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GC-MS Analysis of *Ricinus communis*, *Pongamia pinnata*, *Datura metal*, *Azadirachta indica*, *Acalypha indica* (leaf) Extract Using Methanol Extraction

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Abstract : Natural goods, especially therapeutic plants, are abundant in the World. Because they have the ability to provide all humanity with countless advantages as a source of medicines, medicinal plants are presently receiving more attention than ever. These plants' therapeutic efficacy is based on bioactive phytochemical components that have clear physiological effects on the human body. The drying process is crucial for the preparation of plant materials prior to extraction since freshly harvested plant materials include active enzymes that create active components, intermediates, and metabolic processes. Many of the phytoconstituents may be extracted using the semi-polar solvent methanol. The goal of the current work is to use the GC-MS gas chromatography- mass spectrometry technology to identify the phytochemicals and review their biological activity. In methanol leaf extract, 5 phytocompounds were found in *Ricinus communis*, 5 phytocompounds in *Pongamia pinnata*, 12 phytocompounds in *Datura metal*, 7 phytocompounds in *Azadirachta indica*, 11 phytocompounds in *Acalypha indica*.

Keywords : Medicinal plants, Phyto-chemicals, methanol solvent, extraction process, (GC-MS) gas chromatography-mass spectrometry analysis

Introduction

The Indian subcontinent is one of the nations with the highest levels of medicinal plant genetic diversity and is abundant in medicinal plants.[1] Plant that contains advantageous phytochemicals may serve as natural antioxidants that enhance the body's requirements.[2] Numerous studies have demonstrated the abundance of antioxidants in several plants. For instance, antioxidants include vitamins A, C and E as well as phenolic substances like flavonoids, tannins and lignin found in plants.[3] The drying process is crucial for the preparation of plant materials prior to extraction since fresh plant materials include active enzymes that are responsible for producing the active ingredients, intermediates, and metabolic processes in the plant materials. Since heat may destroy volatile components of plant materials and some light-sensitive components can be destroyed by light, many researchers dry their plants using the air-drying method in a shaded, dark environment.[4] Lower molecular weight polyphenols may often be extracted more successfully using methanol.[5] Since the beginning of time, humans have used plants for fundamental preventative and therapeutic health care. Without having undertaken in-depth study among several indigenous and other people, over 9,000 plants have been reported to have therapeutic uses across diverse civilizations and nations.[6] A technique called gas chromatography-mass spectrometry (GC-MS) combines the advantages of mass spectrometry with gas-liquid chromatography to detect various compounds in test materials. Drug detection, fire investigation, environmental analysis, explosives investigation, and identification of unidentified materials are a few applications of GC-MS.[7] The only species in the genus *Pongamia* (*Papilionaceae*) is *Pongamia pinnata*. the tree found in tidal and seashore forests all throughout India. In Australia, the Philippines, China, India. *Pongamia pinnata* has been used to treat rheumatoid arthritis, whooping cough, bronchitis, and diphtheria in people with diabetes. For the treatment of tumours, piles, skin conditions, itches, abscesses, severe rheumatic joint wounds, ulcers, and diarrhoea, the entire plant has been used as a simple medication.[8] Neem (family *Meliaceae*, genus *Azadirachta*), it is one of the most famous plants that is native to India and is grown in tropical and

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subtropical areas all over the world. Since ancient times, every portion of the tree has been employed as a traditional medicine for domestic treatment of a variety of human diseases.[9] Studies have demonstrated that the flower, leaves, and bark of *Azadirachta indica* may be used to assess the numerous chemical compounds, anti-oxidants, fatty acids, flavonoids, and biological activity in the various components.[10] The datura plant, a member of the *Solanaceae* family and essentially a weed, is prized for its medicinal and poisonous characteristics as well as being an annual plant. Datura is a Sanskrit term that is derived from Dustura or Dahatura. It is frequently called a "thorn apple". Several Datura species, including *Datura stramonium*, *Datura inoxia*, *Datura wrightii*, and *Datura metal*, are widely known for their medical benefits.[11] In this study *Datura metal* species were used to identify the phytocomponents. In the year 1753, the scientist Linnaeus published the first description of the plant *Datura metal*, it can develop in the generally warm and moist atmosphere and is planted across India.[12] The *Datura metal* plant is well recognised for being abundant in a variety of bioactive substances, including tannins, flavonoids, triterpenoids, alkaloids, and steroids.[13] The plant's medical benefits, which include the ability to treat conditions like asthma and bronchitis, are due to the bioactive components.[14] *Acalypha indica's* blooms, roots, tail, and leaves are used in siddha medicine for its healing powers. *Acalypha indica* is a common annual spice that is typically found in the waste areas and terraces of buildings across India's fields.[15] Our environment is cleaned by the plants that are already there, and their plant products are also abundant sources of cellular building blocks and phytochemicals with medicinal uses.[16] By keeping this, the current study was conducted to look into the phytochemicals found in plant leaves that were extracted using methanol.

Material and methods

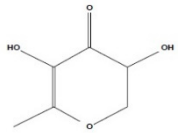
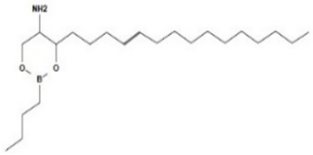
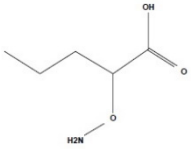
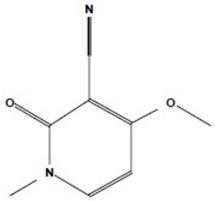
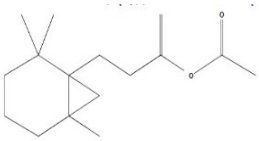
Selected plants and collection

The leaves of 5 different plants like *Ricinus communis*, *Pongamia pinnata, Datura metal, Azadirachta indica* and *Acalypha indica* in Vellore district, Tamil Nadu, India.

