

Phytochemical Investigation of *Madhuca Neriifolia* Leaves in Lunawada, Region Gujarat

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Received: 12 Jan 2024 / Accepted: 6 March 2024/ Published online: 01 April 2024

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Abstract

Madhuca neriifolia is one of the versatile forest tree species. In India this spice is generally found in Gujarat, Madhya Pradesh, Orisha, Andhra Pradesh, Bihar, U.P. as well. The use of Medicinal plants has played an important role in the field of pharmacy. Currently medicinal plants are being used for the treatment of cardiovascular disease. *Madhuca neriifolia* belongs to the family sapotaceous. We have extracted medicinal plant leaves in different polar and non-polar solvents in extracts with the help of Soxhlet apparatus. Phytochemical analysis revealed the presence of tannin, phenol, glucoside, flavonoids, steroid and Alkaloids in the acetone and toluene extract of leaves.

Keywords

Madhuca neriifolia, phytochemical analysis, Flavonoids, Mohua.

INTRODUCTION

Madhuca Indica belong to family of sapotaceae, *Madhuca Indica* is an Indian tropical tree found largely in the central north Indian, Nepal and Sri Lanka It is commonly known as madhuca, mahuwa, butter tree mahwa, vippachettu.[1] The leaves of madhucaIndica are fed on by the mothantheraeapaphia which produces tassar silk, a from of wild silk of commercial in portance in india.[2]Leaves, flowers and fruits are also lopped to feed goats and sheep.[3]Leaves are clustered at the end of branches, elliptic obovate, Flowers are small , cream coloured and produced in clusters at end of

branches (verma et al 2014).[4]Leaves of madhuca longifolia are used in cushing's Disease and bronchitis and have antioxidant properties. The barks reported the treatment for itching, swelling, sanke poison and diabetes.[5] *Madhuca neriifolia* is a medium sized, evergreen tree with adsense spreading canopy and distributed in semi-evergreen to evergreen forests of southern India. This is common along the streams and the rivers and occurs up to an altitude of 600-1200 meters above mean sea level (MSL) with the current threat status as vulnerable. (Ved and Goraya.2010).





Experimental work

Material and Methods

Plant material.

The fresh Leaves of *Madhuca neriifolia* was collected from local area of thelunawada region, mahisagar district. The collected plant material was free. The plant Leaves dried in the shade and powdered to prepare the extract in Soxhlet apparatus and checked by phytochemical analysis.

-In Toluene Solvent.

| Sr.no | Phytochemical Analysis | Observation | Result |
|-------|-----------------------------------|-------------------------|---------|
| 1 | Coumarin test | Yellow Color | Present |
| 2 | Alkaloids | Brown reddish | Present |
| | (a)Wagner test (b)Hager's test | Yellow color | Present |
| 3 | Proteins | No Change | Absent |
| 4 | Cardial Glycosides | Brown Color ring | Present |
| | Kellers killumi test | | |
| 5 | Steroid | Yellow with Green Color | Present |
| 6 | Tannin | Yellow precipitate | Present |
| 7 | Amino Acids | No Change | Absent |
| 8 | Anthocyanin | No Change | Absent |
| 9 | Emodins | No Change | Absent |
| 10 | Phenol | Bluish black Color | Present |
| | Flavonid | | |
| 11 | NH ₄ OH test | Yellow Color | Present |
| | Alkaline test | Yellow Colour | Present |
| 12 | Diterpenes | Green Color | Present |
| | Copper Acetate test | | |
| 13 | Saponin | Oil Form | Present |

-In Acetone Solvent

| Sr.no | Phytochemicals | Observation | Result |
|-------|-----------------------------|------------------------|-----------|
| 1 | Proteins xanthoproteic Test | Yellow Color | Present |
| 2 | Coumarin | Yellow Color with Ppts | Present |
| 3 | Emodins | Red Colour | Present |
| 4 | Tannin | Green Color | Present |
| 5 | Anthocyaanin | No Change | No change |
| 6 | Amino Acids | No Change | No change |
| 7 | Phenol | Bluish black Color | Present |

