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Studies on Qualitative Analysis of Some Phytochemical of Mimusops elengi L. from Dapoli Tahsil, Ratnagiri

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Abstract: *Mimusops elengi L Phytochemical are bioactive non-nutrient plant compounds in fruits, vegetables, grains, and other plant foods that have been linked to reducing the risk of major chronic diseases. Dietary intake of phytochemicals may promote health benefits, protecting against chronic degenerative disorders, such as cancer, cardiovascular and neurodegenerative diseases. phytochemical, either alone or in combination, have tremendous therapeutic potential in curing various ailments. Some of the benefits of phytochemical are their low toxicity, low coast, easy availability and their availability to prevent some chronic diseases. Mimuosops elengi L. is one of the most used therapeutic plants by tribal peoples. In the present investigation we had studied, qualitative test of bioactive constituents of plants are alkaloids, tannins, flavonoids and phenolic etc.*

Keywords: Phytochemicals, flavonoids, medicinal plant, *Mimusops elengi* L.

I. INTRODUCTION

Mimusops elengi L. flowers are used as a stimulant medicine. It is a brain tonic by the traditional practitioners of Souther calm anxiety, (Balamurugan, 2015). According to Unani system of medicine flowers of this drug are considered as expectorant, cures biliousness, liver complaints, disease of nose headache and their smoke is considered good for asthma. It is also used for preparing lotion for wound and ulcers. (Barathi KK, and Agastian P. 2015). Therefore, the objective of this study was to determine the phytochemical qualitatively.

In India, it is used as cardiac stimulant. Nutritional value, biological activity of the kernel of *Mimusops elengi* L. exhibit very good digestibility, antioxidant activity, anti-HIV, anti-asthma, anti- inflammatory, ant carcinogenic, antibacterial and hepatoprotective properties. (Barathi KK, and Agastian P. 2015)

Hence the present investigation was undertaken with the main objective of screening the leaf of the plant, *Mimusops elengi* L. (Sapotaceae) for its qualitative tests of phytochemical contents. An investigation was carried out to analyze the phytochemical contents of leaves of *Mimusops elengi* L.

II. MATERIAL AND METHODS

Mimusops elengi L.

Mimusops elengi L. is a medium sized evergreen tree found in Southeast Asia, particularly the coastal areas of the Indian English common names include Spanish cherry, its timber is valuable, the fruit is edible, and it is used in traditional medicine. As the trees give thick shade and flowers emit fragrance, it is a prized collection of gardens.

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2.1 Methods

A. Qualitative Analysis of Phytochemicals

1) **Test for Alkaloids**

1. **Mayer's Test:** To a few ml of plant sample extract, two drops of Mayer's reagent are added along the sides of test tube. Appearance of white creamy precipitate indicates the presence of alkaloids.[6]
2. **Wagner's Test:** A few drops of Wagner's reagent are added to few ml of plant extract along the sides of test tube. A reddish- Brown precipitate confirms the test as positive.[7]

2) **Test for Amino acids**

The extract (100 mg) is dissolved in 10 ml of distilled water and filtered through Whatmann No. 1 filter paper and the filtrate is subjected to test for Amino acids.

1. **Ninhydrin Test:** Two drops of ninhydrin solution (10 mg of ninhydrin in 200 ml of acetone) are added to 2 ml of aqueous filtrate. Appearance of purple colour indicates the presence of amino acids. [8]

3) **Test for Carbohydrates**

Molish' s Test:

1. To 2 ml of plant sample extract, two drops of alcoholic solution of α- naphthol are added. The mixture is shaken well and few drops of concentrated sulphuric acid is added slowly along the sides of test tube. A violet ring indicates the presence of carbohydrates.
2. **Benedict' s Test:** To 0.5 ml of filtrate, 0.5 ml of Benedic's reagent is added. The mixture is heated on a boiling water bath for 2 minutes. A characteristic coloured precipitate indicates the presence of sugar.

4) **Test for Fixed oils and Fats**

1. **Spot Test:** A small quantity of extract is pressed between two filter papers. Oil stain on the paper indicates the presence of fixed oils.
2. **Saponification Test:** A few drops of 0.5 N alcoholic potassium hydroxide solution is added to a small quantity of extract along with a drop of phenolphthalein. The mixture is heated on a water bath for 2 hours. Formation of soap or partial neutralization of alkali indicates the presence of fixed oils and fats.

5) **Test for Glycosides**

For 50 mg of extract is hydrolysed with concentrated hydrochloric acid for 2 hours on a water bath, filtered and the hydrolysate is subjected to the following tests.

1. **Borntrager's Test:** To 2 ml of filtered hydrolysate, 3 ml of choloroform is added and shaken, choloroform layer is separated and 10% ammomia solution is added to it. Pink colour indicates presence of glycosides.
2. **Legal's Test:** 50 mg of extract is dissolved in pyridine, sodium nitroprusside solution is added and made alkaline using 10% NaOH. Presence of glycoside is indicated by pink colour.

