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Popular Article

# Black turmeric (*Curcuma caesia* Roxb.) has potential herbal medicinal value for the human society

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## Abstract

Black turmeric (*Curcuma caesia* Roxb) is a very important medicinal plant belonging to the zingiberaceae family. The plant is in high demand in central India, although as a result of indiscriminate extraction without ensuring its production and protection, it was recently classified as an endangered species (Sharma et al., 2017). The rhizomes of *Curcuma caesia* have a significant commercial relevance because of its purported therapeutic Properties in high demand are collected from the wild, but due to the species' status, they are conserved in the Institute's medicinal germplasm garden and investigated for medicinal properties in order to determine whether cultivated plants are medicinally potent or not. Despite its use in ancient medicine, black turmeric has recently gained appeal as people migrate from synthetic to ayurvedic medicine. Black turmeric rhizome is claimed to have a bitter flavour, in addition to antifungal and antibacterial properties. The rhizome has medicinal properties and is said to cure piles, asthma, and tumours. The Central Forest Department of India has designated this undisturbed plant as endangered.

**Taxonomical Hierarchy:** Kingdom: Plantae, Phylum: Tracheophyta Sinnott,



Class: Magnoliopsida, Order: Zingiberales, Family: Zingiberaceae, Genus: *Curcuma*, Species: *C. caesia* Roxb.

**Vernacular name:** Hindi: Kali Haldi  
Odia: Kala Haldi

Figure:1 Morphological structure of *C. caesia* Roxb

## Morphology of the *C. caesia* Roxb.:

Plant parts	Morphology of <i>C. caesia</i>
<b>Rhizome</b>	The herb is 1.0-1.5m tall, oval, camphoraceous delicious, with various form and size, and grows on dark brown, blueish black rhizomes with a variety of odours.
<b>Root</b>	The propagation of black turmeric does not develop its rhizome, which is covered with yellow brown, fibrous, and tapering adventitious roots.
<b>Leaf</b>	The leaves are approximately 25-50 cm long, 15 cm wide, and oval in form, with reddish edges. The variation in leaves is parallel, which is typical of monocots.

<b>Flower</b>	Pale yellow in colour, reddish at the outer border and shorter than their bracts. Flowers generally bloom in the month of June or July.
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### Nutrient Values of Turmeric:

D Bhowmik et al. (2008) found that turmeric contains 354 calories and 1481kj of energy per 100g.

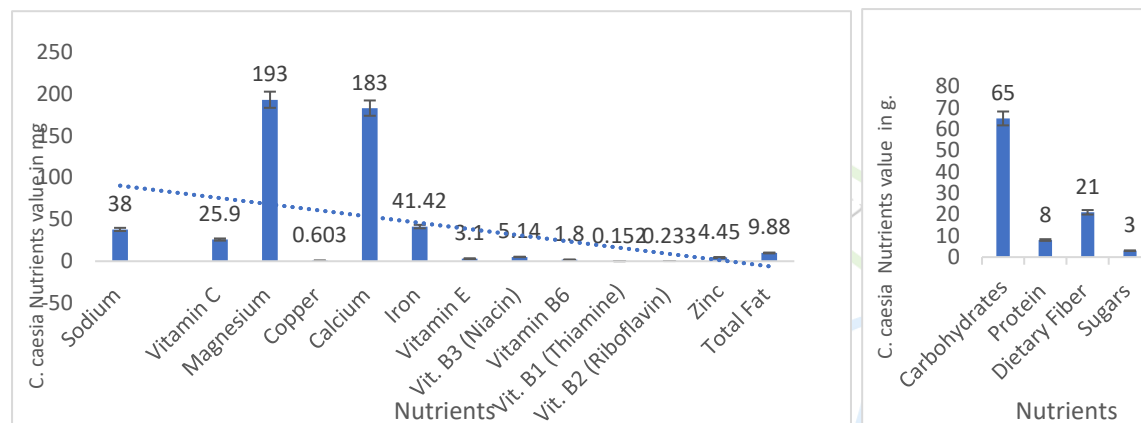


Figure:2 Curcuma caesia Roxb. having content Nutrients value (mg/g) per 100g.

### Main Constituents:

The natural ingredients of black turmeric (Curcuma caesia Roxb) are responsible for its therapeutic properties. Black turmeric included alkaloids, terpenes, amino acids, carbohydrates, tannins, flavones, flavonoids, proteins, steroids, reducing sugars, proteins, anthraquinones, glycosides, and cardiac glycosides (Mukunthan et al., 2014; Shahu et al., 2016). It has been observed that the dried rhizome of black turmeric contains around 1.6% essential oils, and his essential oil provides a variety of medicinal benefits.

