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A REVIEW ON CURRY LEAVES (MURRAYA KOENIGII): POTENTIAL MEDICINAL PLANT.

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Abstract

"Medicine is food and food is medicine" is the best way to describe on how the ailments were cured by using the plants during the ancient period of time. Murraya koenigii used to cure dysentery disorders, renal pain, stomach upsets and morning sickness. The carbazolealkaloids such as koenigin, bicyclomahanimbicine, cyclomahanimbine, murrayastine, coumarine, koenidine and pypayafolinecarbazole has substantial medicinal activities. . The "Magical plant of Indian Spice" (Murraya koenigii) has served humankind not only as food enhancer but also serve as village or folk medication to cure many disorders, the tribal communities has used many parts of the Murraya koenigiito cure them.

Keyword

Murraya koenigii, Phytochemistry, Biological activity, Rutaceae, Medicine, Ayurvedic.

Introduction

Taxonomic Classification[1]
Kingdom-Plantae
Subkingdom- Tracheobionta
Superdivision- Spermatophyta
Division- Magnoliophyta
Class- Magnoliopsida
Subclass – Rosidae
Family- Rutaceae
Genus- Murraya J. Koenig ex L.
Species- Murraya koenigii (L.)Spreng

Figure 1: Shows the whole plant of Murraya koenigii, leaves, Seeds.

Traditional uses

As a member of the citrus family, curry leaves have a strong, fragrant flavor similar to lemongrass. Used as an herb, curry leaves pack a much subtler flavor than curry powder by lending a complex depth of flavor to any dish. The barks and roots are used externally to cure the bites of the poisonous animals; the green leaves were eaten raw as a cure for dysentery, diarrhea[2] . Infusion of roasted leaves were given in order to stop emesis[1] .Furthermore, Murraya koenigiiwere also used as blood purifier, tonic and cure for stomachache and used as flavoring agents in curries and chutneys[3] .

Plant description and habitat

The plant is distributed and cultivated throughout India. It is found wild from Himalaya's, Uttarakhand, Sikkim to Garhwal, Bengal, Assam, Western Ghats and Travancore- Cochin. Propagation is done by seeds, which germinate freely under partial shade. Is also available in other part of Asian region like in moist forests of 500- 1600 mheightin Guangdong, S Hainan, S Yunnan (Xishuangbanna), Bhutan, Laos, Nepal, Pakistan,Sri Lanka, Thailand, Vietnamurraya Together with South Indian immigrants, curry leaves reached Malaysia, South Africa and Réunionisland. Outside the Indian sphere of influence, they are rarely found. Murraya koenigii is an unarmed, semi deciduous aromatic shrub or small tree with slender but strong woody stem and branches covered with dark grey bark, leaves are imparipinnate, glabrous, and very strongly aromatic. Leaflets 9-25 or more, short stalked, alternate, gland dotted and strongly aromatic

Morphological characteristic

Murraya koenigii has small spreading shrub which about 2.5 meters in height, the stem is dark green to brownish in color. Upon peeling of the bark longitudinally the underneath white wood is visible. The main stem‟s diameter is about 16cm. The leaves are about 30 cm long with each bearing 24 leaflets and have a reticulate venation. The flower is white funnel- shaped, having a sweet aromatic characteristic and the average diameter of fully opened flower would be 1.12cm and it is bisexual. The fruits are round to oblong in shape with 1.4 to 1.6cm in length and 1 to 1.2cm in the diameter. The fruit upon fully ripe will be black in color together with a shining surface and the pulp will be in wisteria blue. The seed will be spinach green with 11mm long and weigh about 445mg[8,9] .

Phytochemistry[8]

Alkaloids
Flavonoids:
Glycosides
Steroids
Saponins
Resins
Phenol
Tannins
Terpenoid

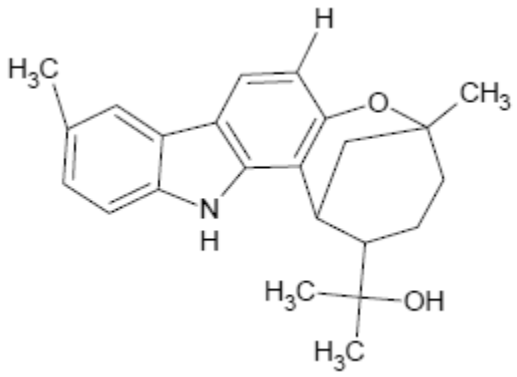

Figure 2. Shows the chemical structure isolated from the bark of Murraya koenigii[9]

Pharmacological activity of Murraya koenigii

Antimicrobial activity

The hexane, methanol and chloroform extract of the Murraya koenigii root were tested against Bacillus subtilis, Staphylococcus aureus, Escherichia coli, Salmonella typhi and fungal strain of Aspergillus niger, Candida albicans and Trichophyton rubrum. The hexane, methanol and chloroform extract of the root of Murraya koenigii was effective on all the tested strains and methanol extract showed more significant antimicrobial activity compared to the others with maximum inhibitory effect on Staphylococcus aureus and Trichophyton rubrum. The Staphylococcus aureus were susceptible to the all the three extracts above, furthermore the aqueous extract of the root were found to be ineffective against the tested microorganism[10] .

