INTRODUCTION
Since prehistoric times, human have been dependent on plant materials for the treatment of various ailments. Approximately one-third of the about 15,000 higher plant species in India are used by poor and tribals for their basic needs like food, fuel, shelter, medicine and clothing etc. The utility of many wild plants is a result of the progressive development of human cultures for various purposes. The prolonged use of wild plants has played an important role in the socio economy of man to the extent that some of them have found place in his rituals and ceremonies. Several flowers, fruits or whole plants have been used for offering in worship. The detailed descriptions of Indian medicinal plants have been described in Charak samhita\textsuperscript{1-3} and Sushruta Samhita\textsuperscript{4-6}. The principle and uses of the medicine practiced by Vagbhatta in 7\textsuperscript{th} century A.D., have been compiled in Ashtanga Hridaya\textsuperscript{1,7}. The detailed descriptions of a large number of medicinal or herbs plants have been described in Indian Materia Medica, which are used in Indian system of medicine i.e. Ayurvedic, Unani, Siddha and Tibetan system of medicine. Modern Allopathic system of medicine and Homeopathic system of medicine are also formed on the basis of plants and herbs.

Health care is very costly in India. Various synthetic drugs have been discovered and are used on large scale but the importance of plant based drugs can not be neglected. Synthetic drugs are very costly and having their side effects. Ayurvedic and Homeopathic medicinal systems
provide more potent and cheaper drugs and free from any side effects, which are easily available in rural areas. The plants based drugs form the backbone of Indian medicinal system. Approximately 80% plant derived products are used in Ayurvedic and Homeopathic system of medicine. Despite technological advancement, plant based drugs are still principle support of 75-80% of the world population for their primary health care because of their efficacy, safety and lesser side effects.

Such a study becomes of immense importance in India where vast literature of medicinal plants and vast medicinal flora are available. About 90% of almost all diseases even cancer and AIDS can be cured by plant based drugs. Plants play a very important role in the concept of new therapeutic agents. Secondary metabolites obtained from medicinal plants plays a very dominant role in synthesizing and designing the analogues of the chemical components leading to the development of effective agents.

The therapeutic importance of plants have been found to be attributed in several cases because of the presence of bioactive steroidal and flavonoidal constituents which are present in them. Flavonoids are polyphenolic compounds isolated from a wide varieties of vascular plants, with over 8000 individual compounds known. Flavonoids are important constituents of the nonenergetic part of the human diet, the average intake being around of 600 mg/day. Among the numerous substances identified in medicinal plants, flavonoids represent one of the most interesting groups of biologically active compounds. They act in
plants as antioxidants, antimicrobials, photoreceptors, visual attractors and feeding repellants. Antioxidant activity of flavonoids, which is due to their ability to reduce free radical formation and to scavenge free radicals.

Flavonoids are formed in plants from the aromatic amino acids phenylalanine and tyrosine, and malonate. Flavonoids generally occur in plants as glycosylated derivatives, and they contributes to the brilliant shades of blue, scarlet, and orange, in leaves, flower, and fruits. Apart from various vegetables and fruits, flavonoids are found in seeds, nuts, grains, spices, and different medicinal plants as well in beverages, such as wine (particularly red wine), tea, and (at lower levels) beer. More specifically, the flavones apigenin and luteolin are common in cereal and aromatic herbs (parsley, rosemary, thyme) while their hydrogenated analogues hesperetin and naringin are almost exclusively present in citrus fruits. The flavonols, quercetin and kaempferol are predominant in vegetables and fruits, where they are found mainly in the skin, with the exception of onions. Flavones are found most often in legumes, including soybeans, black beans, green beans and chick peas.

