

Kasthuri Manjal – An Essential Herbal Plant

Macherla Chandana¹ and Kanukuntla Vanitha²

¹Teaching Associate, Department of Plantation Spices Medicinal and Aromatic Crops, SKLTSHU, Mulugu, Siddipet

²Ph.D. Research Scholar, Department of Vegetable Science, SKLTSHU, Mulugu, Siddipet

SUMMARY

Wild Turmeric (*Curcuma aromatica* Salisb.) is extensively used as an aromatic medicinal cosmetic in India. The plant has been in traditional use and in Ayurvedic literature, it is mentioned as a remedy for various skin, cardiovascular and respiratory diseases. For the last few decades, research has been done to establish the pharmacological potential of wild Turmeric and its extracts. Some include anti-inflammatory, wound healing, anti-melanogenic, antioxidant and free radical scavenging activity, anti-tumour, anti-cancer, anti-repellent, antitussive, anti-platelet, and antinephrotoxic activity.

INTRODUCTION

Curcuma aromatica Salisb. (*C. aromatica*) is known as “vanaharidra” in Ayurveda, wild turmeric in English, “jangli haldi” in Hindi, and “Yu Jin” in Chinese. It is commonly used as a coloring and flavouring agent and in many traditional medicines in Southeast Asian countries. Therapeutically, it possesses a strong antimicrobial effect and has been used since ancient times as a remedy against various microbial infections. The rhizomes of *C. aromatica* are used in traditional medicine to eliminate blood stasis, delay ageing, relieve pain, and protect against liver diseases. Also, the rhizomes of *C. aromatica* are used internally as a tonic and carminative, while being topically applied for various skin ailments, sprains, and bruises, as an antidote for snake venom, and also to enhance complexion. Villagers in northeastern India use aqueous extracts and paste (with milk) of *C. aromatica* rhizomes and leaves to treat indigestion, rheumatism, wound healing, and dysentery and prevent helminth infections.

In Thailand, the rhizome and roots of *C. aromatica* are often used in cosmetics and spas for skincare. The traditional uses of *C. aromatica* rhizome extract as medicine are now being explored in modern scientific research for the possible development of contemporary medicine including but not limited to antimicrobial, antioxidant, anti-inflammatory, anticancer, antidiabetic, antiangiogenic, antitussive, antiobesity, antiacne, antiallergic, and wound healing. The rhizome of *C. aromatica* has been reported to be rich in medically essential phytochemicals, such as alkaloids, flavonoids, curcuminoids, tannins, and terpenoids. As this plant has considerable therapeutic potential, extracting and characterising the crucial bioactive compounds with vital medicinal properties may provide opportunities for pharmaceutical applications. Therefore, this review has compiled and critically analyzed the reported studies on the phytochemical and pharmacological properties of *C. aromatica* rhizomes, leaves, and its essential oil.

Scientific name: - *Curcuma aromatica*

Family: - Zingiberaceae

Origin and distribution:-

This species is found in the South Asian region, predominantly in the eastern Himalayas and in the warm forests of the Western Ghats (India).

Common names:-

English: wild turmeric, aromatic turmeric

Hindi- Jangli haldi

Telugu: kasthuri pasupa

Botanical description:-

Leaves 38-60 by 10-20 cm, oblong-elliptic or oblong-lanceolate, caudate-acuminate, green often variegated above, pubescent beneath, base deltoid; petioles as long as or longer than the blade. The flowering stem appears with or before the leafing stem, as thick as the forefinger, sheathed. Flowers fragrant, shorter than the bracts, in spikes 15-30 cm long; flowering bracts 3.8-5.0 cm long, corolla-tube 2.5 cm long, the upper half funnel-shaped; lobes pale rose-coloured. Lip yellow. Rootstock was large, of palmately branched, sessile annulate

biennial rhizome. The rhizome is light yellow (internally orange-red) in colour and possesses a camphoraceous odour.