Leaf Extraction

Leaf extraction: Using an electrical grinder, the gathered leaves were crushed into a powder after being shade-dried

Table 1. Phytocomponents identified in the methanolic extract of *Ricinus communis* (leaf) by GC-MS.

No.	Retention time	Compound name	Molecular formula	Molecular weight	Structure
1	14.563 min	3,5-Dihydroxy-6-methyl -2H-pyran-4(3H)-one	$C_6H_8O_4$	144	
2	18.110 min	2-Amino-octadec-7-ene	$C_{22}H_{44}O_2NB$	365	
3	21.586 min	Pentanoic,2-(aminooxy) -3-pyridinecarbonitrile	$C_5H_{11}O_3N$	113	
4	25.117 min	1,2-dihydro-4-methoxy -1-methyl-2-oxo	$C_8H_8O_2N_2$	164	
5	28.674 min	Acetic acid, 1-[2-(2,2,6-trimethyl-bicyclo[4.1.0] hept-1-yl)-ethyl]-vinyl ester	$C_{16}H_{26}O_2$	250	

for 10 to 15 days to achieve complete drying. The dried leaf powder was then dissolved in 50ml of methanol and stirred for three hours at 60 to 70°C using a magnetic stirrer set to its highest speed. After the setup had been left alone for 24 hours, the extract was filtered using regular filter paper. The sample was delivered there for GC-MS analysis, and the filtrate was maintained there for methanol evaporation on transparent petri plates.[17]

GC-MS analysis

The Perkin Elmer (clarus 680 model) GC-MS instrument was utilized for the analysis. The methanol extracts of *Pongamia pinnata, Datura metal, Azadirachta indica*, and *Acalypha indica* were subjected to GC-MS analysis using a fused silica column loaded with Elite-5MS (5 % biphenyl 95% dimethylpolysiloxane, 30 m × 0.25 mm ID × 250 µm df). Helium was used as the carrier gas with an injection volume of 1µL and a constant flow rate of 1 ml/min. The injector temperature was set to 260°C, and the ion source temperature was set 260°C, with a scan duration of 0.2 seconds and a scan interval of 0.1 seconds. Comparing the component spectra to the database of component spectra included in the GC-MS NIST (2008).

Result and discussion

Analysis of *Ricinus communis* Leaf extract

The GC-MS results revealed the phytocomponents present in the leaf methanol extract of *Ricinus communis*. It contains 5 compounds namely 4H-Pyran-4-one,2,3-dihydro-3,5-dihydroxy-6-methyl- was observed at 14.563 min with molecular formula $C_6H_8O_4$ and molecular weight of 144. 2-amino-octadec-7-ene-1,3-diol butaneboronate was observed at 18.110 min with molecular formula $C_{22}H_{44}O_2NB$ and molecular weight of 365. Pentanoic,2-(aminooxy)- compound was observed at 21.586 min with molecular formula

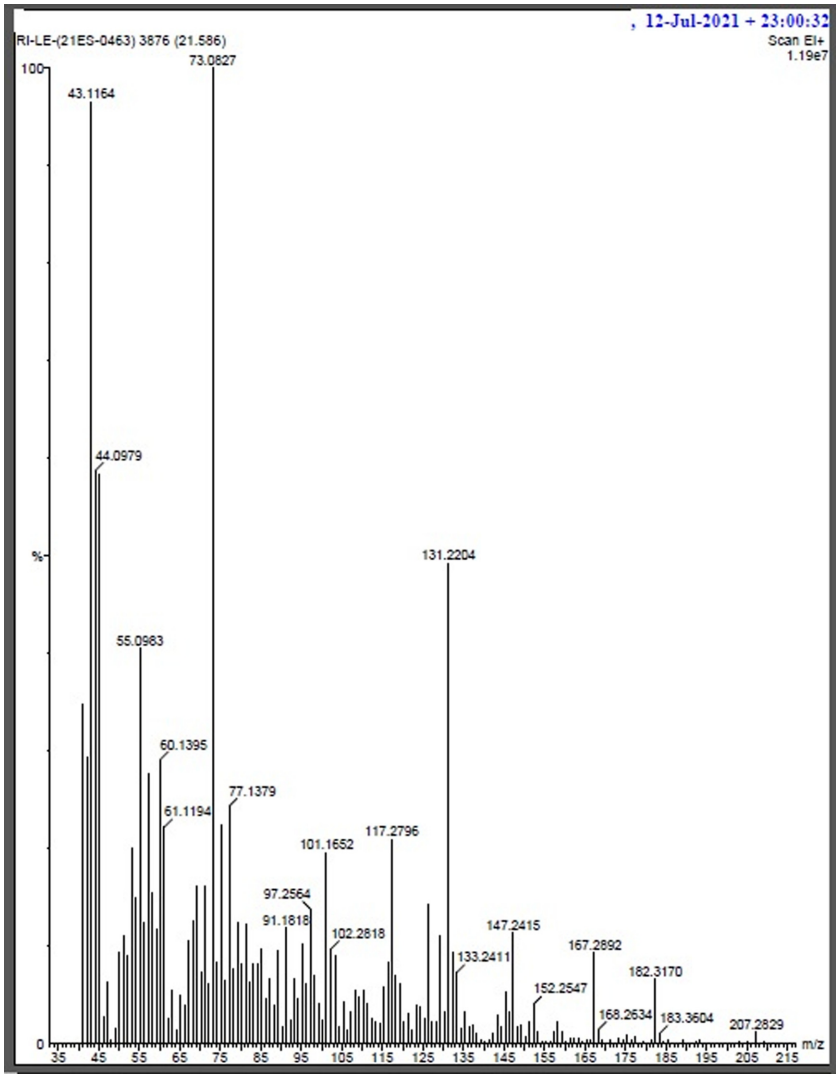


Fig. 1. Mass spectra of the methanolic leaf extract of *Ricinus communis* major compound (Pentanoic,2-(aminooxy)-).