Flavonoids play different role in the ecology of plants. Due to their attractive colors, flavones, flavonols, and anthocyanidins may act, as visual signals for pollinating insects. Because of their astringency, catechins and other flavonols can represent a defense system against insects harmful to the plant. Flavonoids act as catalysis in the light phase of photosynthesis and or as regulators of iron channels involved in
phosphorylation\textsuperscript{24}. According to some epidemiological studies consumption of flavonoid is inversely correlated with lung cancer\textsuperscript{25}. Possible protective role against coronary heart disease of flavonoid intake (either from fruits and vegetables or red wine and tea) has been reported in four out of six epidemiological studies\textsuperscript{26}. The dietary sources of flavonoids were fruits, vegetables, red wine and tea and they were found to be inversely correlated with the risk of coronary heart disease and stroke. Flavonol, flavone, and isoflavone glycosides are initially hydrolyzed to their respective aglycones\textsuperscript{27-28}. However, glycosides are absorbable, as recently proved by the LC-MS detection of quercetin-3-rutinoside in blood of volunteers after consumption of tomato puree\textsuperscript{29} and of naringin (4', 5,7-trihydroxyflavanone-7-rhamnoglucoside) in urine of subjects who received orally naringin\textsuperscript{30}.

Various flavonoids isolated from plants have been shown to have antiviral\textsuperscript{31-35} and antimicrobial\textsuperscript{36-37}, antiinflammatory\textsuperscript{38-39}, anticancer\textsuperscript{40}, antiallergic\textsuperscript{41}, cytotoxic\textsuperscript{42}, antimutagenic\textsuperscript{43-44}, antimalarial\textsuperscript{45}, antihistamine\textsuperscript{46}, hypolipidimic\textsuperscript{47}, antiherpes\textsuperscript{48}, antihepatoxic\textsuperscript{49-51} and antiulcerogenic effects\textsuperscript{52}.

The biological effects of flavonoids occur mainly through their interaction with biomolecules like DNA\textsuperscript{53} and regulatory enzyme system\textsuperscript{54-58} such as adenosine deaminase\textsuperscript{59}, angiotensin converting enzyme\textsuperscript{60}, cyclooxygenase\textsuperscript{61}, lipoxygenase\textsuperscript{62} AMP phosphodiesterase\textsuperscript{63}, aldol reductase\textsuperscript{64}, HIV-I proteinase\textsuperscript{65} and protein tyrosine kinase\textsuperscript{66}.
Yoshinori Tsuchiya et al.\textsuperscript{67} have isolated Chrysosplenol-B and Chrysosplenol-C which showed potent antiviral activity against rhinovirus. Two flavonoids Santin and Ermanine\textsuperscript{68} isolated from T. microphyllum showed antiinflammatory activity. With the knowledge of structure and biological activity relationship of compounds, it may be possible to synthesize new and better drugs from natural resources which have maximum curative values and less side effect for example, Aspirin is a modified drug of natural drug Salicilin (Salix alba) and used in the treatment of rheumatism and neuralgic pains.

Recent advancement in chemical and biological sciences coupled with highly sophisticated method like paper\textsuperscript{69-70}, column\textsuperscript{71}, thinlayer\textsuperscript{72-73}, chromatography and spectral technique viz. UV\textsuperscript{74-75}, IR\textsuperscript{76-77}, \textsuperscript{1}H-NMR\textsuperscript{78-80}, \textsuperscript{13}C-NMR\textsuperscript{81-82} and Mass\textsuperscript{83} have greatly explained a large number of plant based active constituents for isolation, purification and characterisation of therapeutically active compounds from medicinal plants.

