

LECTURE - 11

LEARNING OBJECTIVE: TO KNOW ABOUT NURSERY, NURSERY TYPES, IMPORTANCE OF NURSERY AND CRITERIA FOR NURSERY SITE SELECTION

DEFINITIONS

- **Nursery** is defined as an area where plants are raised for eventual planting out.
- **Nursery composition:** It comprises of nursery beds, paths, irrigation channels, etc.
- **Nursery bed** is defined as a prepared area in a nursery where seeds are sown, or into which transplants or cuttings are put. On the basis of the kind of plants growing in them, nursery beds are classified into **Seedling Beds** and **Transplant Beds**.
- A nursery which has only seedlings beds, i.e. in which only seedlings are raised, and no transplanting being done, is called **Seedling Nursery**.
- **Transplant beds** are those nursery beds in which seedlings raised in seedling beds are transplanted before planting out in forest. A nursery which has only transplant beds, i.e. in which seedlings are transplanted in preparation for forest planting is called **Transplant Nursery**.
- In India, separate seedling and transplant nurseries are seldom made; in the same nursery, some beds are seedling beds and others as transplant beds. Generally, whatever is grown in a nursery for planting out is called **Nursery Stock**. This term is also used for plants supplied from a nursery.

IMPORTANCE AND OBJECTIVES

Nursery occupies an important place in artificial regeneration. The increase in artificial regeneration works in general and the efforts to raise fast-growing, short rotation crops involving introduction of exotics in particular, have further increased its importance. The following objectives for which nursery is generally made, clearly bring out its importance:

- 1) Some important species do not seed every year. Plantations of these species can be raised annually only by collecting all available seeds in years of moderate and good seed years and sowing it in nursery to raise seedlings to be planted out in various years.
- 2) Some species grow very slowly and if the seed of these species is sown directly in plantation area, the seedlings are most likely to be swamped by weeds and killed. Therefore, slow-

growing species are generally raised in nursery and planted out only when the seedlings are not liable to be damaged by weeds.

- 3) Success of roadside avenue plantations depends largely on planting tall and sturdy plants which can be obtained from a nursery.
- 4) Plantations of some species when raised by direct sowing are not as successful as when raised by planting. In such cases, nursery is an essential part of artificial regeneration of those species.
- 5) The best method of introduction of exotics, viz. tropical pines, poplars, eucalyptus, etc. is only by planting and therefore nursery is very essential for them.
- 6) Planting of nursery grown plants is the surest method of artificially regenerating poor and barren sites.
- 7) Casualties in plantations have to be replaced either in the year of plantation or in the next year. Sowings done in the gaps are liable to be unsuccessful as a result of suppression from weeds and can not catch up the plants from original sowing. Therefore, replacement of casualties is always done by planting nursery-grown plants or stumps and so nursery is very essential for casualties' replacements.

CLASSIFICATION OF NURSERIES

Nurseries are classified either on the basis of irrigation facility/moisture content or the duration of their use.

A) ON THE BASIS OF IRRIGATION FACILITY NURSERIES ARE CLASSIFIED INTO:

- a) **DRY NURSERY:** It is a nursery that is maintained without any irrigation or other artificial watering.
- b) **WET NURSERY:** It is a nursery that is maintained by irrigation or other artificial watering during the dry periods.

B) ON THE BASIS OF DURATION OF THEIR USE NURSERIES ARE CLASSIFIED INTO:

a) TEMPORARY NURSERY

It is a nursery that is maintained for supplying nursery stock for a short period after which it is abandoned. Normally it is made in the plantation area or in previous year's plantation if it is close by. It is also referred to as **field nursery** which is defined as a temporary nursery found in or adjoining the planting area. As it is intended to meet the requirements of a limited area, it is usually small in extent.

ADVANTAGES OF TEMPORARY NURSERY:

It is usually made in newly cleared sites fairly rich in humus, and therefore does not require any manuring. *Eucalyptus* hybrid nurseries are an exception to the general rule. There is minimum trouble with the weeds, destructive insects and diseases. It enables raising of species in their optimum altitudinal zone in hills. It also enables easy, quick and cheap transport of planting stock without any serious damage or shock.

DISADVANTAGES OF TEMPORARY NURSERY:

As it is made in out-of-way places, proper supervision is not possible. In the absence of irrigation facility, the growth of seedlings is, usually, slow and there is usually heavy mortality in them. It is relatively costlier to maintain as compared to a permanent nursery.

b) PERMANENT NURSERY

It is a nursery that is maintained for supplying nursery stock for a long time on a permanent basis. The duration of services and life of permanent nursery is long and it is maintained till seedlings can be raised in it at reasonable cost. As it is intended to meet the requirements of one or more ranges, it is relatively larger and near to the headquarters of some subordinate for proper supervision. It should be on or near some road for quick and easy transport of nursery stock. As plants are raised year after year for long time, its initial fertility dwindles and it has to be manured regularly. It has facilities for irrigation and shading of plants.

CRITERIA FOR NURSERY SITE SELECTION

- i. Nursery should be selected as carefully as possible with reference to the area to be planted.
- ii. It should preferably be near a Ranger's or Forester's residence for close and regular supervision.
- iii. It should be close to the source of supply of labour to do various works as and when required.
- iv. In order to have good irrigation facility, it should be situated near or slightly below the source of adequate water supply.
- v. Soil should be well drained sandy loam. Clayey soils should not be selected as their aeration and drainage is poor and they are liable to crack during summer.

- vi. As far as possible, it should be made in a newly cleared forest land, with no overhead shade from the south.
- vii. It should never be located in a natural blank.
- viii. In the hills, a gentle slope not exceeding 5° should be selected. If the slope is steeper, cost of terracing increases.
- ix. In the Western Himalayas, northern aspect should be preferred, but towards higher limits of the altitudinal zone of the species southern aspects are suitable, that only up to an altitude of 1200 m; beyond that they become too cold and wet, and so western or south-western aspects are preferred.
- x. Altitudinal zone of the species should also be kept in mind while selecting site for nursery in hills.

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