Agroforestry Third stage

Forestry Department

**Seeds**

Seeds are very important in raising any crop. Seed collection, storage and pretreatment are necessary for raising a good nursery. Seeds should always be collected from genetic plus trees and should have the following characteristics:

1- Good seeds from ripened pods alone need to be collected

2- Seeds should not have any pest and disease attack

3- Mother trees selected for collection should be tall, straight and bell shaped

4- Seeds from deformed, dead, dying and decayed trees also from very old trees or young trees should be avoided as they produce poor quality seedlings

5- Collected seeds should be large, plump and well filled (as light seeds germinate poorly and produce weak seedlings)

6- Seeds have to be collected during the middle of the maturity period (early and late maturing seeds will not be good as compared to the middle period)

7- Seeds have to be collected from the source called as genetic plus trees (which exhibit extra ordinary growth, vigour and stand)

8- Seeds should not collected from isolated trees as they produce less productive self-pollinated seeds

9- Collected seeds should be tested for germination

10- Quantity of seed collection depends on nursery requirement, probable germination percentage, losses etc.

**Seed storage**

Seeds collected should be dried and stored in airtight containers. In case seeds are to be used immediately after harvest, then storage may not be necessary. It is always desirable to have permanent seed storage structures with facilities for ventilation. **Wire nets** can be provided for protection **against rodents and insects**.

For maintaining seed viability the basic needs will be proper **temperature**, **humidity** and **aeration**.

**Cold storage** usually lengthens viability of seeds collected. Seeds should be sown within viability period, which varies from species to species.

**Pre-treatment of seeds**

Most of tree crop seeds have hard seed coat and such tree seeds require pre-treatment for enhancing of germination. Various methods of pre-treatment are recommended for breaking of dormancy and scarifying seeds.

Usually seeds with soft seed coat do not need pre-treatment. Germination of most of tree seeds can be improved by soaking seeds in water for 24 hours. Type of pre-treatment of seeds depends on hardiness of the coat and a few methods are:

* Physical method
* Chemical method
* Biochemical method

**Soil preparation in nursery beds**

Nursery soil for mother bed should have a mixture of soil, sand and manure in ratio of 6:3:1 respectively. Clean organic manure has to be applied for purpose of preventing weed growth.

**Preparation of seedbeds**

Beds meant for germination of seeds are called as seed or germination or mother beds or seed flats. They help to maintain germinated seeds for certain period. As these germinated seedlings are to be transferred to another bed or containers for further growth, rooting medium should facilitate easy lifting (without any damage to roots).

Seedbeds can either be **Raised** or **Sunken** type depending upon species to be raised. Desirable size of nursery bed may be **1 X 10 m**.

During initial formation, nursery site should be leveled and thoroughly ploughed to a depth of 30 to 45 cm. All unwanted materials like stones, weeds, stumps etc. must be removed.

**Optimum time of bed preparation** will be at **the end of rainy season (November to December).** Nursery site can be fenced all around with locally available materials to prevent damage by cattle.

**Sowing in nursery**

Seeds can be sown in prepared beds after necessary seed treatment and drying in shade. Germination beds have to be moderately watered and **seeds are sown** either **Broadcasted** or in **Lines** or **Drills** formed across width of the bed. Seeds sown should be covered to a proper depth with fine earth.

When sowing is done in **hot weather**, seedbed should be soaked well before sowing. Surface soil should be kept moist till germination with fine spray of water from rose can **twice a day (for first 15 days).** Subsequently watering can be done **once in a day with rose can (for next 30 days).** Time of sowing in different tree species varies and most of them are coinciding with the period **January to March**.