



CHEMICAL CONSTITUENTS FROM ETHANOL EXTRACT OF MANGIFERA INDICA (BLOSSOMS)

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Abstract:

Mangifera indica is one of the important tropical fruits in the world and India contributes major part of the world production. Mango is national fruit of India. There are many traditional medicinal uses for the different parts of *M. indica* throughout the globe. It is used as astringent, ophthalmia, eruptions, haemorrhages, menorrhagia, dysentery, antiscorbutic, laxative in traditional medicine. Ethanol extract was characterized by Gas Chromatography-Mass Spectroscopy. Seven constituents from 19 peaks were identified. Major compounds are (7-methyl-octyl)-benzene, 21-methoxy-henicosan-4-ol, 20-hydroxy-tricosanoic acid, 4-hydroxy-oconic acid ethyl ester, Hentriaconta-1, 5-diene, Icos-2-ene, Nonadeca-1, 5, 9-triene, Icosanic acid ethyl ester.

Key Words: *Mangifera Indica*, GC/MS Analysis & Ethanol Extract

1. Introduction:

India has a rich heritage of knowledge on plant based drugs both for use in preventive and curative medicine. Antimicrobials of plant origin have enormous therapeutic potential¹. They are effective in the treatment of infectious diseases while simultaneously mitigating many of the side effects that are often associated with synthetic antimicrobials. The beneficial medicinal effects of plant materials typically result from the combinations of secondary products present in the plant. In plants, these compounds are mostly secondary metabolites such as alkaloids, steroids, tannins and phenol compounds, flavonoids, steroids, resins fatty acids gums which are capable of producing definite physiological action on body².

Mango (*Mangifera indica* L.) is one of the choicest fruit of tropical and sub-tropical region of the world, especially in Asia. Its population and importance can easily be realized by the fact that it is often referred as “King of Fruits in the Tropical World”. Mango is popular due to its excellent flavour, delicious taste, delicate fragrance, attractive colour and nutritive value which make it rank among the best fruits of world³. Many phenolic compounds have been detected in mango peels⁴, mango bark⁵, mango puree concentrate⁶, mango pulps and seed kernels⁷. Carotenoids from mango⁸, alkaloids, carbohydrate, phytosterols, resins, phenol, tannins, flavonoids and amino acid, triterpene⁹, alkaloids¹⁰ isolated from leaves.

2. Plant Material:

The blossoms of *Mangifera indica* was collected from tropical area of Madhya Pradesh (Figure1, 2)

3. Blossoms Extract:

An amount of 5kg of fresh blossoms was weighed and shade dried, cleaned, and then extracted serially hexane, acetone, ethanol, methanol and aqueous extraction for 95-126 hours each in a soxhlet extractor. Solvent was removed by rotary film evaporator and concentrated extracts were preserved in refrigerator for further use. Ethanol extract again fractionated by different solvents and ethyl acetate fraction was selected for investigation.

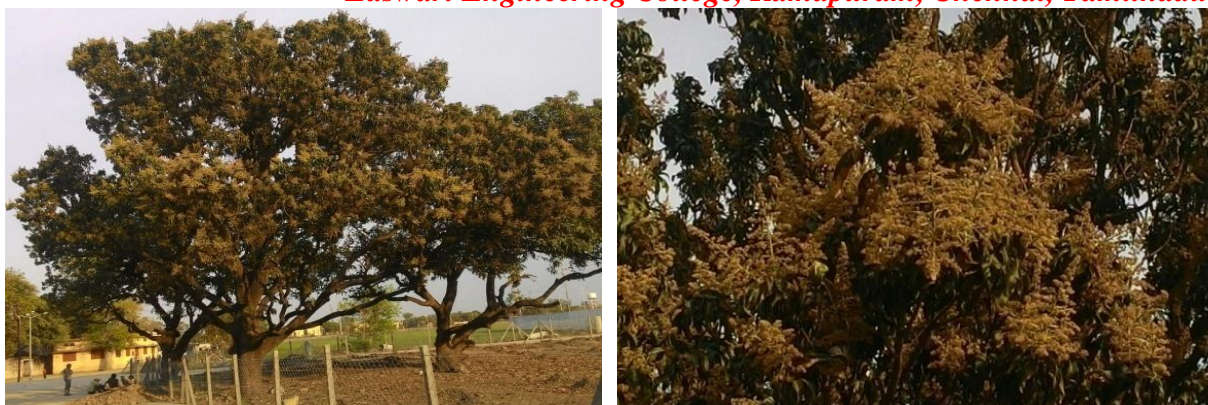


Figure 1: *Mangifera indica* tree & Figure 2: Mango flowers

4. Analysis of Ethanol Extract:

Mass spectrometry analysis was performed on Shimadzu GCMS-QP-2010 SE model using Direct Injection Probe technique.