**SOME OF THE RECENTLY INVESTIGATED BIOACTIVE FLAVONOID**

The recently isolated bioactive flavonoids are listed in Table-I.
<table>
<thead>
<tr>
<th>S.No</th>
<th>PLANT</th>
<th>ISOLATED COMPOUND</th>
<th>THERAPEUTIC IMPORTANCE</th>
<th>STR.</th>
<th>REF.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><em>Inula britannica</em></td>
<td>Patulitrin, Nepitrin, Axillardin</td>
<td>Antioxidant</td>
<td>1-3</td>
<td>84</td>
</tr>
<tr>
<td>2</td>
<td><em>Monotes africanus</em></td>
<td>6,8 diprenylaromadendrin, Bonaninol A, 6,8 diprenylkaempferol, Macarangin, 6-(1, 1-dimethylallyl) naringenin, Lonchocarpol A (Senegalensis)</td>
<td>Anti HIV</td>
<td>4-9</td>
<td>85</td>
</tr>
<tr>
<td>3</td>
<td><em>Macura tinctoria</em></td>
<td>Macluraxanthone B, Macluraxanthone C, Dihydrocudraflavone B</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td><em>Physena madagascariensis</em></td>
<td>Remangiflavanone A, Remangiflavanone B</td>
<td>Antibacterial</td>
<td>10-12</td>
<td>86</td>
</tr>
<tr>
<td>5</td>
<td><em>Iris bungei</em></td>
<td>2',5,7-trihydroxy-3, 6-di methoxyflavone</td>
<td>Antiglandular</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2',5-di hydroxy-3, 6,7-trimethoxyflavone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2',5,6'-tri hydroxy-3, 6,7-trimethoxy flavone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>3,3',5'- tri hydroxy, 2',7-dimethoxy flavone</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td><em>Broussonetia-kazinoki</em></td>
<td>Kazinols Q, Kazinols R</td>
<td>Cytotoxic</td>
<td>13(a)</td>
<td>87</td>
</tr>
<tr>
<td>7</td>
<td><em>Dalbergia frutescens</em></td>
<td>Formonetin, Cuneatin</td>
<td>Antigiardial</td>
<td>13(b)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td><em>Vicia amoea</em></td>
<td>Amonin kaempferol</td>
<td>Hyperlipidemia</td>
<td>15-16</td>
<td>89</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quercetin-3-O-α-L-rhamnopyranoside</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Quercetin-3-O-β-D-glucoside</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kaempferol-3-7-O-α-L-dihannmoside</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td><em>Erythrina spp.</em></td>
<td>5-Deoxyglyasperin, 2'-hydroxyneobavis flavone</td>
<td>In vitro anti HIV</td>
<td>17-18</td>
<td>90</td>
</tr>
</tbody>
</table>

*TABLE-I*
<table>
<thead>
<tr>
<th>S.No.</th>
<th>PLANT</th>
<th>ISOLATED COMPOUND</th>
<th>THERAPEUTIC IMPORTANCE</th>
<th>STR.</th>
<th>REF.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.</td>
<td><em>Helichrysum aureonitens</em></td>
<td>3, 5,7-trihydroxy flavone</td>
<td>Antimicrobial</td>
<td>23</td>
<td>93</td>
</tr>
<tr>
<td>12.</td>
<td><em>Cordia verbenacea</em></td>
<td>5-hydroxy, 3,6,7',3',4'-penta methoxy flavone</td>
<td>Antiinflammatory</td>
<td>24</td>
<td>94</td>
</tr>
<tr>
<td>14.</td>
<td><em>Remex chalepensis</em></td>
<td>Remex chalepensis</td>
<td>Antibacterial</td>
<td>28</td>
<td>96</td>
</tr>
<tr>
<td>15.</td>
<td><em>Waldesteinia fragarioides</em></td>
<td>3,5,7,3'-4'-pentahydroxy flavone-3-O-β-D-glucoside</td>
<td>Antiviral</td>
<td>29</td>
<td>97</td>
</tr>
<tr>
<td>16.</td>
<td><em>Chenopodium</em> spp</td>
<td>3,5,7,4'-tetrahydroxy flavone-3,7-dirhamnoside</td>
<td>Hypotensive</td>
<td>30</td>
<td>98</td>
</tr>
<tr>
<td>17.</td>
<td><em>Tamarix diocia</em></td>
<td>5,7,3',5'-tetrahydroxy-6,8,4'-trimethoxy flavone</td>
<td>Antimicrobial</td>
<td>31(a)</td>
<td>99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,7,3',5'-tetrahydroxy-6,4'-dimethoxy flavone</td>
<td>Antiviral</td>
<td>31(b)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>5,7,2',4'-tetrahydroxy-6-methoxy flavone</td>
<td></td>
<td>32</td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td><em>Gardenia fosbergii</em></td>
<td>Penduletin</td>
<td>Antiviral</td>
<td>33</td>
<td>100</td>
</tr>
<tr>
<td>19.</td>
<td><em>Helichrysum aureonitens</em></td>
<td>3,5,7-trihydroxy flavone</td>
<td>Antimicrobial</td>
<td>34</td>
<td>101</td>
</tr>
<tr>
<td>20.</td>
<td><em>Brickellia arguta</em></td>
<td>Quercetagenin 3,7,6,3'-tetramethyl ether</td>
<td>Antiviral</td>
<td>35</td>
<td>102</td>
</tr>
</tbody>
</table>
$$R_1 = \text{OH}, \ R_2 = \text{OH}, \ R_3 = \text{OCH}_3, \ R_4 = \text{O}\text{Glc}$$

