

## MODULE 34 - COMMON AVENUE TREES

### OBJECTIVES

By the end of this session, the learner will be able to:

1. Know about common avenue trees
2. Learn about the different parts of trees
3. Identify the important characters of a particular tree species
4. Know about the ecological importance of the tree
5. Know about the conservation status of the tree species.

### SUMMARY

Trees are a very important component of the ecosystem. They are essential for a healthy and beautiful environment. They play a great part in making the surroundings colorful and refining our minds. A woody plant that produces one main trunk and more-or-less elevated head is called a tree. Trees are generally found in forests but due to their aesthetic values and ecological importance trees are planted along roadsides and in gardens for their beauty and shade. Apart from their ornamental value, they also provide food to a large number of herbivores. They also play an important role in the control of air pollution. In order to conserve, protect and appreciate their importance we must know about them. This module aims at helping learners to know more about some common trees and their importance.

### TRANSCRIPTION

#### 1. Introduction:

This evergreen world is full of varieties of trees. There are many ways to classify them, such as avenue trees, garden trees, forest trees, medicinal trees and so on. Some of the common trees that we come across are mango, neem, peepal, banyan, chir, devdar, mahua, palash, gulmohar, amaltas etc.

A big tall plant, with a woody stem and a rough bark, branching at the top, with leaves at the ends of its twigs, is called as a tree. A tree is more than three meters tall. There are some exceptions to this common definition of trees. Palms do not branch at all, even though they are trees. In other words, it can be said that all trees are perennial, woody plants, with a single, well-developed trunk, branching some distance above the ground.

The type of trees varies according to the habitat and climate of the area. Trees of hilly areas are different from those in a desert. In this module we will learn about some common avenue trees.

#### 2. The Flame of the Forest:

**'The Flame of the Forest'** is a small-to-medium sized, deciduous tree. It is indigenous to India and found throughout the country, scattered in grasslands, jungles

and wastelands. The **leaves** are three-lobed, large, rough textured and conspicuously swollen at the base. It is leafless in North India from January to March.

The tree bears bright, flaming-orange, **flowers** with black, cup-like calyx. The flowers form a gorgeous canopy on the upper portion of the tree, which looks like a flame in the beginning of the hot weather. Hence it is commonly called 'Flame of the Forest'.

**The Pod** of the fruit is one-seeded. The ripe pods are very light and found scattered far and wide in the dry months, with the wind.

**Name:** The Flame of the Forest is also known as 'Palash' or 'dhak'. The Hindi proverb 'dhak ke teen pat' comes from its three leaflets. In Gujarati it is also known as 'tesu' or 'khakra'. Botanically it is called *Butea monosperma*. The term 'Monosperma' means one-seeded. This tree belongs to the family Papilionaceae. The flowers of this family are papilionaceous, that is butterfly-shaped.

**Uses:** Palash is used for the cultivation of the lac insect. Its glassy, ruby-red gum is commercially known as 'Bengal kino'. It is a powerful astringent and used medicinally in the treatment of chronic diarrhea. The leaves of Palash are made into platters and cups. Young leaves are eaten by elephants and buffaloes. The flowers yield a sweet-scented orange color that is used in the festival of colors, Holi, in many parts of the country. The tree is one of the common feed-plants of the 'Common Emigrant' and the 'Peablues' species of butterflies.

**Ecological Importance:** The flowering tree attracts many birds. They visit it for the nectar in the flowers. Parrots, mynahs and sunbirds can be seen feeding on the flowers.

### 3. The Silk Cotton Tree:

The **Silk Cotton** is a tall deciduous tree, with wide-spreading branches. It reaches upto a height of 25 meters. The bark in young stages is covered with sharp, conical prickles, which keep the trees safe from herbivores.

The **leaves** are large, bright green, stiff in texture, with 5-7 leaflets. The leaves remain on the tree for the greater part of the year. This quality makes it one of the best shade-trees in India.

The Silk Cotton tree sheds its leaves towards the end of January and begins **flowering** from February onwards. Its flowers are large, bright crimson colored or red. It comes into flower when the tree is completely leafless. Flowers appear in very large numbers. There are very few trees in the world which can compete with it for its beauty.

The **fruit** is roughly egg-shaped, 10-15 cms long, filled with white silk cotton inside. Its popular name 'Silk Cotton' comes from the silky cotton-like fibre covering its black seeds.

**Names:** In Hindi it is known as 'Semal'. It is also called 'Indian Kapok'. It has been described under the names of '*Bombax malabaricum*', '*Salmalia malabarica*' and '*Bombax ceiba*'. The generic name 'Bombax' refers to cotton obtained from its seeds and the second name 'salmalia' refers to Sanskrit 'salmali' or 'Shalmali'. The tree is a member of the family Bombacaceae. It is believed that the Hindu god of Creation Brahma, rested under this tree after the creation of the world.

