

An Updated review on *Murraya koenigii* (Curry Leaves) : A Miraculous Plant with Several Speciality

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Abstract: *Murraya koenigii* one of the most common used herbs in various dishes as flavouring agent, besides its flavor it posses numerous medicinal properties which makes it unique from other herbs. After large number of literature survey, the paper consists of collection of information related to this herb.

Key Words: Curry leaves, Herbs, Alkaloids, Medicinal Property.

1. INTRODUCTION:

Medicinal plants are the nature's gift to human beings to make disease free healthy life. Plants posses miraculous power which could alleviate pain and cure illness. Plants have been used from the early civilization as a source of medicine of all types of disease.

Inspite of synthetic drug development and production of antibiotics, plants occupy an important place in modern and traditional system of medicine in all over the world.

Modern medicines are primarily from synthetic origin and they may have toxic effect, while plant medicines have less toxicity, and their importance being realized in both developed and developing countries. It is expected that in near future the plant products will play a major role in health care programme of all countries.

Among ancient civilization India has been known to be rich repository of medicinal plants the importance of medicinal plants is well described in the period of Ramayana, where Lord Hanuman, Saved the life of Laxman from the medicinal herb "Sanjeevani Buti"

Neem, Tulsi, Aloe, Tinospora, Amla, Babool are some of common examples of herbs which posses medicinal as well as aesthetic value. Besides all these we can also observe there are several spices herbs which posses bunches of medicinal properties and are helpful in curing numerous diseases. Some reported examples are cardamom, black pepper, cinnamon, fenugreek, ginger, carom seeds, cumin and curry leaves.

Curry leaves are one of the important spices cum medicinal herbs which are used almost in every part of our country with great interest. Distinct aroma with its tasty flavor as well as medicinal importance makes it one of the favorite most herbs in almost every houses of India.

It is widely known as curry leaves due to its closely morphological resemblance with neem. It is also known as meethi neem.

Curry leaf (*Murraya Koenigii*) is found to be native to South Asia, Particularly, India, Sri Lanka and Banladesh (Mustafa and Oktavia n.d). curry leaves are particularly associated with south Indian cuisine, since people of south India uses this herbs almost in every dishes regularly with great interest.

2. CLASSIFICATION :

Kingdom	-	Plants
Sub-Kingdom	-	Tracheobionta
Super division	-	Spermatophyta
Division	-	Mangnoliophyta
Class	-	Mangnoliospsida
Sub-Class	-	Rosidae

Order	-	Sapindales
Family	-	Rutaceae
Genus	-	Murraya
Species	-	M. koenigii
Binomial name	-	Murraya koenigii (L.) Sprengel

3. DESCRIPTION:-

Curry leaf plant grows 4-6m (13-20 Feet) tall, with a trunk up to 40 cm (.16 inches) diameter. The leaves are pinnate, with 11-21 leaflets, each leaflet is 2-4cm long and 1-2 cm broader. Leaves are highly aromatic, flowers are small, white and fragrant. It posses/small black shiny berries or its fruits are edibles but their seeds are poisonous.



Fig. Curry Leaves plant ; images source Google

4. PHYTOCHEMISTRY :

Moisture	-	63.2%
Total Nitrogen	-	1.15%
Fat	-	6.15%
Total Sugars	-	18.92%
Starch	-	14.6%
Crude Fiber	-	6.8%
Ash	-	13.06%
Acid insoluble ash	-	1.35%

CAROTENOIDS :-

Lutein	-	9.744mg
d-tocopherol	-	18349 of
Total carotene	-	21.4mg/100mg
B-carotene	-	1.1mg/100g

The leaves contain high amount of oxalic acids, leaves also contain crystalline glycosides, carbozole alkaloids, It also contains.

Grinimbin,
Iso-Mahanimbin
koenine
koenigine
koenidine
koehimbine (narasimhan et. al. 1975)

Bark mainly contains the carbozole alkaloids such as,

Murrayacine
Murraya Zolidine
Murraya zoline
Mahanimbine,
Grinimbine
koenioline
Xynthyletin (Rastogi et. al. 1984)

The major portion of volatile compounds found in leaves are

- Linalool (0.56%)
- Trans – sabinene hydrate (0-53%)
- Trans – 2 – cyclohexen – 1-0l (0-48%)
- Cis – 2 – Cyclo hexen – 1- 0 l (0-54%)
- Para – Cymen – 8-0 l (10-31%)
- β-Terpinol (2.52%)
- Trans – Piperitol (0-40%)
- Crysantheyl acetate (0-39%)
- Lavandulyl acetate (1.67%)
- Bornyacetate (1.68%)
- α-copaene (0.82%)
- β -Elemene (0.35%)
- α-Humalene (15.24%)
- Napthalene (1.90%)
- Nerolidol (2.64%)
- Cycloheptane (0.13%)
- Spathulenol (1.98%)
- Caryopylene oxide and phytol (10.07%)

5. PHARMACOLOGICAL ACTIVITIES REPORTED :

Sl. No.	Property	Scientists Reported	Description
1	Antiviral	Math et.al (2020)	Due to richness in polyphenols, terpenens saponins its mouth wash can reduce the viral load of SARs-COV2
2	Immunomodulatory potential	Shah et.al (2008)	Curry leaves extract acts as immunomodulatory agents acts by stimulating humoral immunity and phagocytic function.
3	Antifungal	Mishra et.al (2010)	Acetone extract of <i>M koenigii</i> is active against aspergillus niger benzene extract is most active agains alternaria solani and ethanolic extract is active against pencillium notatum.
4	Gastrointestinal disorder	Mandal et.al, 2010	The n-hexane extracts of the seeds of curry leaves demonstrated a significant inhibitory activity against castor oil induced diarrrohea and a significant decrease in gastro intestinal motility was observed in charcoal meal test in wister rats.
5	Hepatoprective	Patil et. al 2012	It has been revealed hepatoprective against ethanol induced hepatotoxicity.
6	Cardioprotective	Jaysinghe et. al 2012	Pre treatment with curry leaves extract may replenish cardiomyocytes and promote the defence against dox-orabicin induced cardiotoxicity
7	Analgesic	Nishan and Subramaniam (2015)	Root juice consumption gives renal pain relief
8	Anti diabetic	Arul Selvan et. al (2006)	Posses significant hypoglycemic potential in STZ-induced diabetic in rats. Its more effective than gibenclamide a known antidiabetic drug. Mahanimbine has been observed to decrease the blood sugar in mice.
9	Anti- cancer	Ghosh et. al 2012	Ether extract from curry leaves reported to decrease the cancer cells in mice
10	Free radical scavenging property	Ningappa et. al 2008	Its ethanolic extract has been found to have the highest antioxidant and free radical scavenging achrity

11	Antigenotoxic	Verma and Kumari 2020	Studies were made on mice sperm cells and showed. the ameliorating effect of curry leaves against paracetamol induced genotoxicity.
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6. CONCLUSION:-

Available reports and data collected from the literature survey it is concluded that *Murraya koenigii* is one of the miraculous plant often humorous medicinal importance due to its richness in antioxidants, carotenoids, alkaloids and with presence of more than 50 beneficial chemical constituents it unique.

Beside their medicinal property It also gives beneficiary effect on skin care, Hair damage due to high amount of Vit-A, its good for eye sight.

Keeping in view the tremendous pharmacological activities and availability of literature, the *Murraya koenigii* may be utilized to cause large number of disease and also in the production of medicines as well as ameliorating agent against various types of toxicity.

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