Primary photochemical analysis

Primary phytocamical analysis screening of the extract an idea of the natural compounds presents in the medicinal extracts of the plant. The presence and absence of compounds such as flavonoids, phenol, Alkaloids etc., are identified by phytochemical investigation.

| | | | |
|----|--------------------|------------------------|-----------|
| 8 | Cardial Glycosides | Brown Color Ring | Present |
| 9 | Flavonoid | Yellow Colour and Ppts | Present |
| 10 | Steroid | No Change | No change |



Alkaloids
(a)Wagner test
(b)Hager's test

Diterpenes
Copper Acetate test

Cardial Glycosides

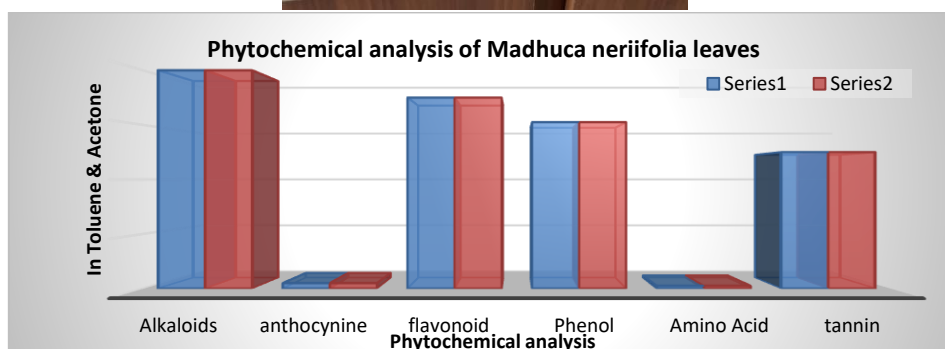
Fluorescent test

This is a Qualitative analysis test and can be used as a first primary test. When the starting powder material is dealt with acid, base, and neutral reagents. It may assemble fluorescent light. In the

present qualitative investigation, fluorescent light is observed in Con. HCL, Con.H₂SO₄, con HNO₃ and ammonia therefore Organic solvent or when Con. HCl, con H₂SO₄is used the powder generate fluorescence.

Fluorescent test for *Madhuca neriifolia* leaf powder

| Sr.no | Solution | Observation | Result |
|-------|---|--------------------|---------|
| 1 | Powder + Con-HCl | No Change | Absent |
| 2 | Powder + Con-HNO ₃ | Light Yellow Color | Present |
| 3 | Powder + Con H ₂ SO ₄ | Dark brown | Present |
| 4 | Powder + NH ₃ (l) | Only yellow colour | Present |
| 5 | Powder + Toluene | Only yellow colour | Present |
| 6 | Powder + Gal. Acetic Acid | Yellow colour | Present |
| 7 | Powder + Benzene | No change | Absent |



From the above chart we can say Alkaloids, phenol, tannin, flavonoid were highly present and Anthocyanin and amino acids are present in lesser amount.

CONCLUSION

Phytochemical analysis of *Madhuca neriifolia* tree leaves was done in polar and non-polar solvents using Acetone as polar solvent and Toluene as non-polar solvent. Studying Phyto Chemical Analysis revealed that Alkaloids, Glucoside, Flavonoids, Coumarin, Phenol and Tannin were present while compounds like Emodins, Anthocyanin and Amino acid were absent.

The leaves extract showing positive results in the inhibition of bacteria. The scientist as well as Medicines, Ayurveda are best alternative to combating for diseases they have immense potential to treat the plant. The least side effects and with highly safety and efficacy in *Madhuca Neriifolia* Leaves.

Leaves of this plant are also used for the purpose of quality control of herbal medicines. And due to the content of components like bioactive and organoleptic in this plant, it can be used in the fields of food product and health care respectively. For *Madhuca neriifolia* extract leaves in Acetone and toluene has major nootropic activities. The use of the present study may guide future studies in determining the purity and quality of *Madhuca neriifolia*.

ACKNOWLEDGMENT

We are thankful to Shri Govind guru University and Shri M.P..Pandya Science College Department of Chemistry Lunawada for doing this Research work. This work is dedicated to my respected guide dr.swanti.A.jain.

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