**Uses:** It is a very useful tree. The timber is very soft and used in the manufacture of matchsticks. The silk cotton is used for stuffing mattresses and pillows. The gum obtained from this tree is known as 'moehras' and is medicinally very important in Ayurveda. The young flowers, especially stamens are eaten as vegetables.

**Ecological Importance:** The bright colored, large, nectar-filled flowers are very attractive to many birds like mynas, rosy pastors, crows and sunbirds. The flowers are thought to be pollinated by bats as well. This tree provides food to the larva of Chestnut Streaked Sailor butterfly. In this way, this tree plays a very important role in the food chain and food web of the terrestrial ecosystem. Due to developmental pressure, the silk cotton tree is becoming rare in cities.

#### 4. The Mango Tree

**Mango** is a very common avenue tree in India. It is also planted in gardens. Mango trees are found wild or cultivated all over the peninsular region, from the lower slopes of the Himalayas in the North, to Cape Comorin in the South.

The mango is a **semi-evergreen large tree**, with spreading branches, 6-15 meters high, though in dense jungles it often attains gigantic sizes of over 30 meters.

Mango **leaves** are alternately inserted on the branches. They are 12-30 cms long, 3-9 cms broad, lance-head shaped, tapering at both the apex and the base. The edges are somewhat wavy and the leafstalk 1-5 cms long.

**Flowers** are small and appear in large bunches known as 'more' or 'bour'. The fruit is technically called a 'drupe'. A 'drupe' is a fleshy fruit with a large stony structure in the middle. The fruit is generally heart shaped.

**Name:** In Sanskrit literature the mango is known as 'Amra' and 'Rasala'. In various Indian languages it is known as 'Aam', 'Amb' or 'Amba'. The scientific name of the mango is '*Mangifera indica*', meaning 'The Indian mango-bearing tree'. In English it is known as 'mango'. This tree belongs to the family Anacardiaceae.

**Uses:** The mango is considered as the 'king of fruits'. Ripe fruits are squeezed and used for sucking. Young fruits are sliced and pickled. From ripe mangoes a delicious drink is made with milk and sugar, which is known as 'aamras'. On the other hand, unripe mangoes are used to prepare a salty drink commonly known 'panna'. It is very popular in the summers. The wood is used as timber. The leaves are used for making 'torans', that is leafy decorations hung over the main door of the house during festivals like diwali, dushehra, etc.

**Ecological Importance:** This tree is often infested with a partial stem parasite, *Dendrophthoe fulcata*, commonly known as 'banda'. This plant harms the mango and ultimately results in the death of the branch on which it grows. The ripe and unripe fruits are eaten by many herbivores like monkeys, squirrels, fruit bats and many birds. It is a feed-plant of the Baron butterfly. The Common Jezebel is also found in its vicinity due to the presence of *Dendrophthoe*, which is its feed-plant.

## 5. The Banyan Tree

The **banyan tree** is the most common tree planted along many of the roads in India. It may also be found near temples and shrines and in grounds near villages. It is indigenous in the sub-Himalayan forests, upto 1300 mts and some of the hill slopes in peninsular India. It does not grow in the shade.

Banyan is an **enormous tree**, 20-35 mts high; large, spreading, nearly evergreen. Aerial roots come out from the trunk and enter the ground to form new trunks, thus extending the growth indefinitely.

The **leaves** are broadly oval in shape, leathery, 20 cms long, smooth and shining when old, deep green on the surface and somewhat pale green beneath. The **flowers and fruits** are inconspicuous, very minute, being held together in the fig. The fig is not really the fruit but a sort of pouch that contains hundreds of flowers and fruits inside it. Technically, the fig is a composite fruit consisting of very large numbers of minute fruits. At first it is green and hard, but when it matures it turns red and soft in texture.

The aerial roots of the banyan are its characteristic feature and are known as '**prop roots**'. Initially, they are like pink cotton threads and start thickening once they reach the ground. Once anchored, they grow rapidly, becoming massive props to the overhead branches. Due to these branches the banyan produces specimens of unbelievable spread and age, such as the great banyan tree in the botanical garden of Calcutta, which is roughly around 235 years old.

**Names:** The English name 'banyan tree' seems to have been given by Europeans in the Persian Gulf to a particular tree of this species, under which it was believed that 'Banyas' or Indian merchants assembled to worship and for business. Gradually this name spread to other parts of the world to become its common English name.

In Hindi it is known as 'Barh' and 'Bargad'. Botanically it is called '*Ficus benghalensis*' and belongs to the family Moraceae.