(1)

$$R_1 = \text{H}, \ R_2 = \text{OH}, \ R_3 = \text{OCH}_3, \ R_4 = \text{O}\text{Glc}$$

(2)

$$R_1 = \text{OCH}_3, \ R_2 = \text{OH}, \ R_3 = \text{OCH}_3, \ R_4 = \text{OH}$$

(3)
(7)

(8)

(9)
(13a) $R=H$
(13b) $R=OH$

(14)

$R_2 = R_3 = R_4 = R_5 = H, R = CH_3, R_1 = OCH_3$ (a)

$R_3 = R_4 = R_5 = H, R = R_2 = CH_3, R_1 = OCH_3$ (b)

$R_3 = R_4 = H, R = R_2 = CH_3, R_1 = OCH_3, R_5 = OH$ (c)

$R = R_1 = R_5 = H, R_2 = R_3 = CH_3, R_4 = OH$ (d)
R = CH₂ - CH = C(CH₃)₂, R' = H

(15)

R₁ = H, R₂ = H, R₃ = H, R₄ = CH₃

(17)
(18)

(19) \( R = \beta\text{-mannoside} \)

(20a) \( R^1 = R^2 = H \)

(20b) \( R^1 = R^2 = \text{rhamnoside} \)

(21)
(22)

(23)

(24)

(25)
R = Glucoside

(26)

R = Glucoside

(27)

R₁ = Rhamnose

(28)
\[ \text{R} = \beta\text{-glucoside} \]

\[ \text{R} = \text{rhamnoside} \]

\[ (31a) \ R = \text{OCH}_2, \ R_1 = R_2 = \text{CH}_3 \]

\[ (31b) \ R = \text{H}, \ R_1 = R_2 = \text{CH}_3 \]

\[ (32) \]
(33)

(34)

(35)
Thus a significant number of bioactive compounds have been isolated from various plants but still a large number of plants are left for their systematic phytochemical examinations. Therefore authoress took up the challenging task of phytochemical examination of Leguminosae plants.

ABOUT THE LEGUMINOSAE FAMILY

The Leguminosae family is one of the largest family of flowering plants\textsuperscript{103} from which a broad spectrum of complex secondary metabolites have been isolated. It is one of the most important family from the economic point of view because it provide a large number of valuable drugs than any other family\textsuperscript{104}. The Leguminosae family is especially rich in flavonoidal constituents.

Earlier workers have been reported some flavonoidal constituents from Leguminosae plants which are given in \textbf{Table-II}.
<table>
<thead>
<tr>
<th>S.No.</th>
<th>PLANT</th>
<th>PART</th>
<th>ISOLATED COMPOUND</th>
<th>STR.</th>
<th>REF.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>Erythrina senegalensis</em></td>
<td>Stembark</td>
<td>Erthyrinasene galensis (B)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Erthyrinasene galensis (C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td><em>Prosopic spp.</em></td>
<td>Leaves</td>
<td>3-methoxy-5,7, 4' trihydroxy flavone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td><em>Dalbergia ciromandelilana</em></td>
<td>Leaves</td>
<td>Coromanddin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><em>Apuleia lecarapa</em></td>
<td>Wood</td>
<td>3,7,4' - trimethoxy-5,3'dihydroxy flavone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td><em>Distemonanthus benthamianus</em></td>
<td>Heart wood</td>
<td>Quercetagetin-3,7,4' triethyl ether</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><em>Hymenaea courbarli</em></td>
<td>Leaves</td>
<td>5,7,3',4'-tetrahydroxy flavonol-3-O-rhamnoside</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Epicatechin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td><em>Phaseolus trilbus</em></td>
<td>Seeds</td>
<td>Vitexin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Kaempferol</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Luteolin</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quercetin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td><em>Cassia angustifolia</em></td>
<td>Leaves</td>
<td>3,5,7,4'-tetrahydroxy-3-O-β-glucoside</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Isorhamnetin-3-O-β-glucoside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td><em>Lonchocarpus nicoi</em></td>
<td>Roots</td>
<td>Lonchocarpusone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td><em>Desmodium gangeticum</em></td>
<td>Stems</td>
<td>4',5,7-trihydroxy-8-prenyl flavone-4'O-α-L-rhamnopyranosyl- (1→6)-O-β-D-glucopyranoside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td><em>Dalbergia staipulacea</em></td>
<td>Leaves</td>
<td>Luteolin-4'-rutinoside</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td><em>Sphaerantus indica</em></td>
<td>Stems</td>
<td>7-hydroxy-5,6,3',4'-tetramethoxy flavone-7-O-β-(1→4)-α-dinucopyranoside</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
(36)