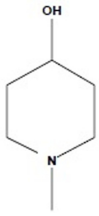
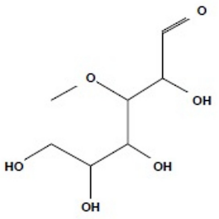
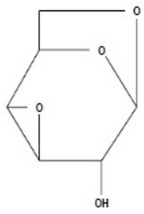
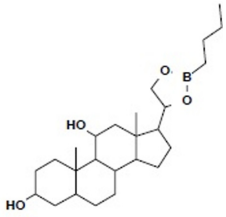
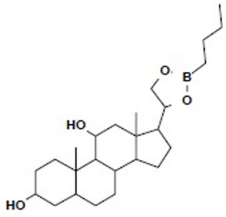
$C_5H_{11}O_3N$ and molecular weight of 133. 3-pyridinecarbonitrile, 1,2-dihydro-4-methoxy-1-methyl-2-oxo compound was observed at 25.117 min with molecular formula $C_8H_8O_2N_2$ and molecular weight of 164. Acetic acid, 1-[2-(2,2,6-trimethyl-bicyclo [4.1.0]hept-1-yl)-ethyl]-vinyl ester was observed at 28.674 min with molecular formula of $C_{16}H_{26}O_2$ and molecular weight of 250.

Analysis of phytocomponents in the leaf of *Ricinus communis* using ethanol there was no same component when compare to this study.[18] (Figure. 1) Pentanoic,2-(aminooxy)- compound showed a high percentage area in a given sample. The same compound was identified in methanol extraction of Musa acuminata flowers[19] identified that this compound showed anticancer activity.

Analysis of *Pongamia pinnata* leaf extract

GC-MS analysis revealed the phytocomponents in methanol extraction of *Pongamia pinnata* namely 4-Hydroxy-N-Methylpiperidine compound was observed at 18.551 with molecular formula of $C_6H_{13}ON$ and molecular weight of 115. 3-O-Methyl-D-Glucose was observed at 19.371 min with molecular formula of $C_7H_{14}O_6$ and molecular weight of 194. 3,4-Anhydro-D-Galactosan was observed at 20.591 min with molecular formula of $C_6H_8O_4$ and molecular weight of 144. Pregnane-3,11,20,21-Tetrol cyclic 20,21-(Butyl boronate), (3.Alpha.,5.B Beta.,11.beta.,20R)- was observed at 27.199 min

Table 2. Phytocomponents identified in the methanolic latex extract of *Pongamia pinnata by GC-MS.*

No.	Retention time	Compound name	Molecular formula	Molecular weight	Structure
1	18.551 min	4-Hydroxy-N- methylpiperidine	$C_6H_{13}NO$	115	
2	19.371 min	3-O-Methyl-D-glucose	$C_7H_{14}O_6$	194	
3	20.591 min	3,4-Anhydro-D-galactosan	$C_6H_8O_4$	144	
4	27.199 min	(20R)-20,21-[(Butylboranediyl)bis(oxy)] -5beta-pregnane-3alpha	$C_{25}H_{43}BO_4$	418	
5	28.314 min	(20R)-20,21-[(Butylboranediyl)bis(oxy)] -5beta-pregnane-3alpha	$C_{25}H_{43}BO_4$	418	