**Uses:** The Banyan is a very important medicinal plant. Its latex is applied to bruises and cracked soles of the feet and to relieve rheumatic pains. An infusion of the bark is drunk as a tonic. The red tips of young aerial roots are eaten to cure obstinate vomiting. The tree is worshipped by Hindus. It is customary to bury a silver coin under the roots of a young banyan.

**Ecological Importance:** The leaves are good fodder and are specially loved by elephants. Goats also cherish the leaves. The ripe figs are eaten by many birds, bats

and monkeys. Birds are known to disperse the seeds through their droppings. Birds eat them and the seeds grow better for having passed through them. If the seeds drop on any other tree, they grow there as epiphytes and cause much damage to the host acting like a strangler. Sometimes the host tree dies due to heavy infestation.

The pollination of the fig is done by a special type of fig wasp. This is a very good example of mutualistic relationship. The wasp and the tree are made for each other. The larva of the common crow butterfly and the common map butterfly feed on its leaves. So, one can see these butterflies around banyan trees.

The tree provides shade from the burning sun in the hotter parts of the country. It functions like a natural air conditioner, running on the energy received from the sun.

#### 6. **Golden Shower Tree:**

**The Golden Shower** is a native of India. It is found throughout the deciduous forests, plains and upto the foothills of the Himalayas. It is a medium-sized tree, reaching a height of 6-15 mtrs. The trunk is short. The **leaves** are dark green in color, compound; each leaf consisting of 4-8 pairs of leaflets. All leaves are shed during the months of March to May. Fresh leaves are often rich-copper in color.

The Golden Shower **flowers** during the leafless period. Flowers appear in long, drooping racemes. Each flower is bright yellow in color. The tree is most conspicuous in the hot months due to the long golden yellow, pendent-like flowers which look like a shower, giving the tree its name 'Golden Shower'.

**Fruits** are 50-60 cms long and 2-2.5 cms thick, black in color when ripe. The fruits are one of the most striking sights on the hills.

The Golden Shower is one of the most beautiful indigenous trees in India. It is very popular all over the country for roadsides and gardens. In the wild the Golden Shower is common in most parts of peninsular India.

**Names:** The English name 'Indian Laburnum' has been given to the Golden Shower because of the similarity in color and profusion of the flower with the European laburnum. In Mumbai, Laburnum Road was so named because of the double rows of this tree. In Hindi it is known as 'Amaltas'. Its scientific name is *Cassia fistula*. 'Cassia' is the old Greek name of Dioscorides, or the wild cinnamon, while 'fistula' in Latin means 'pipe', referring to the shape of the pods. It is also known as the 'pudding-pipe tree'. The tree belongs to the family Caesalpiniaceae.

**Uses:** The Golden Shower is very decorative and planted along roadsides and in gardens for its large and showy flowers. The wood is hard and is used in making carts and agricultural implements. The bark is used for tanning. The dark brown, sweetish pulp of the pods is laxative and is used as a medicine. The Santhal tribe in Bihar uses its flowers as vegetable.

**Ecological Importance:** On account of its medicinal properties, the Amaltas suffers persecution in many parts of the country. Due to removal of its bark, unsightly blisters appear on its trunk, which makes the tree a sorry sight. The flowers are visited by bees for the collection of nectar. The pods are eaten by monkeys. The leaves are the preferred food of the larva of the Common Emigrant Butterfly. Research by ecologists in India indicates that the tree is very sensitive to air pollution. Injury symptoms appear on leaves in the form of marginal necrosis and flecking. The large leaves help in controlling air pollution on roadsides.

## **7. The Gold Mohur Tree:**

**The Gold Mohur Tree** is the most showy and common roadside and avenue tree all over peninsular India. It is a medium-sized tree, 5-10 mtrs tall. The size depends on the age of the tree and the soil on which it is growing.

Gold mohur is a deciduous tree. The **leaves** are twice-feathered and very elegant. They are light green in color. Each leaf may reach upto 50 cms in length. The leaves are compound. Each leaf consists of 10-20 side stalks. Each side stalk bears upto 30 pairs of small leaves, also called pinna or leaflets. All the leaves fall off just before the flowering season, about the middle of February. When the tree is completely bare of leaves, flowers emerge in large numbers. At this time the tree appears like 'the fire tree'.

The **flowers** are arranged in large raceme at the end of branches. Each flower is about 10-12 cms across. It consists of 4 bright scarlet petals, with the fifth or standard petal being slightly larger in size and variegated in red and yellow colors.

The **fruit** is a large pod which is green when young but becomes deep brown and very hard when it matures. Each pod is 50 cms long and 5-8 cms broad, and contains about 80-100 seeds. The seeds are oblong and mottled.