6) **Test for Phenolic compounds and Tannins**

1. **Ferric Chloride Test:** The extract (50 mg) is dissolved in 5 ml of distilled water. To this few drops of neutral 5% ferric chloride solution are added. A dark green colour indicates the presence of phenolic compound.
2. **Gelatin Test:** The extract (50 mg) is dissolved in 5 ml of distilled water and 2 ml of 1% solution of Gelatin containing 10% NaCl is added to it. White precipitate indicates the presence of phenolic compounds.
3. **Lead Acetate Test:** The extract (50 mg) is dissolved in of distilled water and to this 3 ml of 10% lead acetate solution is added. A bulky white precipitate indicates the presence of phenolic compounds.
4. **Alkaline Reagent Test:** An aqueous solution of the extract is treated with 10% ammonium hydroxide solution. Yellow fluorescence indicates the presence of flavonoids

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7) **Test for phytosterols**

1. **Libermann-Burchard's Test:** The extract (50 mg) is dissolved in of 2 ml acetic anhydride. To this, 1 or 2 drops of concentrated sulphuric acid are added slowly along the sides of the test tube. An array of colour change shows the presence of phytosterols.

8) **Test for Proteins**

The extract (100 mg) is dissolved in 10 ml of distilled water and filtered through Whatmann No. 1 filter paper and the filtrate is subjected to test for proteins.

1. **Millon's Test:** To 2 ml of filtrate few drops of Millon"s reagent are added. A white precipitate indicates the presence of proteins.
2. **Biuret Test:** 2 ml of filtrate is treated with 1 drop of 2% copper sulphate solution. To this 1 ml of ethanol (95%) is added, followed by excess of potassium hydroxide pellets. Pink colourethanolic layer indicates the presence of protein.

9) **Test for Saponins**

The extract (50 mg) is diluted with distilled water and made up to 20 ml. The suspension is shaken in a graduated cylinder for 15 minutes. A two cm layer of foam indicates the presence of saponins.

10) **Test for gum and Mucilages**

The extract (100 mg) is dissolved in 10 ml of distilled water and to this 2 ml of absolute alcohol is added with constant stirring. White or cloudy precipitate indicates the presence of Gums and Mucilages. General Techniques Involved in Phytochemical Analysis International Journal of Advanced Research in Chemical Science (IJARCS)

11) **Test for volatile oil**

For volatile oil estimation 50 mg of powdered material (crude drug) is taken and subjected to hydro- distillation. The distillate is collected in graduate tube of the assembly, wherein the aqueous portion automatically separated out from the volatile oil.

2.2 Observation

Test	Observations	Inference
1**. Test for Alkaloids**		
a. Mayer' s test	Positive	Alkaloids is present
b. Wagner's test A few drops of Wagner's reagent are added to few ml of plant extract along the sides of test tube.	Positive	
2. Test for Amino acids		
Ninhydrin test	Nigative	Amino Acid Absent
3. Test for Carbohydrates		
a. Molish Test	Positive	Carbohydrate Present
b.**Benedict' s test**	Positive	Sugar Present
4. Test for Fixed oils and Fats		
a. Spot test	Positive	Fixed Oil is Present
b. Saponification test	Positive	Fixed Oil and Fats is Present
5. Test for Glycosides		
a. Borntrager'sTest	Negative	Glycoside is absent
b. Legal's Test	Negative	Glycoside is absent

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6.Test for Phenolic compounds and Tannins		
a. Ferric Chloride Test	Negative	Phenolic compound absents
b. Gelatin Test	Negative	Phenolic compound absents
c. Lead acetate test	Negative	Phenolic compound absents
d. Alkaline reagent test	Positive	Flavonoids is present
Test for phytosterols		
Libermann-Burchard's test	Positive	Phytosterol is present
8. Test for Proteins		
Millon's test	Positive	Protein is present
Biuret test	Positive	Protein is present
9. Test for Saponins	Positive	Saponins is present
10. Test for gum and Mucilages	Negative	Gums and mucilages is Absent
11. Test for volatile oil	Negative	Volatile oil is absent

III. RESULT

There *Mimusops elengi* L Qualitative test for amino acids, Alkaloids, Carbohydrates, Fixed oils and fats, phenolic compounds and Tannins, Phytosterols, Proteins, Saponins are present. There is *Mimusops elengi* L. test for Glycosides and volatile oil. Gum and mucilage's are absent.

IV. CONCLUSION

Plants have a noteworthy position in the medicinal field due to their therapeutic properties and prove to be a rich source of drugs. Therapeutic properties are due to the presences of various phytochemicals present in the plant. Plants naturally able to synthesize secondary metabolites according to the climatic condition they grow and also various other environmental factors. Hence, studying parts of the plant from a particular place is a must to ensure its specific properties. In the present study, stronger reactions were observed for alkaloid, flavonoid, protein, phytosteroid with fruit

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