

Construction of media preparation facilities

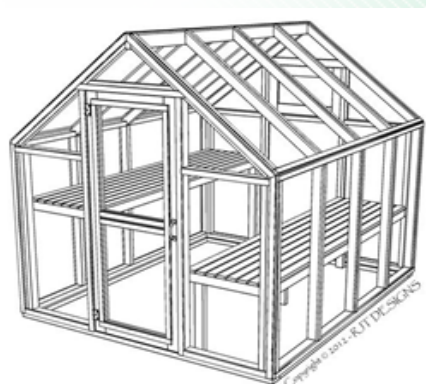
Generally, the nursery should have media preparation facilities where all the media must be sterilized before use, to avoid later problems with seedling diseases.

Construction of Germination shed

This is a small, high-temperature holding room in which seeds are incubated for germination. It can be as simple as a wooden structure covered by a polyethene bag to a concrete glass growth room. Germination in the trays is a process that takes 3-4 days, the growing seedlings are then transferred to a growth room.

Construction of a growing room (Greenhouse)

Modification is made inside the greenhouse to incorporate benches which are holding areas for the growing seedlings. The greenhouse also has misters for irrigation because coco peat as a germination media is light and can spill out of the trays, should a splashing method be used. It's also easier and faster to irrigate the seedlings at the tender stage in this manner. The structure is used to protect the young seedlings from intense sunlight but with sufficient transparency to allow some sunlight to reach the seedlings.



A sketch of a greenhouse structure with benches for holding trays of growing seedlings. Source: bepasgarden.blogspot.com

Construction of Hardening area

Seedlings must be made ready for adverse conditions of the planting site before planting to make them sturdy and hardened. In the nursery, the hardening area therefore should be free from shade to provide the seedlings full exposure to sunlight. It should be elevated from the ground and have good drainage. It is ideal to elevate the seedlings. Aside from regulating the moisture available for seedlings, elevating seedlings will promote aerial root pruning.



Compiled by: Tabu, R., Ndambuki, J., Otipa, M., Ndung'u, J. M., Lelgut, D., Ochieng, V., Odhiambo, H., Ongawa, M., Omolo, P., Nyaga, A., Kirigua, V. and Wasilwa, L.

Edited by: Nyabundi, K.W., Mukundi, K.T., Kinyua, Z., Kivuva, B., Maina, P. and Wanyama, H.N.

Design and Layout: Nogrecia Mnene

For Further Information contact:
The Centre Director, KALRO FCRC Muguga
P.O Box 30148-00100 Nairobi

KALRO/NAVCDP/TOMATO/Brochure No. 080/2024



Greenhouse Nursery Construction and Management





Introduction

A vegetable nursery is a place, whether in the open field or in a controlled environment, where seeds or seedlings of various vegetable crops are sown, tended, and raised until they grow into vigorous young plants ready for transplantation into the main field, garden, or pots.

Nursery site selection

Factors that should be considered for the selection of a nursery site include; the location of the proposed site, soil, climatic factors, topography, economic factors and water supply. These have a major effect on overall success.

Topographical aspects

The nursery should be located on level or gently sloping ground. However, ground with a slight slope not exceeding 3% is recommended for better surface drainage.

Location and accessibility

Locating the nursery near a major road will facilitate the movement of seedlings to and from the nursery. It should not be flooded, not exposed to strong winds and with good light exposure. Good accessibility is a requirement for a nursery area so that delivery of nursery materials and transportation of seedlings to the planting sites is easy and safe.

Water supply

The nursery site should be close to natural water sources, such as rivers, waterfalls, streams, lakes, ponds, boreholes and wells. The water should be clean and free from pollutants and industrial wastes that might be detrimental to plant growth. All water sources to be used in production should be tested.

Space and size

The nursery site should have ample space to accommodate all the nursery requirements. A regular four-sided site, preferably a square, is desirable to minimize the length of the boundary.

4. Labour

Even though some of the operations at the nursery can continuously and effectively be carried out using machines, manual workers nevertheless have to be employed to carry out specific jobs. The nursery should not be far away from settlement areas where workers are available.

Design and layout

A well-designed nursery should have proper roads, office, potting, seed germination and growing areas, water supply, telecommunications, water sprinkler system etc. Consideration should also be given to the construction of storage facilities for nursery equipment, tools, fertilizers, pesticides and other materials

Road systems

Paths, trails and road systems are necessary for the efficient movement of materials and personnel within the nursery. If the total area of the nursery is more than 4.0 ha (10 acres), it is advisable for the nursery to have a proper central road and a perimeter road.

Growing beds

The width of the growing bed should normally be 1m

-1.5 m. The spacing between the growing beds should be 0.5-1.0 m.

Water supply

The amount of water needed depends on the size of the nursery, media used, species to be raised, quantity of seedlings and method of watering to be employed. For permanent nurseries, it is recommended to install an overhead water system (mistlers) by conducting water to the nursery through the pipes and distributing it over the seedlings as a fine spray with a low-pressure system. Adequate water supply and a proper water sprinkler system are extremely essential for a containerized nursery. A pump house should be constructed within the nursery area and near to a water source. All water sources to be used in production should be tested.

Nursery site preparation

Ground levelling

If the topography of the nursery site is not too severe, then it is possible to carry out some earthwork. In any event, all vegetation and top soil must be removed from the nursery site, leaving the exposed subsoil or weathered parent material. All top soil must be stacked in one corner of the site, which later on can be used as the potting medium during potting activities. The ultimate requirement is an almost level area, having a gradient of about 2 - 3, but not exceeding 5°. It is important to clear the ground vegetation in the nursery site as well as all big trees in the site that might interfere with future nursery operations and seedling growth.

Construction of drainage

The construction of a proper and good drainage system is very essential in a nursery. If this is not carried out, then there is every possibility that the nursery area will become water-logged, or will even get flooded, during heavy and continuous rainfall. Be a breeding ground for molluscs and other pests.