(37)

(38)

(39) $R = \text{apiose} + \text{glucose}$
(40)

(41)

(42)

(43)
\( \text{(44)} \)

\( \text{(45)} \)

\( R = H \)
\( R = \text{Rutinoside} \)

\( \text{(46)} \)

\( \text{(47)} \)
R₁ = Prenyl
R₂ = 4'-O-α-L-rhamnopyranosyl (1→6)-O-β-D-glucopyranoside
$R = \text{rutinoside}$

\[\text{(52)}\]

\[\text{(53)}\]
Thus a deep sweep in the available literature reveals that there is still enough scope for further systematic phytochemical examinations of biologically active constituents of following Leguminosae plants.

1. *Butea monosperma* O. Kuntze.

2. *Puraria tuberosa* DC.

3. *Neptunia oleracea* Lour.

1. **Butea monosperma O.Kuntze**

   It is commonly known as 'Palash' or 'Tesu' in Hindi. It is a medium size tree 12-15m high with crooked trunk and irregular branches, bark rough and ash coloured. Its leaves are trifoliate. Its petioles are 10-15cm. long, stipules linear, lanceolate, deciduous. Its flowers are large, in rigid racemes 15cm long, three flowers together from the tumid nodes of the dark olive green velvety rhachis. Its pods are stalked, 12.5-20 by 2.5 - 5cm, thickened at the sutures, reticulately veined, argenteo-canescient and stalked 2cm long.

**Distribution**

It is distributed throughout the greater part of India upto 3,000 feet, higher in the outer Himalaya, Khandesh, Akrani up to 3,700 feet, hill of South India up to 4,000 feet and Ceylon.

**Medicinal Importance**

Its roots, bark, seeds, flowers, gum are used in curing number of ailments. Its roots is used to cures night blindness, elephantisis. Its bark
is used as appetiser, aphrodisiac, laxative, anthelmintic, useful in fractures of the bones, diseases of the anus, dysentery, piles and tumours. The seeds are given for snakebite and also useful against hookworms. The flowers are astringent depurative, diuretic and aphrodisiac. The juice is used in phthisis and haemorrhagic. Its gum is a good astringent in diarrhoea and dysentery.

2. *Puraria tuberosa* DC\(^{117-118}\)

    It is commonly known as “Siali” or ‘Bedarikand’ in Hindi. It is a larger twiner having tuberous roots and shrubby stem leaves trifoliate. Its petioles are 10-15cm long, more or less pubescent, stipules 4mm. long, ovate-oblong, cordate. Its flowers are racemes 15-30cm long and pedicles 2-3 mm long, silky-pubescent. Its pods are 5-7.5cm long, membranous, flat, constricted between the seeds and clothed with long silky bristly brown hairs.

**Distribution**

    It is found in western Himalaya to Sikkim up to a height 4000 feet in Kumaon, also found in the hills of Punjab, Mountabu, Bangal and South India.

**Medicinal importance**

    The flower is cooling and aphrodisiac, tonic galactagogue, diuretic, alterative, clears the voice. Ayurvedic system of medicine describes that its flowers cures leprosy, bilousness, diseases of the blood, ‘vata’ burning sensation, urinary discharges.
3. *Neptunia oleracea Lour*\textsuperscript{117-118}

It is commonly known as 'Lajalu' in Hindi. It is an annual, floating, stem elongate, soft, swollen, not much branched, emitting slender fibrous roots in abundance from the leaf and flower-bearing nodes. Its leaves are abruptly 2-pinnate, stipules obliquely ovatecordate, acute, common petioles 3.2-4.5cm long. Its flowers are minute, sessile, in oblong heads 1.3-1.9 cm long, the lower flowers replaced by numerous yellow staminodes 6-8 mm. Its pods are stalked, deflexed, 1.3-2.5 by 0.8cm, slightly curved, oblique at the base, depressed between the seeds, beaked, dry, dehiscing soon by the upper suture. Its seeds are 6-9, obovoid-oblong, slightly compressed, 5 by 4mm and brown in colour.

