Agroforestry Third stage

Forestry Department

**Promising Fruit trees for Dry Lands**

Fruit trees are best suited to dry lands, as they are deep rooted and perennial in nature. The choice of fruit trees in dry lands under agroforestry system should consider the following points.

1. Period of maximum growth and fruiting coinciding with period of maximum soil moisture availability and reduced evapo transpiration (Example: Custard Apple, West Indian Cherry and Pomegranate)
2. Resistance or tolerance to drought
3. Deep penetrating root system to tap soil moisture from different soil layers (Example: Wood Apple, Tamarind)
4. Leaf shedding in summer (Example: Custard Apple)
5. Regenerating capacity even after heavy pruning (Example: Pomegranate)
6. Tolerance to saline and alkaline conditions
7. Natural protection of good leaf canopy against radiation and sun scorch (Example: Mango)

**Nursery Raising for Agroforestry and Water Sheds**

**Direct seeding in arid and semi-arid regions**

Direct seeding preferred under certain tree crops and the possibilities have to be ascertained. In general trees which have **larger seeds**, **faster initial growth** and a **good availability of seeds** are recommended for direct seeding.

**Prerequisites for direct seeding in dry lands**

1- Quality of the seeds must be assured

2- Resorting to resowing, as there are possibilities of total loss by high intensity rainfall, birds etc.

3- Advanced field preparation is necessary with essential soil and water conservation measures

4- Synchronized sowing with the onset of monsoon rains

5- Maintenance of optimum depth of sowing and adequate protection from rodents, birds, ants etc.

**Site selection for nursery**

Selection of the area for raising nursery in forestry programme depends on the following criteria:

1- The site selected for establishing the nursery should be fertile and have a little slope (for facilitating easy drainage)

2- The site should have continuous or sufficient water supply

3- Provision of natural or artificial fencing to protect the seedlings from cattle is necessary

4- Partial shading is necessary to safeguard the young seedlings from direct sunlight

5- The site should be proximate for transporting the seedlings

6- The site should be near to the planting site

**Water and its quality for raising nursery**

Nursery site should have been assured with water supply. Water source from either from bore wells or farm ponds could be useful in establishing a nursery in dry lands. In addition to availability, quality of water plays an important role in regions characterized by problem soils (such as salinity and alkalinity) and black soils.

The **pH** requirement of water is between **5.5 and 7.5** and **salt contents less than 400 ppm.** Poor quality water can be improved by addition of **25 grams of Aluminum sulphate for each 100 liters of water**, which can reduce the pH from 8 to 5. For purpose of **increasing the pH, Calcium nitrate can be used**.

**Nursery area**

It is important to assess possible requirement of saplings, which depends on **area to be planted** and **spacing** to be adopted at the time of planting.

In addition to requirement, 20 percent of seedlings have to be raised as extra to make provisions for gap filling (replacement) and losses like transport, handling etc.

The area required for nursery depends on **number of seedlings to be raised**, **place for storage of pot mixture** (tank silt, red earth, and farmyard manure), **sheds** (for pretreatment of seeds) and **water provisions**.

The nursery area also depends on **type** and **size** **of the containers** (polythene bags or mud pots) to be used.

**Smaller sized** bags will help in raising more number of seedlings per unit area. **But** there are also possibilities of **root penetration** in quicker time and **root damage during shifting.**