Variety:-

The cultivar **HIMHALDI** of *Curcuma aromatica* is developed by Institute of Himalayan Bioresource Technology (CSIR) under the aegis of the National Bioresource Development Board, New Delhi

Climate:-

Is suitable for cultivation in mid-hills under sub-humid and sub-temperate climatic conditions. It can be grown in locations situated around and above 1300 m altitude. The location may be sunny or partially under shade.

Soil:-

Prefers clayey loam soils rich in organic matter (humus) content with adequate moisture. The pH of the soil may be slightly acidic to neutral (6-7).

Flowering: -

May-June.

Field preparation:-

The soil of the field should be well pulverised before planting. A basal dose of 15 t of well-rotten farmyard manure (FYM) should be thoroughly mixed in the soil during field preparation.

Planting:-

Crops can be raised by planting rhizomes. The proper time for planting is December and January. Rhizomes of 5 cm x 3 cm dimension with 2-3 eyes (vegetative buds) are suitable for planting. Larger rhizomes should be cut to ideal size before planting. About 12 q rhizomes are required for planting a 1 ha area.

Plant spacing:-

The planting should be done in lines to facilitate inter-cultural operations. The spacing should be 50 cm between two rows and 50 cm between plants.

Manuring:-

The crop requires about 22.5 t/ha of organic manure for optimum growth. In the year of planting, as 15 t/ha of FYM has been given as a basal dose, the remaining 7.5 t/ha of FYM should be placed about 12-15 cm deep along the rows when the plants have sprouted during May-June. In the second year, the full dose of FYM (22.5 t/ha) should be placed at 12-15 cm soil depth at 15 cm distance along the rows at about 10 days after crop sprouting. The manure should be carefully mixed in the soil with care to prevent any damage to rhizomes.

Water management:-

Under recommended agro-climatic conditions, the crop does not require irrigation. However, in case of a field where the soil is not moist at the time of planting, light watering of the field soon after planting is recommended. In locations receiving high rainfall, care should be taken to ensure sub-surface drainage, as the crop does not endure water logging.

Interculture:-

About 45 days after sprouting, shallow hand hoeing should be done to remove the weeds from the crop field. If the weed infestation is recurrent, another weeding may be done about 20-25 days after the first weeding, depending upon the level of weed infestation.

Harvesting:-

The crop should be harvested only after 2 years of growth in the field. Under mid-hill conditions, the crop plants normally become dormant during November-December. The crop is harvested during the dormancy period in winter. When the foliage (leaves and stalks) turns yellow, the crop is ready for harvest. At this stage, the dried foliage should be cut at ground level and the rhizome should be allowed to remain under the soil for 20-25 days to attain full ripening. Finally, the digging of the rhizomes should be done manually.

Yield:-

The average yield of fresh rhizomes is 60 t/ha at 2 years after planting. After harvesting, the rhizomes should be stored in a cool and dark place until processing.

Oil production:-

First-order rhizomes contain 2.4 % essential oil on a dry weight basis, while second-order rhizomes contain 1.2 % oil. About 200 kg of hydro-distilled oil (on dry weight basis) can be produced from 1 ha of the crop. The oil extracted from its rhizome is a blue-black dark liquid with camphorous, woody, amber, and spicy characteristic odour. The oil is in demand by the pharmaceutical and allied industries. In this camphor is the major compound followed by 1, 8 cineole and isobornyl alcohol.

REFERENCES

- Ahmed S, Ansari SH, Ali M, Bhatt D, Ansari F. 2008. Phytochemical and biological investigations on *Curcuma aromatica*: a review. *Pharmacogn Rev.* 2:151–6.
- Kanase V, Khan F. 2018. An overview of the medicinal value of *Curcuma species*. *Asian J Pharm Clin Res.* 11:40–5.
- Nura Muhammad Umar , Thaigarajan Parumasivam, Nafiu Aminu , Seok-Ming Toh.2020. Phytochemical and pharmacological properties of *Curcuma aromatica* Salisb (wild turmeric). *Journal of Applied Pharmaceutical Science.* 10(10): 180-194.