

Project Work

Topic :- Medicinal Plants

Timber Yielding Plants

Fire Wood Plants

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INTRODUCTION

Plants have provided mankind a large variety of medicines to alleviate sufferings from diseases. In spite of biotechnological advancement and genetic engineering tech. which provided spectacular advances in the field of synthetic drugs, the traditional drugs of plants origin have still retained their importance.

The importance of plant products in modern medicine even in highly advanced societies can be seen as their prescriptions contain about 85% medicine obtained from crude plant material or plant extract. Examples of plants having medicinal properties

1. *Sesquialteria marmelos* (Beal)
2. *Citrus limon* (Lemon)
3. *Azadirachta indica* (Neem)

Serial No.



Bael

Bael

Botanical name :- Seleg Marmelos

Family :- Rutaceae

The Bael is large tree, 8 to 10m in height. It has a big stout trunk, unusual branches with long, straight outgrowth, aromatic leaves, sweet scented and greenish-white flower. The fruit is wood and smooth 5 to 15cm in diameter. It has numerous seed which are densely covered with fibrous hair and are embedded in a thick aromatic pulp. The flesh is eaten fresh or dried.

Uses:

- 1) Ripe bael fruit is regarded as best of laxatives. It cleans & tones up the intestine.
- 2) The unripe or half ripe is perhaps the most effective remedy for chronic diarrhoea and dysentery where there is no fever.
- 3) Bael fruit taken in the form of a beverage also great healing properties on account of its mucilage content. This forms a coating on the stomach mucosa and thus helps heal ulcers.
- 4) A medicated oil prepared from bael leaves gives relief from recurrent colds.

Serial No.



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LEMON

Botanical Name: Citrus limon
Family : Rutaceae

The leading acid citrus fruit, because of its very appealing colour, odour and flavour, the lemon, Citrus limon. The true lemon tree reaches 10 to 20 ft in height and usually has sharp thorns on the twigs. The alternate leaves reddish when young become dark green. The mildly fragrant flowers may be solitary or there may be 2 or more clustered in the leaf axils. The fruit is oval with a ripple-like protuberance at the apex, the peel is usually light yellow though some lemons are variegated with longitudinal strips of green and yellow or white.

Medicinal Uses:

1. Lemon juice is widely known as a diuretic, antiscorbutic astringent and febrifuge.
2. In Italy, the sweetened juice is given to relieve gingivitis stomatitis and inflammation of the tongue.
3. Lemon juice in hot water has been widely advocated as a daily drink and prevention of the common cold, but closes have been found to erode the enamel of the teeth.

Serial No



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NEEM

Botanical Name: Azadirachta indica
Family: Meliaceae

Seed oil contains norterpeneoids, odour of the drug is due to sulphur containing compounds known as 3,5 diethyl 1,2,4 thithioles.

Uses:

1. It is used as antipyretic and hypoglycemic agent.
2. It is also used against toxicity and anti-fertility.
3. Mature leaf extract used in reducing serum cholesterol level.
4. Fruit seeds, bark, leaves, root and seeds oil are used as general antiseptics.
5. It is used for treatment of urinary disorders, diarrhoea, skin disease, infected burns, hypertensive.



Aloe vera

Botanical
Family

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Medicin

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ALOE

Botanical Name: *Aloe vera*
Family : *Liliaceae*

The health benefits and medicinal uses of aloe vera are extremely far reaching studies have proven that when aloe vera is taken daily it can increase the life span of mammals by 20% which translates to around 10-15 years for most of mankind.

Aloe vera gel, juice, sap, extracts, pills and tablets, assuming they are of high quality, have potentially great health benefits on the human body.