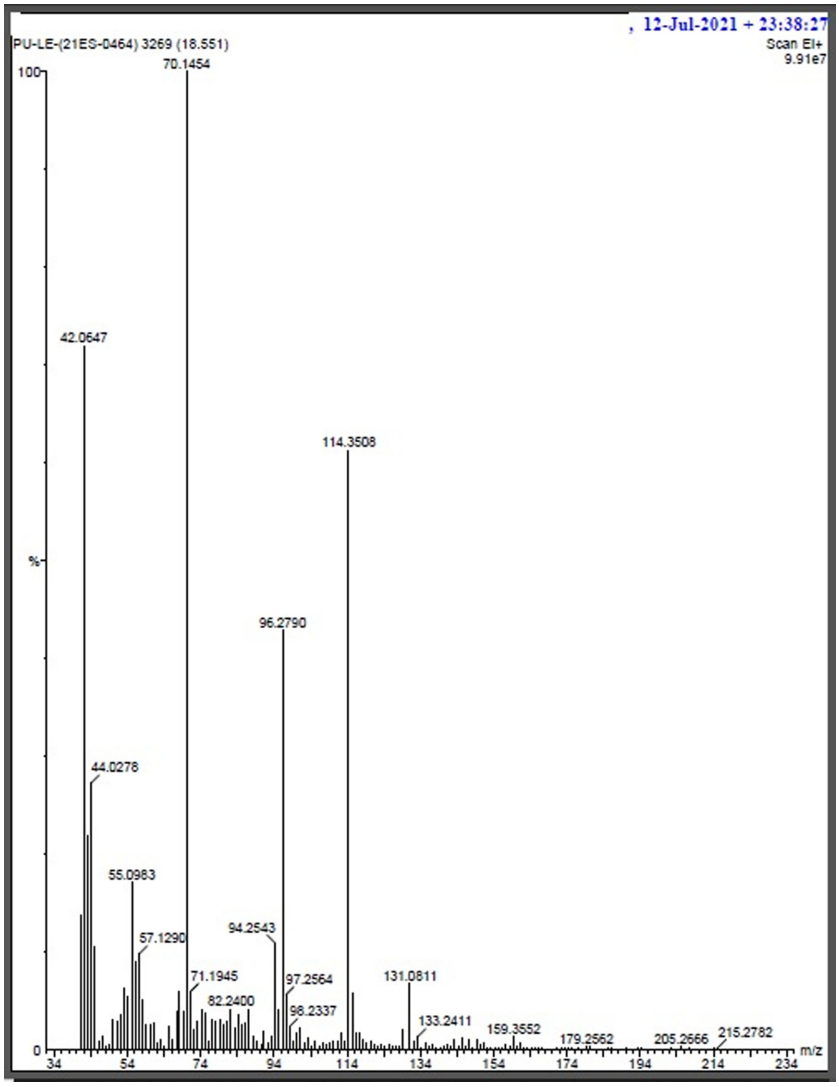


Figure 2. Mass spectra of the methanolic leaf extract of *pongamia pinnata* major compound (4-Hydroxy-N- Methylpiperidine).

with molecular formula of $C_{25}H_{43}O_4B$ and molecular weight of 418, area percentage of 8.146%. Again the same compound Pregnane-3,11,20,21-Tetrol cyclic 20,21-(Butyl boronate), (3.Alpha,5.Beta., 11.beta.,20R)- was observed at 28.314 min was observed at 28.314 min with molecular formula of $C_{25}H_{43}O_4B$ and molecular weight of 418, area percentage of 3.738% . This compound was present twice in a given sample it shows the difference in area percentage and retention time.

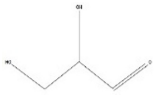
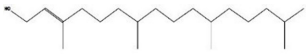
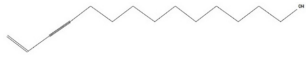
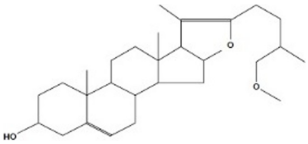
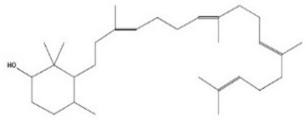
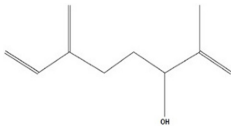
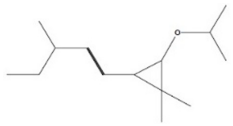
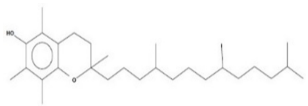
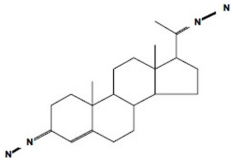
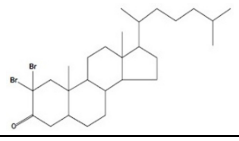
Using the Soxhlet equipment, ethanol was extracted from the leaf extract of the *Pongamia pinnata* plant.[20] However, the compounds discovered in this study and those mentioned in the literature were not the same. (Figure - 2) 4-Hydroxy-N- Methylpiperidine compound showed a high percentage in a given sample. Pregnane-3,11,20,21-Tetrol cyclic 20,21-(Butyl boronate), (3.Alpha,5.Beta.,11.beta.,20R)-compound was already reported that identified in *Phlomis stewartii* by n-hexane fraction which involved in antioxidant and antimicrobial activity.[21] and also found in methanolic extract of *Passiflora incarnata*.[22] 4-Hydroxy-N-Methylpiperidine compound also identified in *Pongamia pinnata* leaf methanol extract[23] this same compound found in this study also. 3,4-Anhydro-D-Galactosan compound was already identified in ethanol extract of *Crotalaria longipes* showed the preservative activity.[24]

Analysis of Datura metal leaf extract

GC-MS analysis revealed the phytocomponents from the methanol extraction of *Datura metal* leaf. Propanal, 2,3-dihydroxy-, (S) compound was identified at 13.298 min with molecular formula of $C_3H_6O_3$ and molecular weight 90. N-Hexadecanoic acid was observed at 18.595 min with molecular formula of $C_{16}H_{32}O_2$ and molecular weight 256. Phytol was observed at 18.920 with molecular formula of $C_{20}H_{40}O$ and molecular weight 296. 13-Tetradece-11-yn-1-ol was observed at 20.256 min with molecular formula $C_{14}H_{24}O$ and molecular weight 208. Pseudosarsapogenin-

5,20-dien methyl ether compound was observed at 23.312 min with molecular formula of $C_{28}H_{44}O_3$ and molecular weight 428. 2,2,4-Trimethyl-3-(3,8,12,16-tetramethyl-heptadeca-3,7,11,15-tetraenyl compound was observed at 24.062 min with molecular formula $C_{30}H_{52}O$ and molecular weight 428. 2-methyl-6-methylene-octa-1,7-dien-3-ol was observed at 25.013 min with molecular formula $C_{10}H_{16}O$ and molecular weight 152. Tetradecane,1-Chloro compound was observed at 25.533 min with molecular formula $C_{14}H_{29}Cl$ and molecular weight 232. Cyclopropane, 1,1-dimethyl-2-(1-methylethoxy)-3-(3-methyl-1-pentynyl)- was observed at 26.028 min with molecular formula