**Pharmacology Studies:** Major activities include 1. Anti-Cancer Activity 2. Antifungal activity 3. Antibacterial activity 4. Antibacterial activity 5. Anti-Ulcer Activity 6. Neuropharmacological activity.

### Antioxidant activity:

Curcuma caesia antioxidant activity was assessed using both qualitative and

quantitative methods (Figure 3). In a quantitative experiment, acetone and methanol extracts had strong antioxidant activity (>90%) at the maximum dose, although overall activity was lower than that of ascorbic acid, despite the fact that ascorbic acid is a pure molecule with

antioxidant potential. Curcuma species are well-known indigenous medicines used to treat a wide range of diseases and metabolic abnormalities. They are mostly fragrant and therapeutic in character. They are utilised as spices, colours, food, fragrances, cosmetics, and tonics (Birkumar and Sundriyal 2003).

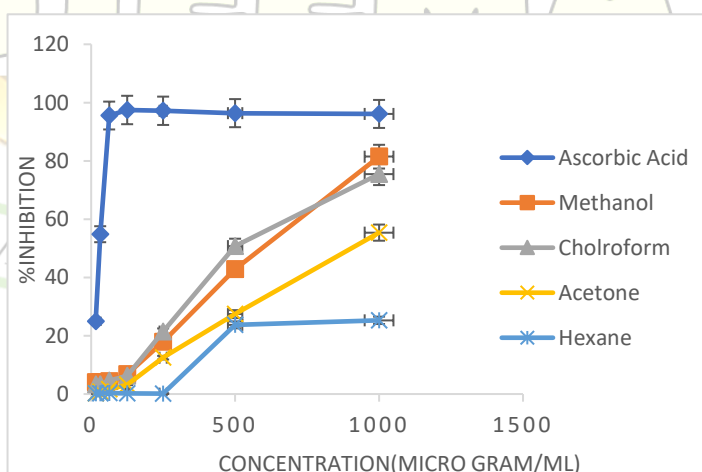


Figure3: DPPH radical scavenging assay of solvent extracts of Curcuma caesia Roxb.

### Medicinal uses:



From many years awareness of turmeric and its use as medicine is continuously increasing. The Black turmeric is a powerful anti-inflammatory, antioxidant, antiseptic, antispasmodic, appetizer, astringent, cardiovascular, carminative, cholagogue, digestive, diuretic, stimulant, and vulnerary. Their rhizome of black turmeric is mostly used for different activities. which is very much helpful in curing lot of disorders (Sharma et al.,2026).

**Table 1: Medicinal used of Curcuma caesia Roxb.**

Disease	Part used	Mode Of Administration
wounds and cuts	Rhizome	To treat wounds and cuts and has a quick healing effect.
Asthma, cough cold	Powder	Boil 1 cup of milk with 1 tsp of turmeric powder. Drink warm.
Digestive Disorders	Powder	Take ½ tsp of black turmeric powder or juice in water, 3 times per day
Osteoarthritis	Rhizome	Make a paste by mixing 1 tsp turmeric and 2 tsp ginger with water. Spread the mixture on a cloth and apply to the afflicted region, then bandage. Before going to bed, mix 1 tsp turmeric with 1 cup warm milk.
Ears, Eyes, Nose and Mouth Disorder	Rhizome	Black turmeric dust, with alum 1:20, is blown into the ear to treat chronic otorrhea. Mix a pinch of black Turmeric with organic ghee and apply it to the mucus lining of nose to stop the sniffles. It also stops nosebleeds, helps to clear the sinuses, restore a more acute sense of smell, and helps to purify the mind and brain.
Dental problems	Rhizome	Mix 1 tsp of black turmeric with ½ tsp of salt. Add mustard oil to make a paste. Rub the teeth and gums with this paste twice daily. Powder is used to

		cure toothache.
Diabetes	Powder	½–1 tsp of turmeric should be taken 3 times a day
Other uses	Rhizome	Turmeric, a yellow colouring agent in cooking, is a significant herb in Hindu rituals and cosmetics. Burning black turmeric repels insects and aids in coughs, asthma, and nasal congestion.

### Conclusion:

Black turmeric (*Curcuma caesia* Roxb) is a traditional Indian condiment and Ayurvedic medicine used to improve appetite, treat gallstones, dyspepsia, asthma, colds, and skin lesions. It is also used for menstrual problems, pain, epilepsy, respiratory tract infections, bleeding, diarrhoea, jaundice, and rheumatic disorders. It has gained reputation as an anti-inflammatory agent, treatment for hypercholesterolemia, antioxidant, cancer preventative, and preventing cardiovascular and degenerative changes of aging. However, clinical benefits for peptic ulcer disease, dyspepsia, arthritis, inflammation, and other uses have not been demonstrated in controlled clinical trials.

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