Medicinal Uses:

1. It is used in skin treatment.



Mint

Botanical Name
Family

All mint
ennial herbs.
producing
a perennial
much branched

Uses:

- It is known
- Commercial
- The oil of
- methos.
- It is cryst

MINT

Botanical Name: Mentha arvensis

Family : Lamiaceae

All mints are aromatic are aromatic perennial herbs. These possess and underground rootstock producing runners, generally known as suckers. It is a perennial herb, 0.3 to 1m in height. It possesses a much branched creeping rhizome.

Uses:

1. It is known as Japanese mint.
2. Commercial oil is derived from this variety.
3. The oil obtained after distillation contains 70-92% menthol.
4. It is crystallized under refrigerated conditions.



Bakas

Botanical
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BAKAS

Botanical Name: Adhatoda vasica

Family : Acanthaceae

Adhatoda vasica, also known as malabar nut tree is part of the Acanthaceae plant family. It is small evergreen sub-herbaceous bush, white flowers commonly in open plains, especially in lower Himalayas, India.

Uses:

- (1) Adhatoda vasica was traditionally used by at the time of delivery because of its uterotonic activity.
- (2) Adhatoda vasica is used for ft. bleeding due to idilopathic, thrombocytopenic (blood does not have enough platelets) to stop bleeding.
- (3) It used to cure allergic, asthma, often combined with the herbs Albizia, Baical, skullcap, eyebright and Tylophera.
- (4) Adhatoda vasica cure cough and breathlessness.
- (5) It cure acute and chronic bronchitis often combined with the herbs licorice and Marshmallow for smoothing respiratory tract.

DATURA

Botanical Name: Datura stramonium
Family : Solanaceae

Datura stramonium has various medicinal uses. The herb is called Dhatura in Sanskrit and is a very important ancient herb. It has religious importance also its flowers are believed to be associated with Lord Shiva.

Uses:

1. Datura is used internally to cure bronchitis spasms in asthma.
2. The leaves of the herb are used to cure pain and also enhance healing process.
3. The herb is used externally as a poultice in curing abscesses wounds, treating fistules and severe neuralgia.
4. It is an excellent cure for heart diseases and cures cardiac pains, palpitation, distress and cardiac disorders.
5. Its fruits is used to cure bilious and phlegmatic type of malarial fever.
6. Fruit juice is applied to scalp to get relief from dandruff and hairfall.
7. Seeds are used to treat stomach problems as they have anti-inflammatory, anthelmintic and analgesic properties.

ARJUN

Botanical Name: Terminalia arjuna
 Family : Combretaceae

Tree upto 25m high, bark grey, smooth, leaves are sub-opposite oblong or elliptic oblong, glabrous, often inequilateral, margin often crenulate. Flowers are white. Fruits are 2.3-3.5cm long fibrous, woody with 5 hard wings, striated with numerous.

Uses:

1. It is cardiostonic thus providing nutrition to heart muscles and strengthening them. It normalizes the distribution rhythms of heart and also reduces the heart rate.
2. It is useful in urinary tract infections and reduces the burning micturition because of its diuretic action it was found to be helpful for renal or urinary tonic.
3. Its bark is anti-ischemic, cardiac protective and cardio-tonic.
4. It prevents the oxidation stress, myocardial injury and hemodynamic effects induced by ischemic reperfusion injury.
5. T. arjuna demonstrated antioxidant and nitric oxide inhibiting activation Arjlligenin was found to be the most active as direct free radical scavenger.

Amla

Botanical Name: Emblica officinalis

Family: Euphorbiaceae

Amla has a medium sized tree which ranges from 20-25 foot. It possesses yellow-coloured flowers that blossom from feb. to may. Its fruit is greenish yellow in appearance, which is available from oct to April.

1. It is applicable in decreased appetite, indigestion, acidity, constipation, gastric troubles and flatulence. It also helps in restoring mouth taste and promotes salivation.
2. It keeps check on all the toxins in the body circulation in the blood moreover it also checks the plaque formation in arteries as it possesses tickt rassa.
3. It gives very good results in chronic, childhood and allergic asthma and tuberculosis.
4. It also works as brain tonic and helps to grasp thing easily. It makes our sense organs work well and makes our reflexes sharp. It is also helpful in maintaining calmness in mind and suppresses mental tensions and stress.
5. Its internal use as well as its the local application on scalp gives good results in hair loss.