**Distribution**

It is found in tanks throughout India and Ceylon.

**Medicinal importance**

The plant is used as a refrigerant and astringent. It is also used as emetic and tonic.

Earlier workers have isolated several compounds from above these plants, which are listed in **Table-III**.
### Previously Isolated Therapeutic Constituents

#### TABLE-III

<table>
<thead>
<tr>
<th>S.NO.</th>
<th>PLANT</th>
<th>PART</th>
<th>INVESTIGATION AND ISOLATED COMPOUNDS</th>
<th>STR.</th>
<th>REF.</th>
</tr>
</thead>
</table>
| 1.    | *Butea monosperma*  
*O. Kuntze* | Seed                  | Synthesis of a coumaranone glucoside palasitrain from the seeds.                                                                                                                                                                                                                                                                                                           | 54   | 119  |
|       |                            | Seed                  | (1) nitrogenous acidic compound                                                                                                                                                                                                                                                                                                                                       | 55   |      |
|       |                            | Seed                  | (2) Two new glucoside-monospermoside and isomonospermoside isolated together with butrin, isobutrin, coreopsin, isocoreopsin and sulfurein.                                                                                                                                                                                                                                   | 56-57| 119  |
|       |                            | Seed                  | New lactone-n-heneicosanoic acid 8-lactone                                                                                                                                                                                                                                                                                                                        | 58   | 119  |
|       |                            | Soft resin            | Jalaric esters I and II, Jaccijalaric esters III and IV                                                                                                                                                                                                                                                                                                                 | 59-62|      |
|       |                            | Plant material        | Monospermin                                                                                                                                                                                                                                                                                                                                                           | 63   | 119  |
|       |                            | Seed oil              | Glycerides at palmitic, stearic, lignoceric, oleic and linoleic acids                                                                                                                                                                                                                                                                                                  |      |      |
|       |                            | Roots                 | 4’, 6”-diacetylpuerarin                                                                                                                                                                                                                                                                                                                                             | 64   | 120  |
|       |                            | Roots and tubers      | Tuberasin                                                                                                                                                                                                                                                                                                                                                           | 65   | 120  |
| 2.    | *Puraria tuberosa* (DC)   |                       |                                                                                                                                                                                                                                                                                                                                                                       |      |      |
| 3.    | *Neptunia oleracea* Lour  |                       |                                                                                                                                                                                                                                                                                                                                                                       |      |      |
Jalaric ester I
\[ R = \text{OH}, Z = \text{CH} = \text{CH} \]  
(59a)

Jalaric ester II
\[ R = \text{OH}, Z = (\text{CHOH})_2 \]  
(59b)

Lacciijalaric ester I
\[ R = \text{H}, Z = \text{CH} = \text{CH} \]  
(59c)

Lacciijalaric ester II
\[ R = \text{H}, Z = (\text{CHOH})_2 \]  
(59d)

(60)

(61)

(62)
PROBLEM TAKEN AND WORK DONE

At present, various synthetic drugs have been discovered and are used on a large scale but still no system of medicine in the world can claim to have obtained complete expertise in solving all health problems. Still several diseases like AIDS, cancer etc. exists a great concern for the survival of humanity. There are a large number of medicinal plants which have not been examined thoroughly and hence their curative values have not been recognised.

Thus there is urgent need for systematic investigation of indigenous plants for their potential therapeutic constituents. Therefore authoress took up the challenging task to investigate the following plants
(i) *Butea monosperma* O. Kuntze. (ii) *Puraria tuberosa* DC. (iii) *Neptunia oleracea* Lour., with a view to isolate, purify and elucidate bioactive flavonoidal constituents of greater therapeutic importance. The findings are summarized below.

