A STUDY ON DIFFERENT PLANTS OF APOCYNACEAE FAMILY AND THEIR MEDICINAL USES
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ABSTRACT
The apocynaceae family is one of the most medicinally diverse families in the plant kingdom and is a rich source for drugs that have found use both traditionally and in conventional medicine. The medicinal activity of these plants was due to the presence of alkaloids which were either indoline alkaloids or steroidal alkaloids. The family Apocynaceae consists of tropical trees, shrubs and vines. Characteristic features of the family are that almost all species produce milky sap. In traditional medicine, Apocynaceae species are used to treat gastrointestinal ailments, fever, malaria, pain and diabetes, including skin and ecto-parasitic diseases. Some are important timber species while many are planted as ornamentals. Non-medicinal uses include food, poisons, fodder, wood, ornamentals, dye and perfume. A total of 4600 species under 415 genera belonging to the family Apocynaceae were collected and identified. Species of Apocynaceae have been reported to possess anticancer and antimalarial properties. Species having cytotoxic activity include those of Catharanthus, Nerium, Plumeria, Tabernaemontana and Ichnocarpus. Catharanthus roseus is the most medicinally important plant in this family due to its use in the treatment of various types of cancers, other agents that have been derived from this family include the alkaloids reserpine and rescinnamine which have been used against hypertension, others are the cardiac glycosides.

Keywords: Activity, apocynaceae, medicinal plants, uses.

INTRODUCTION
Plant is an important source of medicine and plays a key role in world health. Medicinal herbs or plants have been known to be an important potential source of therapeutics or curative aids. The use of medicinal plants has attained a commanding role in health system all over the world. This involves the use of medicinal plants not only for the treatment of diseases but also as potential material for maintaining good health and conditions. Many countries in the world, that is, two-third of the world’s population depends on herbal medicine for primary health care. The reasons for this is because of their better cultural acceptability, better compatibility and adaptability with the human body and pose lesser side effects. From records, most of the used drugs contain plant extracts. Different types of plants used to treat various types of diseases that reveal the most up to date findings in understanding of biological significance of their bioactive compounds used. Recently dramatic changes have taken place in the health care system of world population through the development of science, technology and medical science but till to day 400 crores of people of the world are totally dependent on herbal medicines. Human beings have depended on nature for their simple requirements as being the sources for medicines, shelters, food stuffs, fragrances, clothing, flavors, fertilizers and means of transportation throughout the ages. For the large proportions of world’s population medicinal plants continue to show a dominant role in the healthcare system and this is mainly true in developing countries, where herbal medicine has continuous history of long use. The development and recognition of medicinal and financial aids of these plants are on rise in both industrialized and developing nations. Some contain active ingredients (bioactive components or substances) obtained from plants. Through recent researches, plant-derived drugs were discovered from the study of curative, therapeutic, traditional cures and most especially the folk knowledge of indigenous people and some of these claims and believe of people are irreplaceable despite...
The number of medicinal plants included in the products of traditional medicine in this country is unknown. These plants are important plants of this family because they are used for stabilizing eroding slopes. Generally shrubs are important plants of this family because they are used for stabilizing eroding slopes. These plants have remarkable medicinal and traditional uses.

Medicinal plants are very much related to our health culture. Most of the people of Bangladesh are directly or indirectly depends medicinal plants for health problem. The review aims to understand the possibility of medicinal plants as a sustainable livelihood option. The specific objectives are to explore the use of locally produced medicinal plants, to explore the market of medicinal plants in Bangladesh, to know about of the plant materials were collected for experiment and experimental results have established a pharmacological evidence. The plant materials were collected from the market of medicinal plants in Bangladesh. The leaves were collected for urine analysis. The roots of Carissa carandas L. (Christ's Thorn), Catharanthus roseus (L.) G. Don (Periwinkle), Nerium oleander Linn. (oleander), Plumeria alba L. (pagoda tree), Tabernaemontana divaricata (L.) R. Br ex Roem. (wax flower), Ichnocarpus frutescens (L.) R. Br. (Black creeper) are important plants of this family because these plants shown different activity for different diseases. These plants have remarkable medicinal and traditional uses.