Table 3. Phytocomponents identified in the methanolic latex extract of *Datura metal by GC-MS*

No.	Retention time	Compound name	Molecular formula	Molecular weight	Structure
1	13.298 min	2,3-Dihydroxypropanal	$C_3H_6O_3$	90	
2	18.595 min	N-Hexadecanoic acid	$C_{16}H_{32}O_2$	256	
3	18.920 min	Phytol	$C_{20}H_{40}O$	296	
4	20.256 min	13-Tetradece-11-yn-1-ol	$C_{14}H_{24}O$	208	
5	23.312 min	Pseduosarsapogenin-5,20-dien methyl ether	$C_{28}H_{44}O_3$	428	
6	24.062 min	2,2,4-Trimethyl-3-(3,8,12,16-tetramethyl- heptadeca-3,7,11,15-tetraenyl)-cyclohexanol	$C_{30}H_{52}O$	428	
7	25.013 min	2-Methyl-6-methylene-octa-1,7-dien-3-ol	$C_{10}H_{16}O$	152	
8	25.533 min	1-Chlorotetradecane	$C_{14}H_{29}Cl$	232	
9	26.028 min	2,2-Dimethyl-3-(3-methyl-1-pentynyl)cyclopropyl isopropyl ether	$C_{14}H_{24}O$	208	
10	26.388 min	Vitamin E	$C_{29}H_{50}O_2$	430	
11	27.589 min	Diazoprogesterone	$C_{21}H_{30}N_4$	338	
12	28.819 min	2,2-Dibromo cholestanone	$C_{27}H_{44}OBr_2$	542	

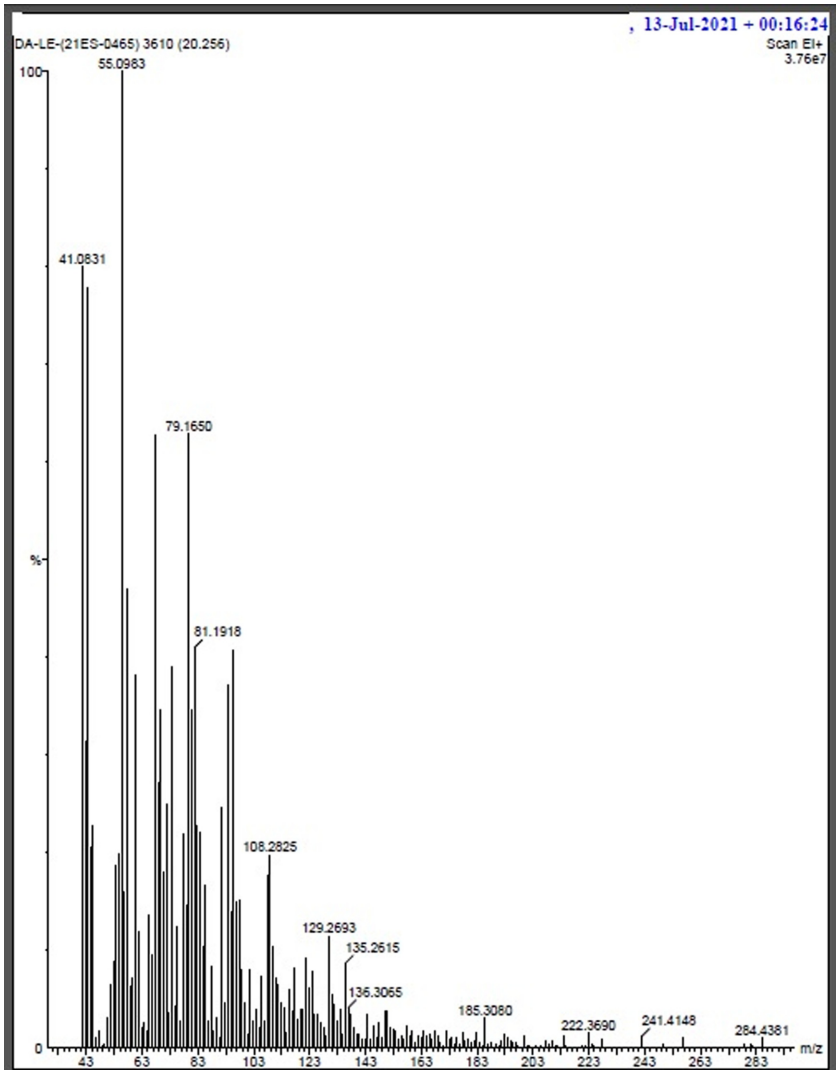
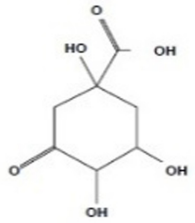
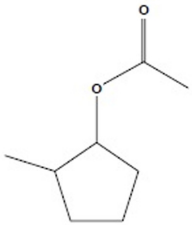
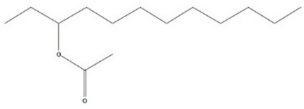
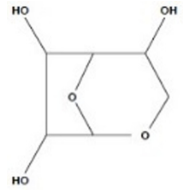
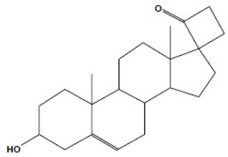
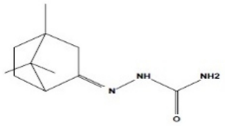
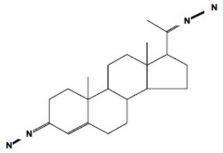


Figure 3. Mass spectra of the methanolic leaf extract of *Datura metal* major compound (13-Tetradece-11-yn-1-ol).

