SHORT COMMUNICATION

PHARMACOGNOSTIC STUDIES ON THE LEAVES OF *MURRAYA KOENIGII* (L.) SPRENG

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Abstract: *Murraya Koenigi* (L.) (Mithaneem) spreng of family, Rutaceae is an important medicinal Plant that has many thereopeutic values and contain crystalline glucoside, koenigin, murrayin and resin. The leaves are used as anti-dysentric, anti-vomiting, anti-bacterial, stomachic purposes, anti-inflammatory, anti-feedant. Pharmacognostical studies including macromorphological and microscopic characters such as Palisade ratio, stomatal number, stomatal index, vein-islet number, veinlet termination numbers, histochemical colour reaction, fluorescence behaviour, extractive values and loss of drying were studied.

Keywords: Pharmacognostic, *Murraya Koenigii*, Rutaceae

INTRODUCTION

Murraya Koenigii (L.) spreng of family Rutaceae is commonly known as 'Curry leaf '. It is commonly found in foot hills of Himalaya, evergreen area and in moist forests. It is a large shrub or small tree up to 5 m. tall. It is an important tree spice grown in homesteads. Leaves are commonly used as flavouring agent in Indian curry preparation since ancient time. The leaves are ovate-lanceolate with an oblique base, leaves are aromatic and contain crystalline glucoside , koenigin, resin and murrayin. The leaves, bark and roots are used to cure many disorders and diseases like skin diseases, piles, bacterial infection, antivomating, anti-inflammatary, antifeedant and stomachi purposes. Curry leaf is used in ayurveda and Unani system of medicine. Pharmacognostic studies help in identification and authentication of plant material. Simple pharmacognostic technique used in standardization of Plant material includs its morphological, macroscopical and biochemical characteristics.

Vernacular names

Murraya koenigii (L.) spreng has several names in each language. Curry leaf tree, limblee tree in **English**- mitha-neem, gandhela, kadhi-neem, katnim or harri in **Hindi**, karepaku in **Telugu**, Kariveppu in **Malayalam** Purohit & Vyas.

MATERIAL AND METHOD

The fresh material was collected from the Botanical garden of Meerut College, Meerut. The were studied macroscopically and then fixed in F.A.A. for microscopical studies. The healthy plant material which was dried in shade made it to fine powder for phytochemical screening for histochemical colour reaction Johansen (1940), Youngken (1951), Cromwell *et al* (1955), Trease and Evans (1983) and Physical evaluation CI.P. 1966) were followed.

Cultivation

Murraya Koenijii (L) spreng has been considered as acultivated plant. It is used in Indian System of medicine. It contains important theropeutic values. It is cultivated either by root suckers or seeds. It is cultivated in tropical climate and all type of Soil.

Observations

The data collected is shown in table 1 and 2.

Table 1. Macromorphological characters of *Murrya Koenigii*.

Parameter	Results
1. Plant height	4 to 6 m.
2. Petiole Size	20 to 30 cm
3. Colour of leaf	Green
4. Venation	Reticulate

Table 2. Leaf characters of *Murrya Koenigii.*

Parameter	Range
1. Palisade Ratio	11-12.5-14
2. Stomatal Number Upper Surface	0
3. Stomatal Number lower surface	67-75-82
4. Stomatal Index Upper surface	0
5. Stomatal Index lower surface	13.47-14.28-15.42
6.Vein-islet number	12-13-15
7.Veinlet Termination number	9-10-12

RESULT AND DISCUSSION

a. **Macromorphology**
The Macromorphological studies of *murrya koenigii* revealed that the leaves are exstipulate, bipinnately compound and the leaflets are obliquely ovate with acute apex.

b. **Microscopical study** :- The following characters are observed under the compound microscope. The leaf were cleared in hydrogen peroxide and Acetic acid in equal amount. Presence or absence of stomata. The type to stomata was noted anomocytic. The uniseriate multicellular trichome were present on both the surface more frequent on upper surface of midrib portion. Leaf microscopy to determine, stomatal number, stomatal index, Palisade ration, vein islet number, veinlet termination number etc. Powder leaves were used to determine physicochemical character like water soluble extractive & alchol soluble extractive and moisture content etc. The result are shown in table No. 2

c. Chemical Evaluation : Prelimnary chemical studies shown presence of alka loids, carbohydreates, Protein, Tannin, Saponins, Flavonoids, Glycoside, Volatile oil and absence of Gum/mucilage. Difference in colour reaction tests are given in table - 3

d. Physical Evaluation

(a) Fluorescene behaviors of the w leaf of *Murraya Koenigii* variously tested are presented in table - 4

(b) Extractive values and moisture content are presented table – 5

Table 3. Phytochemical examination of leaves of *Murraya Koenigii.*

Qualitative Tests	Results
Carbohydrates	+
Protein	+
Tannin	+
Gum/Mucilage	_
Flavonoids	+
Alkoloid	+
Saponins	+
Glycoside	+
Volatile oil	+

Table 4. Fluorescence behaviour of leaves of *Murraya Koenigii.*

Treatment	Day Light	UV Light
Powder as such	Pale Green	Same
Powder in distilled	Bluish Green	Same
Water		
Powder in absolute	Olive Green	Orange
Alcohol		
Powder in 10% NaOh	Light Brown	Dark Brown
Powder in 50% HNO_3	Yellow	Black
Powder in 50% H_2SO_4	Dark Green	Yellow with green

Table 5. Physio-chemical Parameters of *Murraya Koenigii*.

Parameters	Value obtained on dry weight basis (W/W)
Loss of drying	10.15%
Water soluble extractives	9.45%
Alcohol soluble extractives	7.65%

Above mentioned the characters of the plants useful for treating different ailments and have a useful drug of luman use. It will also help in achieving desired therapeutic values. The Pharmaco-gnostic parameters will help for sub-standard quality of drug & checking the adulteration.

REFERENCES

Cromwell BT, Paech and MV Tracey (1955) Modern Methods of Plant Analysis, Vol.-4, Springer Verlag, Berlin, Heidelberg.

IP (1966) PhamacoPoeia of India Govt. Of India, Ministry of Health, Delhi.

Johansen DA (1940) Plant Microtechnique MC. Graw Hill Book Co. New York.

Purohit SS and Vyas SP (2004) Medicinal plant cultivation, A scientific approach 484-486.

Trease GC and WV Evans (1983). Pharmacognosy 12th Edition. Bailliere, London.

Youngken HW (1951). Pharmaceutical Botany 7th Edition. Blackiston Company, Toronto.