INTRODUCTION

The wood is defined as the main strengthening and water conducting vascular tissues in stem and roots of plants. Its use as fuel is as old as human civilisation. It has been estimated that about 1.7 billion m^3 of wood was consumed as fuel in 1984. About one third of the total consumption of fuel wood is made in developing countries in Africa and Asia. In India alone, about one eighth of the total fuel wood of the world is consumed. About half of world population still depend on wood for cooking and heating. In addition, the fire wood is also utilised by road side tea and snack stalls, restaurants, bakeries and various collage industries.

INTRODUCTION

Timber wood or commercial wood generally refers to the solid and homogenous secondary xylem of the dicotyledons and gymnosperm. It has many uses. It is used as fuel, as building material and as raw material for paper, plastic and many other industries. Use of wood as building material is promising and advantageous because of its inexhaustible supply and other important property such as weight, strength, elasticity, toughness, durability and poor conduction of heat electricity and moisture.

Examples of some timber yielding plants.

- (i) *Shorea robusta* (Sal)
- (ii) *Dalbergia sissoo* (Shisham)
- (iii) *Tectona grandis* (Teak)
- (iv) *Cedrus deodara* (Deodar)
- (v) *Pinus roxburghii* (Pine)
- (vi) Bamboo species.

SAL

Botanical name: Shorea robusta
Family : Dipterocarpaceae

It is a large gregarious resiniferous tree with a straight bole bearing ovate-oblong, leathery leaves, 10-30 cm x 5-18 cm. The small yellowish flowers are born in axillary or terminal panicles. The sapwood is whitish but the heartwood ranges from light brown to brown, turning dark reddish or brown on exposure.

Uses :

1. Most extensively used for constructional purposes in North East and central India.
2. Heart wood is very Hard, heavy and extremely tough being one of the most durable timber.
3. It is one of the best sleeper wood of India.
4. Used for constructional purposes such as beams, flooring piles, bridging railway stations, carts, tool handles.

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Shisham tree: *Acacia senegal*
Leguminosae



Shisham

It is extensively used for construction of houses and for the manufacture of charcoal. The wood is very hard, heavy and not easily split. It is one of the best sleepers used in India for the construction of railways and as posts for telegraph lines.

SHISHAM

Botanical Name : Dalbergia sissoo
 family : Papilionaceae

Dalbergia is a genus of tropical trees providing a valuable dark timber. Dalbergia sissoo is important Asian species and along with India rosewood ranks amongst the finest of India's cabinet and furniture wood's the former occurring through-out the sub-Himalayan tree tracts from Ravi to Assam upto 1530m.

Dalbergia have pinnate leaves with an uneven number of leaflets and panicles of small, yellow or white papilionaceous flower. In sissoo the sapwood is white to brownish in colour white the heartwood is golden brown to dark brown. An average weight of $800-850 \text{ Kg/m}^3$. The wood structure is diffuse porous, growth rings may not always be visible.

Sissoo, like Indian rosewood, is a high class furniture and cabinet wood. It is valued as a constructional and general purpose timber, being used for railway sleepers, musical instruments hammer handles, shoe heels, hookan tube and tobacco pipes. Sissoo is good for charcoal making. Rosewood gives an attractive figure when sawn.



Tea

TEAK

Botanical Name: Tectona grandis
Family: Verbenaceae

Teak is unquestionably one of the most famous timbers in the world and is renowned for its dimensional stability changing little with fluctuations in temperature and humidity. Extremely durable and hard, the wood resists decay even when unprotected by paints or other preservatives. In India, teak forests cover an area of about 7,276,000 ha.