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**CATHARANTHUS ROSEUS L.**

- **Botanical name:** Catharanthus roseus (L.) G. Don.
- **Binomial Name:** Catharanthus roseus (L.) G. Don
- **Local name:** Nayantara
- **Family:** Apocynaceae
- **Status of occurrence:** Very common

**Taxonomic description**

Large armed shrub, with long, stout, sharp, horizontal spines at the base of the branchlets. Leaves 3.8-7.5 cm long, coriaceous, elliptic or obovate, obtuse. Flowers white

- **Habit:** Generally shrubs
- **Habitat:** Gardens where it is cultivated as an ornamental plant.
- **Flower colour:** White and pink
- **Flowering season:** Flowering almost throughout the year.

**Mode of Action**

Healthy plant Red Periwinkle was collected and this used for further phytochemical analysis. Whole plant, flowers leaves and roots.
**Catharanthus roseus (L)**.

**Medicinal uses**
- The plant has been used as a folk remedy for diabetes.
- The root is considered tonic and stomachic.
- Alkaloids also possess hypertensive, sedative and tranquilizing properties. They also cause relaxation of plain muscles and depression of the central nervous system.
- Leaves and latex are given for blood dysentery and piles.

**NERIUM OLEANDER L.**

**Botanical Name:** N. oleander Linn  
**Binomial Name:** Nerium oleander Linn  
**Local name:** Korobi  
**Family:** Apocynaceae  
**Status of occurrence:** Common  

**Taxonomic description**
- **Habit:** Shrub  
- **Habitat:** Grows in the clayey, loamy and sandy soil  
- **Flower colour:** red, purple, pink, and orange colour  
- **Flowering season:** Flowering: January-July

**Mode of Action**
- The stem bark were collected. This extract showed the antibacterial activity.

**Parts Utilized**
- Seed, leaves, flowers and roots.

**Medicinal uses:**
- In addition, the flowers are edible and eaten as fritters, while the heart of the wood is part of a traditional medical preparation taken as a laxative.
- The root bark is de purative and purgative, causing thirst. It is used in the treatment of herpes and syphilis.
- The root bark is used externally as a lotion on syphilitic ulcers, administered as powder macerated in sugar-water, wine.
- The latex from the stem is caustic. It is used for treating ulcers, dartre (skin diseases) and scabies.
- The seeds are used in the treatment of dysentery.

**Plumeria alba L.**

**Botanical Name:** P. alba L.  
**Binomial Name:** Plumeria alba L.  
**Local name:** Kathgolap  
**Family:** Apocynaceae  
**Status of occurrence:** Common  

**Taxonomic description**
- **Habit:** Evergreen shrub  
- **Habitat:** Grown in rich, dry to medium moisture, coastal thickets and limestone forests.  
- **Flower colour:** White  
- **Flowering season:** May-November

**Mode of Action**
- The stem bark were collected. This extract showed the antibacterial activity.

**Parts Utilized**
- Leaves, flowers, roots and seeds.

**Medicinal uses:**
- The flowers are good for inflammations, chronic pains in the muscles and the joints, lumbago, headache, and scabies.
Figure 5: Tabernaemontana divaricata (L.)

Mode of Action
The leaves of Wax Flower were collected and the extract showed anticancer activity.15

Parts Utilized
Root, bark, leaves, sap and flowers.

Medicinal uses

- Grape jasmine is widely used as a medicinal herb in the tropics and the plant may well be classified as a panacea for gastro-intestinal and skin affections.
- The roots are astringent
- A decoction is used in the treatment of diarrhoea and abdominal complaints.
- The roots, leaves, and flowers are all used in the treatment of snake and scorpion poisoning. An infusion is applied as a remedy for jungle fever.
- The roots are used in modern medicine to treat hypertension, headache and scabies.

CONCLUSION
The present study is to explore medicinal aspects of this family and focusing on medicinal plants and their local uses for the healthcare. The ethnobotanical also point out some specific medicinal plant species and their properties to the local inhabitants who are unknown from value of medicinal plants in the environment. The use of herbal medicine for treatments is one component of balancing body systems. In conclusion, it was obtained that different plant of this family have showed different activities like ant-microbial, antioxidant, anti-bacterial, antidiabetic, anti-tumor, anti-inflammatory, anti-asthmatic activity, anti-cancer activity, anti-ulcer activity, wound healing activity, anti-convulsant activity, biological activity, anti-diarrheal activity, anti-pyretic activity, pharmacological activity etc. in human being and animal.