**CHAPTER-2**

**ISOLATION AND CHARACTERISATION OF A NEW ANTIBACTERIAL FLAVONE GLYCOSIDE: 5,7,3',5'-TETRAHYDROXY -4'-METHOXY FLAVONE-3'-O-α-L-RHAMNOPYRANOSYL-(1→3)-O-β-D-GALACTOPYRANOSIDE FROM THE SEEDS OF PURARIA TUBEROSA DC.**

This chapter includes the isolation and structural elucidation of a new antibacterial flavone glycoside (SL) (yield 0.0223%) molecular formula C_{28}H_{32}O_{16}, m.p. 266-267°C and [M]+624 (EIMS) obtained from the ethyl acetate soluble part of ethanolic extract of seeds of this plant. Its structure was established as 5, 7, 3', 5'-tetrahydroxy -4'-methoxy
flavone-3'-O-α-L-rhamnopyranosyl-(1→3)-O-β-D-galactopyranoside on the basis of various colour reactions, alkaline degradations and spectral techniques.

\[
\begin{align*}
\text{CHAPTER-3} \\
\text{ISOLATION AND STRUCTURAL DETERMINATION OF A NEW ANTIBACTERIAL FLAVONE GLYCOSIDE: 5,2'-DIHYDROXY-3,6,7-TRIMETHOXY FLAVONE-5-O-β-D-XYLOPYRANOSYL - (1→4)-O-β-D-GLUCOPYRANOSIDE FROM THE SEEDS OF BUTEA MONOSPERSMA O. KUNTZE.}
\end{align*}
\]

This chapter incorporates the isolation and structural elucidation of a new antibacterial flavone glycoside (SS) obtained from acetone soluble fraction of the ethanolic extract of the seeds of Butea monosperma O. Kuntze The compound (SS) (yield 0.0239%) had molecular formula C_{29}H_{34}O_{16}, m.p. 268-269°C and [M]^+638 [EIMS]. Its structure was characterised as 5,2'-dihydroxy-3,6,7-trimethoxy flavone-5-O-β-D-xylopyranosyl-(1→4)-O-β-D-glucopyranoside by different colour reactions, alkaline degradations and spectral techniques.
CHAPTER 4

ISOLATION AND STRUCTURAL ELUCIDATION OF A NEW ANTIFUNGAL FLAVONOL GLYCOSIDE: 3,5,4'-TRIHYDROXY-7,3'-DIMETHOXY FLAVONE-3-O-β-D-XYLOPYRANOSYL-(1→2)-O-α-L-RHAMNOPYRANOSIDE FROM THE SEEDS OF NEPTUNIA OLERACEA LOUR.

A new antifungal flavonol glycoside (LS) (yield 0.0212%) molecular formula C_{28}H_{32}O_{15}, m.p. 248-250°C and [M]+608 (EIMS) isolated from the chloroform soluble fraction of ethanolic extract of this plant. On the basis of various colour reactions, alkaline degradations and spectral techniques, its structure was identified as 3, 5, 4'-trihydroxy-7, 3'-dimethoxy flavone-3-O-β-D-xylopyranosyl - (1→2)-O-α-L-rhamnopyanoside.
CHAPTER-5

ISOLATION AND STRUCTURAL ELUCIDATION OF A NEW ANTIFUNGAL FLAVONE GLYCOSIDE: 5,7-DIHYDROXY-3, 6,4'-TRIMETHOXY FLAVONE-7-O-α-L-ARABINOPYRANOSYL-(1→4)-O-α-L-RHAMNOPYRANOSYL-(1→3)-O-β-D-XYLOPYRANOSIDE, FROM THE FLOWERS OF BUTEA MONOSPERMA O.KUNTZE.

A new antifungal flavone glycoside (LT) (yield 0.0234%) obtained from methanol soluble fraction of the methanolic extract of the flowers of this plant which had molecular formula C_{34}H_{42}O_{19}, m.p. 260-262°C and [M]^+ 754 (EIMS). Its structure has been characterised as 5,7-dihydroxy-3, 6,4'-trimethoxy - flavone-7-O-α-L- arabinopyranosyl-(1→4)-O-α-L-rhamnopyranosyl-(1→3)-O-β-D-xylopyranoside by various chemical degradations, colour reactions and spectral analysis.
REFERENCES


