

Black Turmeric: A High Value Medicinal Herb

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Introduction

Since ancient times, turmeric (*Curcuma*) has been valued as a source of a condiment, a color additive and rich in medicinal properties. In earlier times, it got attention due to its attractive color that is acquired in many religious and socio-cultural values in South Asian countries. Turmeric is also known as “Indian saffron” due to its medicinal properties in “Indian Ayurvedic System”.



Its importance was documented in Sanskrit, the ancient Indian language between 1700 and 800 B.C. during the Vedic age. In Sanskrit language, it is termed as “Haridara,” referring that Lord Vishnu used it on his body. The great ancient Indian physicians Charaka and Sushruta, classified numerous uses of this medicinal plant. Turmeric is also used in the form of “Oushadhi” by ancient Indians for poison of snake and scorpion bite, stomach-ache and treating skin wounds *etc.* Moreover, it was also used in dyeing clothes and yarns, and in religious rituals. The Greek physician Dioscorides (40–90 A.D.) also mention turmeric in pharmacological script. The Indus Valley Civilization dating back to 3300 B.C. incorporated turmeric in the category of spices, in western India. Turmeric species have been cultivated all over the tropics, some species have also been reported from China, Australia and the South Pacific. Up to 110 species of turmeric have been reported from the tropical Asia with greatest diversity from India, Myanmar and Thailand. About 40 species are indigenous to India and black turmeric (*Curcuma caesia*) is one of the most economically important species along with *C. aromatica*, *C. amada*, *C. aeruginosa*, *C. longa*, and *C. zanthorrhiza*.

Constituents:

It contains alkaloids, amino acids, anthraquinones, carbohydrates, cardiac glycosides, flavones, flavonoids, glycosides, proteins, reducing sugars, terpenes, tannins and steroids *etc.*

Medicinal properties:

- The rhizomes of this herb are often used for pneumonia, cough, cold and to cure fever in children and asthma in adults.
- This medicinal herb is traditionally used for the treatment of hemorrhoids, leprosy, wound healing, vomiting, anthelmintic, aphrodisiac, gonorrheal discharges and inflammation.
- The rhizomes also act against epilepsy, cancer, HIV or AIDS and leukoderma diseases.
- Fresh rhizomes are crushed and applied as a paste on forehead for relief from migraine.
- Its extract can be used as a smooth muscle relaxant, anti-tumour and anti-oxidant. It is also used as a tonic for the brain and the heart.
- *Curcuma caesia* provides relief from stomach problems including indigestion and the suitable functioning of the liver and kidneys.
- Intake of small amount of rhizome paste is used to expel gases from the stomach and used as a remedy for menstrual disorders.
- The specific aroma of the rhizome is mainly due to the occurrence of essential oil rich in camphor and starch.
- Rhizomes are often used for treatment of leucoderma, piles, bronchitis, tumors, tuberculous glands of the neck, enlargement of the spleen and epileptic disorders.
- The paste of fresh rhizome of *Curcuma caesia* is applied for curing the snake and scorpion bite.
- In Assam region, fresh rhizome juice mixed with mustard oil is given to cattles in dysentery.
- The rhizome of the plant is aromatic and contains essential oil so also used in various cosmetic products.

Anti-Inflammatory activity

Proteins isolated from aqueous extraction of rhizome *Curcuma caesia* is rich in significant antioxidant and anti-inflammatory activity, which is heat stable.

Analgesic Activity

Different extracts from *C. caesia* rhizomes possess analgesic and antipyretic activity.

Anti-bacterial Activity

Oleoresin content isolated from *Curcuma* sp. have antioxidant and antibacterial activities.

Therapeutic uses

Black turmeric is a vital component in overall healthcare mainly in the rural areas. It is used by many tribal communities world widely from centuries as a spice, medicine and in spiritual practices. With the development in technology, this species is attaining importance as a potential source of income also. The rhizomes of turmeric are used as stimulants, anti-diarrheal, diuretic, anti-emetic, wound cleanser, wound healer and in curing various skin disorders in India and in another country also.

Bioactive compounds

Black turmeric is familiar as a medicinal herb and containing mixtures of different bioactive components that may act individually, additionally, or in synergistically to improve overall health of human being. This herb contains a good percentage of curcumin, which holds numerous curative properties. This turmeric is rich in various phytochemicals and antioxidants like curcuminoids, oil content, flavonoids, phenolic compounds, amino acids, protein and high alkaloids, which are responsible for the antimicrobial, antitumor, anxiolytic, anti-inflammatory, antiulcer and other antioxidant activities. The chemical structure of phenolic compounds having hydroxyl group attached to benzene ring offers the capability to act as a free radical scavenger and singlet oxygen molecule in biological systems. Black turmeric, used in traditional medicine, seems to be a promising source of vigorous therapeutic agents and also play an important role in increasing its pharmaceutical and industrial significance. Being a species of the genus *Curcuma*, black turmeric is known for its antimicrobial properties since centuries.