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## A study on a highly medicinal plant *Murraya koenigii*: Rutaceae

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### Abstract

*Murraya koenigii* (Rutaceae) commonly known as “Curry leaves” and “Meetha neem”. It is an important leafy vegetable. Its leaves are widely used in Indian cookery for flavouring foodstuffs. The leaves are used traditionally as spice. The aim of the present study is to provide information about classification, origin, morphological characters, traditional use of *Murraya koenigii* by tribal community of Jhunjhunu District of Rajasthan in many cures of diseases.

**Keywords:** Medicinal plant, traditionally, antibacterial, antioxidant

### Introduction

*Murraya koenigii*, commonly known as curry leaf or kari patta in Indian dialects, belonging to Family Rutaceae which represent more than 150 genera and 1600 species <sup>[1]</sup>. It is widely used as a spice and condiment in India and other tropical countries. The leaves have a slightly pungent, bitter and feebly acidic taste, and they retain their flavour and other qualities even after drying. A scrutiny of literature reveals some notable pharmacological activities of the plant such as activity on heart, Anti diabetic and cholesterol reducing property, antimicrobial activity, antiulcer activity, antioxidative property, cytotoxic activity, anti diarrhea activity, phagocytic activity.

Various parts of *Murraya koenigii* have been used in traditional or folk medicine for the treatment of rheumatism, traumatic injury and snake bite <sup>[2]</sup>. The *Murraya* species has richest source of carbazole alkaloids. Further, Carbazole alkaloids has been reported for their various pharmacological activities such as anticonvulsant, antitumor, anti-inflammatory, diuretic, anti-viral and activities <sup>[3]</sup>. The leaves of the plants are full of antioxidants, namely, tocopherol,  $\beta$ -carotene, and lutein, and possess antioxidative and anti-lipid peroxidative activities, providing protection against oxidative stress <sup>[4]</sup>.

### Origins

Curry leaf trees are naturalised in forests and waste land throughout the Indian subcontinent except in the higher parts of the Himalayas. From the Ravi River in Pakistan its distribution extends eastwards towards Assam in India and Chittagong in Bangladesh, and southwards to Tamil Nadu in India. The plants were spread to Malaysia, South Africa and Reunion Island with South Asian immigrants <sup>[5]</sup>.

### Taxonomy

Kingdom	- Plantae
Sub-kingdom	- Tracheobionta
Superdivision	- Spermatophyta
Division	- Magnoliophyta
Class	- Magnoliopsida
Subclass	- Rosidae
Order	- Sapindales
Family	- Rutaceae
Genus	- <i>Murraya</i>
Species	- <i>Murraya koenigii</i>

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**Vernacular Name**

English	- Curry leaves
Hindi	- Karipatta, Mitha neem
Sanskrit	- Girinimba
Gujarathi	- Mitho limado
Tamil	- Kariveppilai

**Study Site**

Jhunjhunu district is located in the extreme north eastern part of Rajasthan State and lies between 27°38' and 28°31' north latitudes and 75°02' and 76°06' east longitudes. It covers 5928 sq.km. of geographical area. The climate of the district can be classified as semi-arid. It is characterized by very hot summers and very cold winters with poor rainfall during south-west monsoon period.

**Methodology**

An extensive field work was carried out during 2017 to 2018 to study encompassing on the documentation plant resources and traditional knowledge pertaining to these resources from Tribal community region of Jhunjhunu District. Plant samples

were collected and their traditional uses by the ethnic people of the area were recorded. Many remote areas were visited to interact the people and gathered information related to local name, traditionally used in cure of various diseases and sacred significance of this valuable plants. In this way more than 100 persons were contacted for present study.

**Result and Discussion**

The plant has been use since the ancient times in traditional medicine systems in India. The useful parts of the plant included leaves, root, bark, and fruits. Fresh leaves, dried leaf powder, and essential oil are widely used for flavouring soups, curries, traditional curry powder blends and use in other food preparations. The branches of *Murraya koenigii* are used to strengthen gums, also used as datum. It has also been used as an antiperiodic and many a time the powdered dry leaf, mixed with honey and juice of betel nut, is recommended in the Ayurvedic system of medicine. The roots of *M. koenigii* are also used as stimulant. The bark is used in the treatment of snakebite. Curry leaves are used in dysentery and vomiting.

**Table 1:** *Murraya koenigii* plant used in various purpose by tribal community of Jhunjhunu District, Rajasthan.

S. No	Plant part	Uses
1.	Leaves, root, bark, and fruits	Used for flavouring soups
2.	Fresh leaves	Used in curries dish for flavouring
3.	Branches	Used as datun for clean teeth
4.	Powdered of dry leaf	Used as antiperiodic
5.	Roots	Used as stimulant
6.	Bark	Used in snake bite
7.	Leaves	Used in dysentery, vomiting

**Morphological Characters**

The *M. koenigii* is having grey color bark, longitudinal striations on it and beneath it white bark is present. Leaves are bipinnately compound, 15-30 cm long each bearing 11-25 leaflets alternate on rachis, 2.5-3.5 cm long ovate lanceolate with an oblique base. Margins irregularly crenate, petioles 2-3 mm long, flowers are bisexual, white, funnel shaped sweetly scented, stalked, complete, ebracteate, regular with average

diameter of fully opened flower being in average 1.12 cm inflorescence, terminal cymes each bearing 60-90 flowers [6]. Fruits, round to oblong, 1.4 to 1.6 cm long, 1 to 1.2 cm in diameter; weight, 880 mg; volume, 895 microlitres, fully ripe fruits, black with a very shining surface, the number of fruits per cluster varying from 32 to 80. Seed, one in each fruit, 11 mm long, 8 mm in diameter, colour spinach green [7].



**Fig 1:** *Murraya koenigii* (Meetha Neem or Curry patta) [A] Whole plant [B] Inflorescence [C] Single flower [D] Fruits

## Conclusion

Medicinal plants or their bioactive compounds have been utilized by developing countries for primary and traditional healthcare system since very long period of time. Herbal drugs are extensively used to treat various diseases due to their effectiveness, minimal side effects and relatively low cost. An ethnobotanical approach represents an effective method which may improve the outcomes of phytochemical research. The vast number of edible plants used as foods and medicines by the Indian population creates opportunities for the discovery of novel physiologically active compounds. Curry leaves (*Murraya koenigii*) is a leafy vegetable that belongs to the Rutaceae family. The chemical composition of the fresh leaves of *Murraya koenigii* consists of volatile oil. Carbazole alkaloids and triterpene have been isolated from stem bark and roots of *Murraya koenigii*. The plant is used in various pharmacological activities such as activity on antioxidative property, Anti diabetic and cholesterol reducing property, antimicrobial activity, antiulcer activity, cytotoxic activity, anti diarrhea activity, phagocytic activity.

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