Teak is a large deciduous tree upto 305m in height with a girth of 2.4 to 4m and a probable age of over two hundred years. Teak branches are pubescent, four angled and bear large opposite or whorled, broad ovate leaves that are 0.6 to 0.9m long. The minute white flowers are borne in large panicles at the tip of branches. It is hard but not very difficult to work and takes an exceedingly good polish.

The uses of teak are too well known and too numerous to mention. It is one of the best timbers in the world and used as a standard for comparison of other timbers. It is chief railway carriage & wagon wood of India. In ship building, it is in a class by itself even superior oak. Its wood is used in house construction, bridge building, cabinet making, turnery plywood and other decorative surfaces.

TEAK



Deodar

DEODAR

Botanical Name: Cedrus deodara
Family: Pinaceae

The name cedar is applied to several very different kinds of unrelated trees & shrubs. Most specialists use any one of the four species of the genus Cedrus deodara is a large, handsome, evergreen tree with wide spreading horizontal branches that give the cedars their characteristic skyscraper appearance. The slender male cones are borne singly and stand erect. From a distance they look like bright candles as they are a glowing yellow in colour. The female cones are barrel-shaped.

The sapwood is white but the heartwood is light yellow turning brown on exposure. The wood is straight grained, having a moderately fine and uniform texture. The timber is very durable and is rarely attacked by white ants & fungi.

The primary use of untreated sleeper being its use as a constructional material, it is extensively employed for beams, posts, doors and window frames, bridge construction, carriage and wagon building. Other uses include furniture, carving, packing, cases, brush, backs and pattern wood.



Pine

PINE

Botanical Name: *Pinus roxburghii*
Family: Pinaceae

It is commercially pine timber. The important species are *Pinus roxburghii* [Hard pine], *Pinus wallichiana* (Soft pine) are the 2 most popular and best known spp. It grows in the outer hill ranges of Sikkim and valleys of Himalayas.

Uses

1. Wood is mainly used for purposes where strength is not required.
2. Used for matches, crates, boxes and rough carpentry work.
3. The hard pine are used in construction of buildings, bridges, ships etc.

BAMBOO

Botanical Name :- Bambusa
Family :- Poaceae

The several genera of Bamboo are Bambusa, Arundinaria and Dendrocalamus. These are spread over 10 million hectares in Northeastern India, Western Ghats and Andamans.

1. Stem used in house construction, ladders, fencing tool handles, musical instruments, furniture, cooking vessels, pipes.
2. Used in toys, poles.
3. Also used for rope making cordage.
4. Bamboo strips of stem used for floors and roofs, mats, chairs, cages and containers.
5. Bamboo pulp provide raw material for paper industry.
6. Bamboo pickle is also available.

FIRE WOOD PLANTS

These are the plants used as fire wood for cooking and heating purpose.

1. *Dalbergia sisso* (Shisham)
2. *Azadirachto indica* (Neem)
3. *Syzgium cumini* (Jamun)
4. *Shorea robusta* (Sal)



Jamun

JAMUN

Botanical name: Syzygium cumini
Family: Myrtaceae

The jambolan is fast growing reaching full size in 40 years. It ranges upto 100 ft in India and Oceania. Trunk usually forks into multiple trunks a short distance from the ground. The bark on the lower part of the tree is rough cracked, blacking and discoloured. Further up it is smooth and light grey. The leaves are opposite, long, oblong, oval or elliptic blunt or tapering to a point at the apex. The fruit in clusters of just a few or 10 to 40 is round or oblong turns green to light-magenta then dark purple or black as it ripens.

Uses:

1. Medicinally, the fruit is stated to be astringent, stomachic, carminative, antiscorbutic and diuretic.
2. Cooked to a thick jam, it is eaten to allay acute diarrhoea.
3. The juice of the ripe fruit or a decoction of the fruit or jambolan vinegar may be administered in India in cases of enlargement of the spleen, chronic diarrhoea and urine retention.