5. GC-MS Analysis of Ethanol Extract:

GC-MS analysis indicated that the ethanol extracts, ethyl acetate fraction contained about 19 peaks. The composition of ethyl acetate fraction and its retention time are given in Table 1. (7-methyl-octyl)-benzene, 21-methoxy-henicosan-4-ol, 20-hydroxy-tricosanoic acid, 4-hydroxy-oconic acid ethyl ester, Hentriaconta-1,5-diene, Icos-2-ene, Nonadeca-1,5,9-triene, Icosanic acid ethyl ester¹¹.

Table 1: Composition of *Mangifera indica* ethanol extract

| Peak number | Retention Time (minutes) | Compounds |
|-------------|--------------------------|-----------------------------------|
| 1 | 4.125 | (7-methyl-octyl)-benzene |
| 10 | 38.520 | 21-methoxy-henicosan-4-ol |
| 11 | 39.715 | 20-hydroxy-tricosanoic acid, |
| 12 | 40.220 | 4-hydroxy-oconic acid ethyl ester |
| 13 | 42.380 | Hentriaconta-1,5-diene |
| 15 | 43.370 | Icos-2-ene |
| 16 | 43.830 | Nonadeca-1,5,9-triene, |
| 17 | 48.150 | Icosanic acid ethyl ester |

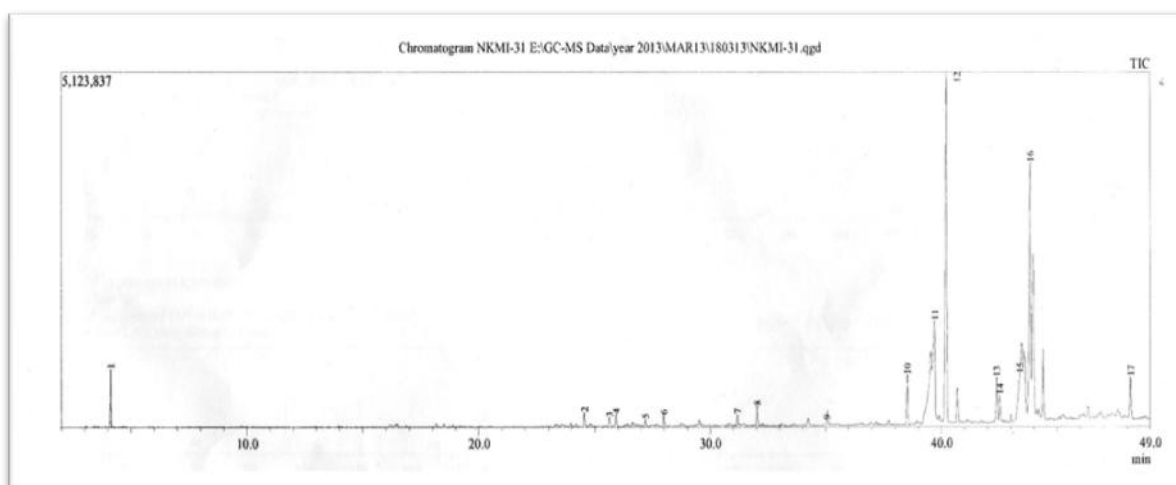


Figure 3: Chromatogram of *Mangifera indica* ethanol extract- ethyl acetate fraction.

6. Result and Discussion:

In the present study, an amount of 5kg of *Mangifera indica* blossoms and solvents such as hexane, acetone, ethanol, methanol and water were used for the extraction. Ethanol extract ethyl acetate fraction 8 major compounds reported first time by us from this plant.

7. References:

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