$C_{14}H_{24}O$ and molecular weight 208. Vitamin E compound was observed at 26.388 min with molecular formula $C_{29}H_{50}O_2$ and molecular weight 430. Diazoprogesterone was observed at 27.589 min with molecular formula $C_{21}H_{30}N_4$ and molecular weight 338. 2,2-Dibromocholestanone compound was identified at 28.819 min with molecular formula $C_{27}H_{44}OBr_2$ and molecular weight 542.[21] identified the phytocomponent phytol and Vitamin E from methanol extraction of datura stramonium species of leaf and another reported that phytol identified in methanol extraction of *Carica papaya* leaf [25] which was found in this study also showed anti-microbial, anti-inflammatory, anti-cancer; diuretic activity and Vitamin E showed Antiageing, antidiabetic, anti-nflammatory, anti-oxidant, anti-tumor, anti-cancer, anti-coronary, hepatoprotective, vasodilator.[26] However, the study found that n-hexadecanoic acid, a component of *Datura metal* leaf methanol extraction, is present. The same compound was already identified in methanol leaf extraction of *Calotropis gigantea*, *Ficus benghalensis* and *Carica papaya*.[25] An aqueous papaya fruit extract with the same ingredient was found to have anti-diabetic, anti-cancer, anti-microbial, and anti-cancer activities.[26] The same component phytol, which was previously discovered in a chloroform leaf extraction of the *Datura stramonium* species[27] and methanol leaf extraction of *Carica papaya*[22] and had anti-inflammatory, anti-cancer and anti-microbial activity, was discovered in this work in the leaves of the *Datura metal* species.[28] 13-Tetradece-11-YN-1-OL compound showed hight percentage area in given sample.

GCMS analysis revealed the phytocomponents present in methanol extraction of *Azadirachta indica*. Cyclohexan-1,4,5-triol-3-one-1-carboxylic acid compound was identified at 15.399 min with molecular formula $C_7H_{10}O_6$ and molecular weight 190. Cyclopentanol,2-methyl-acetate, cis was identified at 17.365 min with molecular formula $C_8H_{14}O_2$ and molecular weight 142. 3-Acetoxydodecane compound was identified at 20.481 min with molecular for-

Table 4. Phytocomponents identified in the methanolic latex extract of *Azadirachta indica by GC-MS*

Si.NO	Retention time	Compound name	Molecular formula	Molecular weight	Structure
1	13.298 min	1,3,4-trihydroxy -5-oxocyclohexane -1-carboxylic acid	$C_7H_{10}O_6$	190	
2.	18.595 min	[(1S,2R)-2-methylcyclopentyl] acetate	$C_8H_{14}O_2$	142	
3	18.920 min	Dodecan-3-yl acetate	$C_{14}H_{28}O_2$	228	
4	20.256 min	2,8-dioxabicyclo[3.2.1] octane-4,6,7-triol	$C_6H_{10}O_5$	162	
5	23.312 min	Spiro[androst-5-ene-17, 1'-cyclobutan]-2'- one,3-hydroxy-, (3beta, 17beta.)-	$C_{22}H_{32}O_2$	328	
6	24.062 min	Bicyclo[2.2.1]heptan-2- one, 4,7,7-trimethyl-, semicarbazone	$C_{11}H_{19}ON_3$	209	
7	25.013 min	Diazoprogesterone	$C_{21}H_{30}N_4$	338	
8	28.819 min	N-Hexadecanoic acid	$C_{16}H_{32}O_2$	256	

mula $C_{14}H_{28}O_2$ and molecular weight 228. 1,6-Anhydro-.alpha.-D-Galactofuranose compound was identified at 22.031 min with molecular formula $C_6H_{10}O_5$ and molecular weight 162. Spiro[androst-5-ene-17,1'-cyclobutan]-2'-one, 3-hydroxy-, (3beta,17beta)- compound was identified at 28.439 min with molecular formula $C_{22}H_{32}O_2$ and molecular weight 328. Bicyclo[2.2.1]heptan-2-one,4,7,7-trimethyl-,semicarbazone compound was identified at 28.914 min with molecular formula $C_{11}H_{19}ON_3$ and molecular weight 209. Diazoprogesterone compound was identified at 31.505 min with molecu-