Antipyretic activity

The rats were fevered with the parentral administration of 10mg/kg of brewer‟s yeast and were found that the ethanol extract of Murraya koenigii leaves poses an antipyretic activity compared to petroleum ether extract and chloroform extract, with paracetamol dose.[11]

Hypoglycemic effects

The plasma glucose levels were found to be decrease in the alloxon induced rats on treatment with aqueous and methanolic extract of Murrayakoenigiileaves[12].

Hepatoprotective activity

The methanolic extract of Murraya koenigii leaves at the doses of 200mg/kg, 300mg/kg and 500mg/kg has shown decrease in the elevation on hepatic marker enzymes (Aspartate transaminase, Alanine transaminase, Serum bilirubin and Alkaline phosphate) as a result of administration of carbon tetrachloride on adult spraguedawley rats. The maximal dose of 500mg/kg was comparable to the standard drug, Silymarin, which has been used clinically for the treatment of the liver disease .[13]

Anti-inflammatory

The leaves of Murraya koenigii was subjected to extraction with three various solvents; petroleum ether, chloroform and ethanol. A dose of 250mg/kg was selected which is a 1/10th of 2500mg/kg which was considered as LD50, the dose was administrated via oral route. Compared to the three solvents, it was found that ethanolic extract shows significant reduction in carrageenan induced paw edema in the Albino rats of the wistar strain.[14]

Side Effects[15]

1. Possible Allergies

Some people might be allergic to curry. leaves. Therefore it is best for them to avoid using the leaves entirely. If you have itching, redness, or swelling after using curry leave then contact your doctor immediately.

2. Might Cause Upset Stomach

The high fiber content in the curry leaves may be good for the stomach. Sadly, excessive consumption of fiber may upset your stomach. It may cause bloating, diarrhea, stomach cramps, and constipation.

3. May Cause Low Blood Pressure

Excessive eating of curry leaves may cause low blood pressure due to its active iron compound. Iron may be essential for the body but excessive iron intake is harmful to the body in the long run. Therefore, it is best to eat curry leaves in moderate amounts.

4. Unwanted Water Weight Gain

Curry leaves are rich in sodium. Uncontrolled sodium intake may result in bloating and the deposit of water weight. Water weight may cause you to gain more weight. Thus, it is best to consume the leaves in moderate amounts.

5. Toxicity

Experts advise to not consume the small pods of the curry leaves plants as they are very toxic in nature. Therefore, extreme precautions should be kept in mind before eating the leaves.

Health Benefits[16]

1. **Powerful antioxidant**

Curry leaves are rich in plant compounds which are powerful antioxidants. These compounds keep us healthy and protect us from numerous diseases.They protect us from oxidative damage, preventing diseases of the nervous system, cardiovascular system, kidneys etc.

2. **May reduce the risk of cancer**

Curry leaves have anti-mutagenic potential. They protect our bodies from different types of cancers. Flavonoids in Curry leaves act as anti-cancer agents. They are effective in inhibiting the growth of breast cancer cells.Curry leaves also protect the body from colon cancers. Curry leaves are also beneficial in protecting our bodies from cervical cancer.

3. **Reduces risk of heart diseases**

Curry leaves protect our hearts by preventing oxidative damage. Consumption of Curry leaves also decreases cholesterol levels. It also reduces the level of triglycerides .Reduction in risk factors thus helps in protecting us from heart diseases.

4. **Helps in the management of diabetes**

Consumption of Curry leaves helps in the management of diabetes and its related complications. Curry leaves were found to be highly effective in reducing blood glucose levels.Curry leaves are rich in fibre which slows down digestion, thus preventing sudden spikes in blood sugar levels in our blood. They also boost the activity of insulin, further helping patients with diabetes. You can take a look at the Diabetes Food Chart to find other foods that can be included in your Diabetic Diet Plan.

5. **Analgesic**

Curry leaves were found to be useful in relieving pain and used traditionally as an analgesic (pain reliever).

6. **Heals wounds**

Curry leaves can even be applied topically! Apply curry leaves paste on wounds, mild burns or rashes to help heal them. Curry leaves have antiseptic properties that can even protect the wounded area of the skin from infections.

7. **Excellent for our hair**

Curry leaves when boiled with coconut oil makes an excellent hair tonic that prevents greying and stimulates hair growth.They strengthen our hair and prevent hair loss. They are also helpful in preventing dandruff and dry scalp.

Conclusion

Murraya koenigii was one of the medically beneficial plant which has been used many century ago by our ancestors. In the current globalization era, it is difficult to find a curry plant in majority of the houses and many diets has been dependent to synthetic agent as taste enhancer against curry leaves. Thus, the importance of these beneficial plant should be emphasized and the bioactive components of Murraya koenigii should be analyzed further and used against the disease that have been developed resistance and synergistic studies should be carried out.Curry leaves are an integral part of Indian cuisine. They are used to add flavor and lovely aroma to the many Indian dishes. Moreover, there are many health benefits of using curry leaves. Some of the benefits include – improved liver & cardiac health, better eye health, good digestion, etc. Also, they are easy to include in daily diet. Start your health journey by adding these delectable leaves into your diet.

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