

## Recent Advances in Nursery Management

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### SUMMARY

Nursery is becoming a good entrepreneurship for agricultural graduates to develop skilled manpower as the Government of India is now emphasizing on 'Job creators instead of job seekers' and hence considering the income potential in fruit crops and the various schemes by government, the area is steadily increasing under fruit crops. In order to meeting out demand for quality planting material of the farmers it becomes necessary to technically manage the nursery.

### INTRODUCTION

In the fruit nursery, grafts or seedlings of various fruit trees are prepared and sold to the farmers for planting in the main garden. The work in the fruit nursery is carried out throughout year and it needs to be done at scheduled time because there is a different conducive period of propagation in various fruit crops and different operations in the nursery should be done scientifically to achieve maximum success. While for better management of the nurseries following points are taken into considerations.

**Selection of site for nursery-** In respect to the ease of transportation of planting material, the nursery should near to the road and availability of water, electricity etc should be there. It is necessary to have enough sunlight and fresh air in the selected place. Also, places with dense trees, which mean insufficient sunlight, should be avoided as much as possible for establishing a nursery.

**Sterilization of beds in nursery-** The seed of some fruit crops like Papaya, Wood apple, Jamun, Ber, Tamarind, Kagzi lime etc. are generally propagated by seed by sowing its seed on the nursery beds, while Jambheri, Rangpur lime, Khirni, Mango (local) seedlings are used as a rootstocks for production of grafts. Hence sterilization of beds prior sowing has paramount importance to prevent fungal infections.

### Precautions to be taken during sterilization

- Beds should be weed free while sterilization.
- Beds should be sufficient wet.
- Chemicals used for sterilization should be taken in recommended quantities.
- Use of banned chemicals should be avoided.
- Beds should be covered after dusting chemicals considering the type of soil.



**Sterilization of beds in the nursery**

**Drainage of excess water-** Drainage of excess water from beds is necessary for healthy and vigorous growth of grafts, so keep slight slope to the nursery beds and do not allow water to stagnate. Proper drainage improves the soil texture by allowing air to circulate around the roots of the plants and also improves the availability of nutrients to the plants resulting in production of disease free plants.

**Filling of seedling bags**—Polythene bags should be filled with a mixture of fertile soil, decomposed FYM and sand. Similarly, changing the mixture in the old bag at a certain period of time is also important and continuous task in the nursery because if the plants remain in the same bag for many years, the growth becomes stunted due to lack of nutrients. At the time of changing the soil mixture, the dried and rotten roots should be removed with the help of scissors and then the plants should be planted in a bag filled with fresh soil mixture and watered quickly.



**Polybags properly filled with soil mixture**

**Proper upkeep in the nursery**- Always keep nursery free from weeds and clean. Protect grafted plants from abiotic factors and take preventive measures to avoid damage from pest and diseases. Always disinfect tools used in the nursery with 1% sodium hypochlorite solution. Apart from this, soil mixture should be treated with fungicide to prevent soil borne diseases.



**Care and cleaning in the nursery**

**Use of mulches in nursery**- It is necessary to use organic and inorganic mulches to conserve moisture and prevent weed growth. The cover protects the plants from high summer and low winter temperatures and also keeps the soil temperature under control. The use of organic mulches will help to prevent soil erosion and increase soil fertility. While choosing a cover it is very important to consider some key factors such as the cover should be cheap, readily available and easily decomposable. There are two types of mulches i.e. Organic mulches includes cow dung, compost, straws, wood husk, sphagnum pitmoss, dried grass etc and inorganic mulches includes polyethylene sheets.

**Use of plant growth regulators in nursery**- It is necessary to use small quantity of PGR's to regulate the physiology of various plants, to resist and to modify certain activities.

**Gibberellins**- used to promote tissue growth as well as seed germination eg. GA<sub>3</sub>.



**Auxins-** Indole Butyric Acid (IBA) is used mainly for induction of profuse rooting in the cuttings and air layered grafts. In addition, Indole Acetic Acid (IAA) and Naphthalic Acetic Acid (NAA) are also used in nursery and mother orchard management.

**Abscisic acid-** It acts as a growth inhibitor and is used to prevent water loss from plants through evapotranspiration.

#### Use of rootstocks in different fruit crops

SN	Name of fruit crops	Rootstocks used
1	Sapota	Khirmi
2	Mango	Local, Polyembryonic viz., Vellaikolumban, Olour etc.
3	Grapes	Dogridge, Ramsay, 110-R, 1613-CE.
4	Mandarin & Sweet orange	Rangpur Lime, Jambheri
5	Aonla	Local or Banarasi

**Collection of scion material for grafting or budding-** While preparing the grafts of any fruit crop, scion material should be collected from genuine, healthy, disease free and high yielding mother tree.

**Plant protection-** Since fruit trees are perennial in nature, planting material must be free from pests and diseases. The nursery should be inspected by experts from Agricultural Universities at least once in every month and suggested measures should be followed with immediate effect.



**Healthy and vigorous seedlings**

**Proper handling of grafts-** The grafts should be kept under supervision in the nursery for at least 6 months and thereafter grafts shows healthy and vigorous growth then only distributed to the farmers for commercial cultivation. While transportation care should be taken that the grafts joint should not damaged.

#### CONCLUSIONS

The seedling nursery may certainly generate employability among the skill personnel and become a good entrepreneurship for youths if it is maintained in scientific way and systematic manner.

#### REFERENCES

- Ghosh, A. (2009). Management and production of plant materials. Greenhouse technology (The future concept of Horticulture). Kalyani publishers, pp. 179-180.
- Lohakare, A.S., S.R. Barkule and G.M. Waghmare (2022). Fruit crop nursery management. Shetibhati Magazine, May, 2022: pp- 18-20.
- Singh, B. (2012). Plu-tray nursery raising technology for vegetables. Protected cultivation of vegetable crops. Kalyani publishers, pp 47-58.
- Waghmare, G.M.(2022). Technical bulletin on nursery management, Department of Horticulture, Vasant Rao Naik Marathwada Krishi Vidyapeeth, Parbhani. pp. 01-80.