have long-standing roots, nutraceuticals offer a bridge between modern science and age-old wisdom.

Botanical Overview and Cultivation in India

Coriander is an aromatic herb whose all parts are edible—seeds, leaves, and roots. It thrives in tropical to subtropical climates and is grown extensively in Rajasthan, Madhya Pradesh, Uttar Pradesh, Gujarat, and Andhra Pradesh. India ranks among the top producers and exporters of coriander seeds globally.

The seeds are oval, ridged, and yellow-brown, used whole or powdered in cooking. The fresh green leaves, known as cilantro, are widely used for garnishing and flavoring. Both parts contain bioactive compounds, making them significant from a nutraceutical standpoint. Nutraceuticals are particularly relevant today, with rising lifestyle-related diseases such as obesity, diabetes, cardiovascular issues, and mental health disorders.

Nutritional Profile of Coriander

Essential oils: Linalool, borneol, cineole, and geraniol contribute to aroma and therapeutic activity.

Vitamins: Rich in vitamin A, C, and K, coriander supports immune health, vision, and blood clotting.

Minerals: It provides calcium, magnesium, potassium, and iron essential for metabolic and bone health.

Bioactive Compounds: These include flavonoids (quercetin, rutin), phenolic acids, tannins, alkaloids, and saponins—all known for their antioxidant, anti-inflammatory, and antimicrobial activities.

Health Benefits and Nutraceutical Applications

Antioxidant Properties: Free radicals are unstable molecules that contribute to aging and chronic diseases. Coriander's flavonoids and polyphenols help neutralize these radicals, reducing oxidative stress. Studies have shown that coriander extract increases antioxidant enzymes like glutathione and superoxide dismutase, which are vital for cellular defense.

Digestive Support: Coriander has been used for centuries to treat indigestion, nausea, and flatulence. Its essential oils stimulate digestive enzymes, reduce spasms in the intestines, and relieve bloating. Ayurvedic texts classify coriander as a “pachak” (digestive), commonly used in home remedies such as coriander seed water for stomach ailments.

Anti-Diabetic Effects: Scientific studies suggest that coriander seeds can help regulate blood sugar levels. Linalool and other phytochemicals in coriander enhance insulin secretion, improve glucose uptake by cells, and inhibit enzymes responsible for carbohydrate breakdown. This makes coriander particularly beneficial in managing Type 2 diabetes, which is a growing concern in India.

Cholesterol and Heart Health: Animal studies have demonstrated that coriander seed powder can lower LDL (bad cholesterol) and triglyceride levels while increasing HDL (good cholesterol). This lipid-regulating effect is attributed to its antioxidant and hepatoprotective action, making coriander supportive of cardiovascular health.

Antimicrobial Action: Coriander oil exhibits significant antibacterial and antifungal properties. It can inhibit common foodborne pathogens like *E. coli*, *Salmonella*, and *Staphylococcus aureus*. This makes

coriander valuable in food preservation, natural cosmetics, and herbal formulations aimed at skin infections.

Liver Detoxification: The liver is the body's detox hub, and coriander assists in cleansing it. Its active compounds boost bile secretion, improve liver enzyme levels, and help flush out heavy metals such as mercury and lead from the body. Regular consumption of coriander leaves in salads or juices is a simple way to support liver health.

Neuroprotective Effects: Emerging research shows that coriander extracts may have protective effects on the brain. The antioxidants in coriander can help prevent neurodegenerative diseases like Alzheimer's by reducing amyloid plaque formation and protecting neurons from oxidative damage.

Current Market and Consumer Trends in India

The rise in organic farming, clean-label products, and Ayurvedic supplements has made coriander a focus for both domestic and international nutraceutical companies. Brands are incorporating coriander into teas, digestive tablets, detox waters, and herbal powders. Urban consumers, especially in metro cities, are more health-conscious and willing to explore

herbal alternatives. The Indian government has also launched initiatives like the Ayushman Bharat scheme and the Ministry of AYUSH to promote traditional healing systems. These programs are providing a boost to herbs like coriander by funding clinical trials, research, and product development.

Conclusion

Coriander is more than just a flavorful herb it is a powerhouse of nutrients and medicinal compounds that make it an ideal nutraceutical. Its traditional use in Indian households, combined with modern scientific validation, positions coriander as a bridge between culture and innovation. With increasing health consciousness, support from the nutraceutical industry, and government encouragement for natural remedies, coriander's transformation from a spice to a health supplement is not only timely but necessary. Harnessing its full potential requires multidisciplinary research, awareness campaigns, and standardization of production. As India strides forward in health and wellness, coriander could well be one of the leading symbols of our return to roots through science-backed nutrition.

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