REFERENCES

<table>
<thead>
<tr>
<th>Chemical Constituents</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lupeol</td>
<td>Anti-inflammatory, antioxidant, antibacterial, and cytotoxicity activity.</td>
</tr>
<tr>
<td>Ursolic acid</td>
<td>Analgesic, anti-inflammatory, antipyretic and anti-diabetic activity.</td>
</tr>
<tr>
<td>Beta-Sitosterol</td>
<td>Anti-convulsant and anti-diabetic activity.</td>
</tr>
<tr>
<td>Carinol (Phenolic lignin)</td>
<td>Hypoglycemic, antinociceptive, analgesic, anti-inflammatory and antipyretic activity.</td>
</tr>
<tr>
<td>Carindone</td>
<td>Anti-bacterial, anti-diabetic, analgesic, anti-inflammatory and antipyretic activity.</td>
</tr>
<tr>
<td>Carissone</td>
<td>Hepatoprotective, anti-bacterial, anti-diabetic and anti-convulsant activity.</td>
</tr>
</tbody>
</table>
Table 2: Chemical composition of *Catharanthus roseus* (L).

<table>
<thead>
<tr>
<th>Chemical Constituents</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ursolic acid</td>
<td>Anti-diabetic and anti-oxidant activity.</td>
</tr>
<tr>
<td>Daucesterol</td>
<td>Leukemia, anti-oxidant, anti-diabetic, cytotoxic, biological activity.</td>
</tr>
<tr>
<td>Tetrahydroalstonine</td>
<td>Antinoradrenergic, ATPase activity, anti-convulsant, enzyme activity.</td>
</tr>
<tr>
<td>Beta-sitosterol</td>
<td>Hypoglycemic activity, metabolic activities, pharmacological activity,</td>
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<tr>
<td></td>
<td>anti-diabetic activity, cortisol lowering activity and antiproliferative activity.</td>
</tr>
<tr>
<td>Vindoline</td>
<td>D4H enzyme activity, AVLB synthase activity, dimerization activity,</td>
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<tr>
<td></td>
<td>peroxidase activity, enzymatic activity secologanin synthase activity,</td>
</tr>
<tr>
<td></td>
<td>antioxidant and antidiabetic activity.</td>
</tr>
</tbody>
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Table 3: Chemical Composition of *Plumeria alba* L.

<table>
<thead>
<tr>
<th>Chemical Constituents</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linalool</td>
<td>Antioxidant activity, antimicrobial activity, peptidase and keratinase activity, antioxidative activity.</td>
</tr>
<tr>
<td>n-nonanal</td>
<td>Biochemical activity, wound-healing activity, anti-ulcer activity and antimicrobial activity.</td>
</tr>
<tr>
<td>Phenyl acetaldehyde</td>
<td>Biological activity, anti-inflammatory activity, synthesis and cytotoxic activity, antibiotic activity, antifungal activity, anti-ulcer activity.</td>
</tr>
<tr>
<td>Neryl acetone</td>
<td>Antifungal activity, protective activity, cytotoxic activity, antimicrobial activity, optical activity, antioxidant, and hypolipidemic activity.</td>
</tr>
</tbody>
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Table 4: Chemical composition of *Tabernaemontana divaricata* L.

<table>
<thead>
<tr>
<th>Chemical Constituents</th>
<th>Activity</th>
</tr>
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<tbody>
<tr>
<td>Alpha-amyrin acetate</td>
<td>Anti-diarrheal activity, anti-inflammatory activity.</td>
</tr>
<tr>
<td>Alpha amyryl octadecanoate</td>
<td>Anti-asthmatic activity, antidiabetic activity, cytotoxic activity, catalase activity and anti-oxidant activity.</td>
</tr>
<tr>
<td>Taraxasterol acetate</td>
<td>Anti-oxidant activity, anti-diabetic activity.</td>
</tr>
</tbody>
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