Forest plantation/ Practical Third stage

Forestry Department

**Type of planting**

1. **Regular planting**: In this type of planting the limited (constant) spacing were used either between planted stocks in the same row or between rows of planting. This method is often for establishing irrigated stands by using mechanisms for soil preparation holes and opening the furrows. This method can be carried out by the following shapes:
2. **Square planting** (quadrate): In this shape of planting the spacing between both planted stocks and planted are rows are equal. This shape is considered as easy shape for application.

Determining number of trees per unit area of artificial stand planted is:

Total number of trees = $\frac{area}{spacing between rows×spacing between trees}$

1. **Rectangular planting**: In this shape of planting either the spacing between planted stocks is more than those between planted rows or vice – versa.

Total number of trees = $\frac{area}{spacing between rows×spacing between trees}$

1. **Triangular planting**: In this shape of planting the spacing between both planted stocks and planted are rows are equal but as alternatively shape. This shape of planting is often used for **roadsides and establishing windbreaks and also may be used for fixation of sandy dunes.**

This shape of planting is preferred on the other shapes of planting because of ability ideal exploited of needed area planting, where as the number of trees per unit area is much more than those on the other shape of planting about 15% more than square shape.

Total number of trees = $\frac{area}{(spacing between rows×spacing between trees)×0.87}$

1. **Irregular planting**: In this shape of planting it’s not possible using constant distances between planted stocks or between planted rows due to topographic of land and existing of natural exposures in planting area as rooks or valley…etc. This type of planting is often used in mountain area and fore mixing and replacing species and for establishing parks.

**According to the Deep of planting stocks**

There are three levels of deeps for planting:-

1. **Shallow planting**: - When the connecting point of shoot with root to be above soil surface for 1- 2cm, this type of planting must be avoided because parts of root system remain outside of soil surface.
2. **Normal planting**: - When the connecting point of shoot with root system is at the level of soil surface for coniferous species, while for deciduous species the last bud existing on seedling stem must be above soil surface.
3. **Deep planting**:- When the connecting point of shoot with root system is lower than soil surface for (1- 2cm), this type of planting is usually used for planting in arid and semi-arid areas and also for planting in sandy soil which is often exposed to erosion.

**Forms of mixing species**

1. Single tree mixing: each species of tree is surrounded by another species of trees from all directions, such as Ulmus sp. with Acer sp.

 The first

 The second

1. Row mixing: each line with planting same species and alternative lines with another species, using two species of them are seciofite, such as different selected clones of Populus.

 The first species

 sciofite

 The second species

1. Strip mixing: Mixed plantations in belts composed of different species. Such as 4 rows of poplars with a spacing of 5 x 5 m are alternating with 4 rows of conifers (spacing 4 x 4m).

 Strip of the first species

 Strip of the second species

1. Patch (group) mixing: in this form of mixing the first species should be surrounded by another in the form of group. This form is often used in disturb and natural forest which cannot be regenerated naturally for any reason.