**Lecture No. 11**

**Planning and planting of avenues in different locations**

1. **Landscaping highways**

 The landscaping of the National and State highways with trees is an important aspect of beautifying our countryside.  Planting of trees on highways is necessary not only for the purpose of beautification but also for utility and necessity.  The main purpose of roadside trees is to provide shade during the summer. For this purpose, evergreen trees with spreading crowns should be selected.  For wider roads, double rows can be planted, with the outer rows having shade trees and the inner rows with flowering trees.

 The planting of roadside trees started during the time of Emperor Asoka (268-231 B.C.).  The Mughals also planted roadside trees. The roadside trees on the national highways not only provide shade but preferably also have some economic value.  With this in view many of the highways have been planted with trees such as tamarind, mango, *Eugenia operculata* (Syn *Syzygium operculatum),* etc. *Eugenia operculate* has one nuisance value as when its fruits ripe they drop on the road and make it dirty.  The stain of this fruit is also difficult to remove from the clothes.

 *Neem (Azadirachta indica;* Syn. *Melia azadirach) (Madhuca indica;), sisso (Sisham),* and *Shorea robusta (Sal)* are roadside trees of economic value.

 The highway trees should never be planted in mixed avenues, but only one species should be planted for a long distance of the road.  For example, if *neem* trees are planted in pure avenue for a-long stretch, an oil extracting industry can be started on the roadside.  Similarly, *Sal* yields valuable timber and its seeds yield an edible oil which is used as an ingredient in the manufacture of chocolates and other purposes.  If a single species is planted in a pure avenue for miles together this looks more beautiful and gives a wavy appearance to the skyline. In such a case the management and gap-filling also become easier.

 The trees should be planted 12 m apart  in the row and at least 5-6 m away from the edge of the roads, so that they get enough space for spreading and do not interfere with the traffic.  If a road is as wide as 30 m or more, double rows of trees should be planted, rows being spaced 10-12 m apart. The inner row may be of a flowering tree.

 Trees with shallow root system such as *Millingtonia hortensis* and brittle wood as in the case of *Eugenia jambolana, Albizzia lebbek, Cassia siamea*, and Eucalyptus should never be planted on highways, as during storms they get uprooted or branches are broken and casualties may result on the unaware road users, *Neem* and tamarind can grow very well in dry localities.  *Samanea saman (*Syn. *Pithecolobium saman)* and *Dalbergia sisso* grow better in places having a rainfall of 100 cm or above.   Banyans can be planted singly and a little away from the road at some distances, for its cool shade.  *Albizzia procera*is a good roadside tree.  *Polyalthia longifolia,* though not a tree of great economic value, is a very good shade tree and thus suitable for roadside planting.  Thorny trees should not be planted along roadside as the falling thorns may damage the tyres of vehicles. Shrubbery borders with suitable shrubs can be maintained along the highways.  This will improve the scenery.

**Method of planting:**

**1. Mixed plantation**: Planting with different varieties of trees in a mixed avenue against the planting of a single species.  This has got a couple of **advantages**.  The first is that the different plants flower and fruit at various seasons thus enhancing the aesthetic view for a longer time of the year.  The other advantage is that this planting avoids monotony.

**2. Group planting:** A group of 3-4 or more trees are planted at specified intervals instead of planting in avenue.

*Peltophorum ferrugineum, Samanea saman,* and *Saraca indica.*

1. **Landscaping Country Side**

 The planting of trees in the countryside is done on a completely different criterion.  Here more emphasis should be given on economic consideration and utility. The trees planted should provide the villager either with fuel, timber, fruit, or fodder.

* *Babul* is a common tree in the village, which is a cheap source of fuel and is used for the *manufacture* of wheel of bullock-carts.  The bark of this tree is used for tanning leather.
* *Desi (*seedling) mango and jackfruit trees also yield timber for making doors and windows and other household articles such as *charpais, benches, etc.*
* *Dalbergia sisso* is also a good source of timber and fuel.
* *Sal (Shorea robusta)* trees are good for both fuel and timber.
* Some minor fruit trees should be planted along the country road in open spaces. This will not only provide shade but will yield valuable fruits for the villagers.
* Jackfruit is an important fruit tree for arid regions.
* The Toddy or Palmyra palm (*Borassus flabellifer)* is an important tree, which yields a minor edible fruit but the leaves are used extensively for thatching roofs of dwellings.
* Both date and Palmyra palms look beautiful when planted in rows along country roads or on the borders of cultivated fields or when planted in informal groups.
* *Mahua* and large-fruited *Jamuns (Syzygium cumini)* can also be planted.
* The foliage plants yield valuable fodder for the cattle and goats, *babul, Kachnar (Bauhinia), neem,* and *ber (Zizyphus*species) b*er also* produces edible fruits.

 However, ornamental trees should also be planted near the *Panchayat,* schools, churches, mosques, temples and Gurudwaras and along the field boundaries and near the village well or pond.