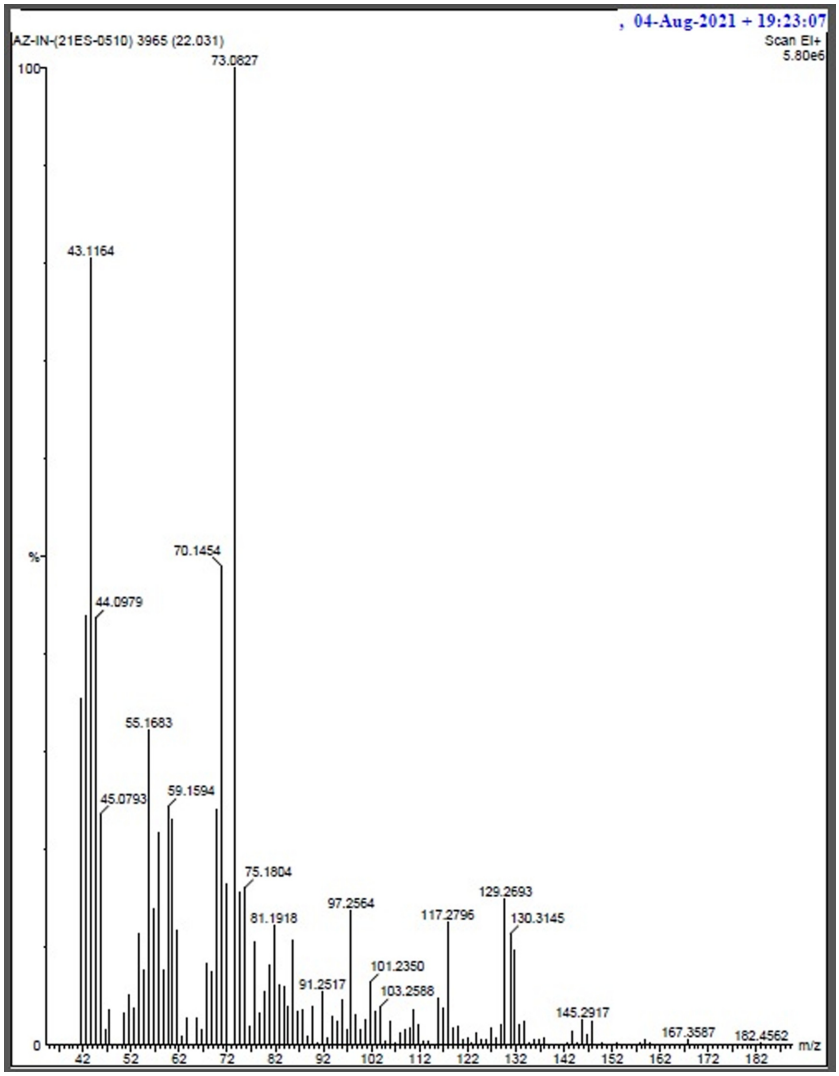


Figure 4. Mass spectra of the methanolic leaf extract of *Azadirachta indica* major compound (1,6-Anhydro-.alpha -D-Galactofuranose).

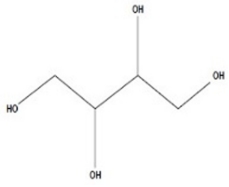
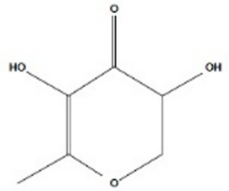
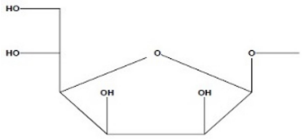
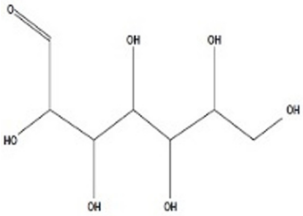
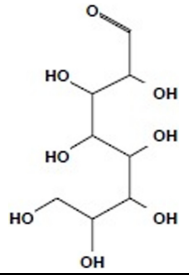
lar formula $C_{21}H_{30}N_4$ and molecular weight 338. N-Hexadecanoic acid compound was identified at 21.576 min with molecular formula $C_{16}H_{32}O_2$ and molecular weight 256.

The Soxhlet apparatus was used to extract methanol from *Azadirachta indica* plant leaves.[29] However, there were differences between the chemicals found in our investigation and those reported in the literature.[30] It has done the methanolic neem leaf extract the compound N-Hexadecanoic acid which showed the various activity like Anti-oxidant, nematicide, 5-alpha-reductase-inhibitor, hemolytic, pesticide, antialopecic, antifibrinolytic. The same compound was identified in this present study. (Figure 4)1,6-Anhydro-alpha-D-Galactofuranose compound showed high percentage area in given sample.

Analysis of Acalypha indica leaf extract

GCMS analysis revealed the phytocomponents present in methanol extraction of Acalypha indica. 1,2,3,4-Butaneterol, [S-(R*, R*)]- compound at RT -12.558 with molecular formula $C_4H_{10}O_4$ and molecular weight 122, 4H-Pyran-4-One, 2,3-Dihydr-3,5-Dihydroxy-6-Methyl compound was identified at 13.178 min with molecular formula $C_6H_8O_4$ and molecular weight 144, .Beta.-D-Mannofuranoside, Methyl compound was identified at 18.130 min with molecular formula $C_7H_{14}O_6$ and molecular weight 194, D-Glycero-D-Ido-Heptose compound was identified at 19.105 min with molecular formula $C_7H_{14}O_7$ and molecular weight 210, Undecanoic Acid compound was identified at 19.550 min with molecular formula $C_{11}H_{22}O_2$ and molecular weight 186, L-Gala-L-Ido-Octose compound was identified at 20.386 min with molecular formula $C_8H_{16}O_8$ and molecular weight 240, Z,Z-6,13-Octadecadien-1-Ol Acetate compound was identified at 20.206 min with molecular formula $C_{20}H_{36}O_2$ and molecular weight 308, Hexadecanol compound was identified at 21.976 min with molecular formula $C_{16}H_{32}O$ and molecular weight 240, Oleic Acid compound was identified at 23.602 min with molecular formula $C_{18}H_{34}O_2$ and molecular weight 282, 3-Decyn-2-Ol compound was identified at

Table 5. Phytocomponents identified in the methanolic latex extract of *Acalypha indica by GC-MS*