**Names:** The Hindi name 'Gulmohar' appears to be a corrupted form of 'Gold Mohar', since the petals look like gold coins. It is also known as the 'peacock flower' due to its similarity with peacock feathers. The scientific name is *Delonix regia*; 'Delonix' means 'with a clear claw or nail', referring to the shape of the petal, particularly the larger fifth petal; in Latin 'Regia' means 'royal'. At times the tree is also wrongly called as 'Flame of the Forest', though it is actually known as 'Fire Tree'. The tree is grouped under the family Ceasalpiniaceae.

The Gold Mohur Tree is native of Madagascar, but is now one of the most extensively cultivated trees in tropical and sub-tropical climates worldwide, on account of its beautiful flowers. It is now one of the most common avenue trees in India.

**Uses:** The Gold Mohur tree is primarily a decorative tree. Its flowers are attractive to young and old alike. The flowers are slightly sour in taste. They are eaten by children.

**Ecological Importance:** The Gold Mohur tree has a shallow root system and is not capable of withstanding too much of wind. The ground beneath the tree often

becomes bare because its surface roots monopolize all nutrients and water. The leaves provide food to the larva of the Common Nawab Butterfly. The flowers are visited by many birds, especially sunbirds. The tree is sensitive to the harmful effects of air pollution.

## **GLOSSARY**

1. Avenue: A road or walk sides, planted with trees
2. Canopy: The Upper part of the tree, formed by main branches and leaves.
3. Epiphyte: a plant that grows upon another plant (such as a tree) non-parasitically or sometimes upon some other object (such as a building or a telegraph wire), derives its moisture and nutrients from the air and rain and sometimes from debris accumulating around it.
4. Habitat: The natural home of a plant or animal, such as grassland.
5. Indigenous: An organism which is native to a particular area.
6. Leaflet: A part of a compound leaf, such as an Amaltas leaf.
7. Native: A species found naturally in a habitat in which it occurs.
8. Nectar: A sugary liquid that is produced mainly by flowers.
9. Palms: A woody monocotyledon tree. Palm has feathery leaves called 'fronds'.
10. Prickles: A sharp point formed at the surface of a stem or leaf.
11. Raceme: A type of inflorescence, characterised by stalked flowers, borne in aeropetal succession.
12. Tree: A woody plant that produces one main trunk and a more or less distinct and elevated head.
13. Timber: wood harvested from a tree. Timber is used to make houses and furniture.

## **FAQs**

1. What is a tree?

Ans: A woody plant that produces a main trunk, with a distinct elevated head is known as a tree.

2. What are 'avenue trees'?

Ans: Trees which are planted especially along roadsides or walk sides are avenue trees.

3. Define 'Palms'.

Ans: A woody monocotyledon tree, which has feathery leaves, called 'fronds', is known as a 'Palm'.

4. What is 'indigenous species'?

Ans: 'Indigenous species' is one which is local or native to the area.

5. What is 'nectar'?

Ans: It is a sugary substance which is produced by flowers.

6. What are 'prickles'?

Ans: A 'prickle' is a sharp point, formed at the surface of a tree or leaf.

7. What are 'leaflets'?

Ans: Leaflets are parts of a compound leaf. They look like small leaves.

8. Name five important avenue trees.

Ans: Silk Cotton, Mango, Amaltas, Gulmohar and *Cassia siamea*.

9. Which plant is known as 'Flame of the Forest'?

Ans: Palash

10. What do you mean by 'habitat'?

Ans: Habitat is the natural home of a plant or animal.

11. What is the botanical name of 'Palash'?

Ans: '*Butea monosperma*' is the scientific name of 'Palash'.

12. What is 'Bengal kino'?

Ans: 'Bengal kino' is the gum obtained from the Palash.

13. The bark of which tree is covered with prickles?

Ans: Silk Cotton tree.

14. Why is 'Semal' also called the 'Silk Cotton Tree'?

Ans: The seeds of Semal are covered with silky fibre, so it is also known as 'Silk Cotton Tree'.

15. Name two native trees of India.

Ans: *Mangifera indica* and *Ficus religiosa*.

16. What is the scientific name of the Banyan?

Ans: *Ficus benghalensis*.

17. What do you mean by 'epiphyte'?

Ans: 'Epiphytes' are plants which grow upon another plant. They seek only support from the plant on which they grow.

18. Which tree is known as Indian Laburnum?

Ans: *Cassia fistula* or the Amaltas is known as Indian Laburnum.

19. Give the botanical name of Peacock tree.

Ans: *Delonix regia*.

20. Name the epiphyte found on the mango tree.

Ans: *Dendrophthi fulcata*.