No.	Retention time	Compound name	Molecular formula	Molecular weight	Structure
1	12.558 min	1,2,3,4-Butaneterol, [S-(R*, R*)]-	$C_4H_{10}O_4$	122	
2	13.178 min	4H-Pyra,-4-one, 2,3-Dihydro-3,5-dihydroxy-6-methyl	$C_6H_8O_4$	144	
3	18.130 min	Beta-D-Mannofuranoside methyl	$C_7H_{14}O_6$	194	
4	19.105 min	D-Glycero-D-Ido-heptose	$C_7H_{14}O_7$	210	
5	19.550 min	Undecanoic acid	$C_{11}H_{22}O_2$	186	
6	20.386 min	L-Gala-L-Ido -octose	$C_8H_{16}O_8$	240	
7	20.206 min	Z, Z-6,13-Octa decadien-1-ol acetate	$C_{20}H_{36}O_2$	308	

24.517 min with molecular formula $C_{10}H_{18}O$ and molecular weight 154, 7-Hydroxy-3-(1,1-Dimethylprop-2-Enyl)Coumarin compound was identified at 26.918 min with molecular formula $C_{14}H_{14}O_3$ and molecular weight 230.

There were no components identical to those in this study when ethanol extraction of *Acalypha indica* leaf phytocomponents were analysed,[31] and also methanol extraction of whole plant of *Acalypha indica*.[32] hexadecanol phytocompound identified in this study which was already reported in methanol extraction of Carica papaya leaf extract.[25] (Figure 5).Beta.-D Mannofuranoside, Methyl showed high percentage area in given sample. This compound was already reported in methanolic extract of neem which act as a antibacterial agent.[33]

Conclusion

In the present study five compounds in Ricinus communis leaf, five compounds in *Pongamia pinnata* leaf, 12

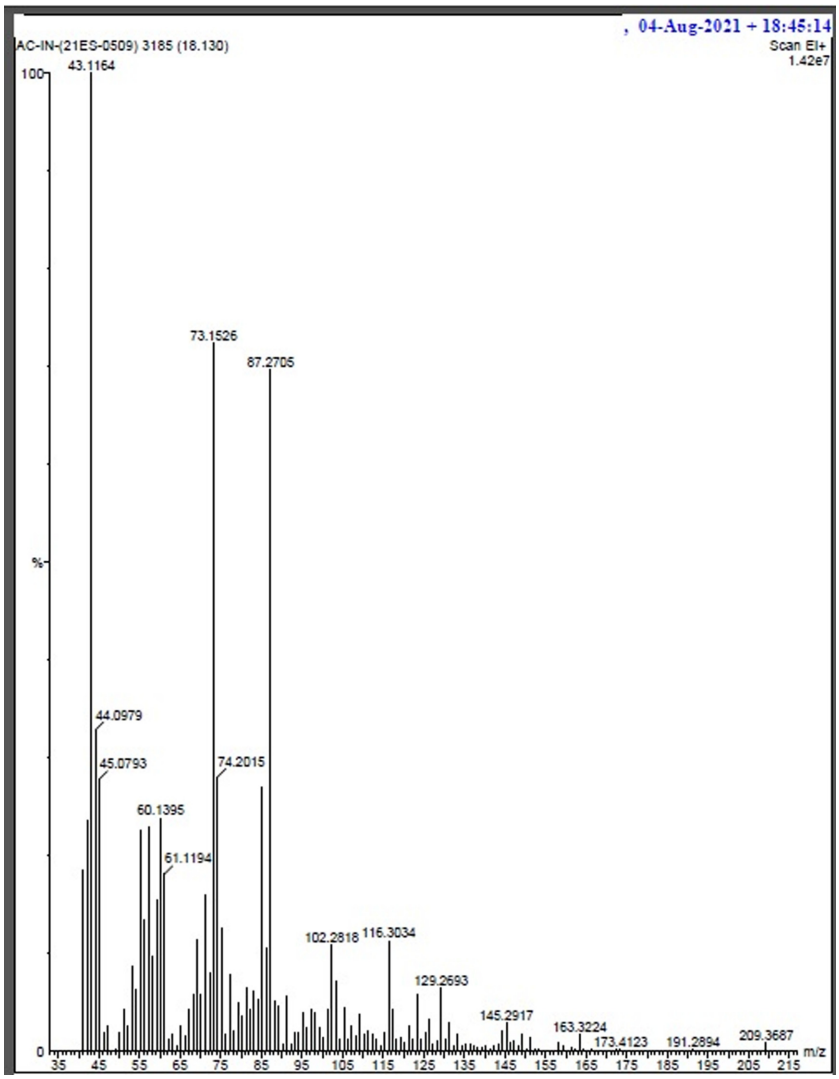


Figure 5. Mass spectra of the methanolic leaf extract of *Acalypha indica* major compound (Beta.-D Mannofuranoside, Methyl).

compounds in *Datura metal* leaf, eight compounds in *Azadirachta indica* leaf, ten compounds in *Acalypha indica* leaf have been identified from methanol extract by GC-MS analysis. The GC-MS analysis of methanol extract revealed that Pentanoic,2-(aminooxy)-, 4-Hydroxy-N- Methypiperidine, 13-Tetradece-11-YN-1-OL, 1,6-Anhydro-.alpha -D-Galactofuranose, .Beta.-D Mannofuranoside, Methyl compounds were considered as major compounds on basis of the percentage peak are shows on the chromatogram. Further studies are needed to isolate the bioactive compounds that could be to formulate new potent drugs.

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