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Terrace Gardening – An Overview

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Abstract

In urban areas, land is a limiting factor and hence growing of vegetable crops and spice crops are raised in limited available area or in terraces of buildings. Cultivation of crops in pots or in cement bags is also feasible in cities. Likewise, nowadays our daily life is filled with stress in order to get relax and to break our routine monotonous activities in our life we need to do something which will cherish our minds, release our stress without much of mental and physical strain is gardening. Finally, terrace gardening is more than just a person-centric activity. When you set up a terrace garden, you also clean up your environment and inspire your neighbours and friends to do their own bit for it as well.

Introduction

The art of creating the greenery and its maintaining on the roof top is known as “Roof gardening” or “Terrace gardening” (Delburgo, 2006). At present people love to put a small green lustre in their terrace top. Terrace gardening provides opportunity to grow plants under sun and shade loving plants. Shade loving plants can be grown under shade by erecting net house in the terrace. Always beginners should start growing plants, which are native to the region since those plants adopt well in the climatic condition. Next, size of the garden, it depends on the available terrace or roof space in a building.

If we are planning for a garden in a roof top garden we need to check strength of the building, withstand water stagnation, provision of proper slope for drainage, if not so we can spread polyethylene sheet with 800 gauge thickness on the roof before making beds for growing greens, flower beds or lawn *etc.* so that the excess water, spill of media from the pot can be avoided. Further a healthy garden must have a variety of plants. Biodiversity attracts essential pollinators. When we cannot avoid utilizing open spaces on the ground for the construction of buildings and other utilities, then at least the open spaces available above these buildings can be utilized for plantations and gardens to minimize the ecological imbalance (Patel *et. al.* 2019).

The unique advantages of a terrace garden are-

- Supply fresh fruits and vegetables high in nutritive value.
- Supply fruits and vegetables free from toxic chemicals.
- Help to save expenditure on purchase of vegetables.
- Awareness is created among children on dignity of labour.
- Vegetables harvested from home garden taste better than those purchased from the market.

Things required to start a terrace garden are space, sunlight, water, media, containers, seeds and plants organic manures, tools *etc.*

Soil Media

Soil media is the prime factor for the growth of the plants. Several materials and combination of different materials are available as media for germinating seeds and rooting cuttings. A good propagating medium should possess the following characters. The media must be firm, possess sufficient moisture, retention capacity, porous and dense to hold the cuttings or seeds in place during rooting of germination. It must be free from weed seeds, nematodes and pathogens.

Soil Mixture

The common proportion of soil mixture consists of red earth, well-decomposed cattle manure and river sand. Soil mixture commonly used for propagation is-

1. Red earth – 1 part / 2 part
2. FYM – 1 part
3. Sand – 1 part

Protray Nursery Production

This method provides healthy and uniform growth of the seedlings. Since the hybrid seeds are expensive, this method helps to reduce the cost by minimizing seed waste. In the commercial nursery, the most commonly used pro-trays are 98 celled and the most common growing media used is sterilized cocopeat which helps to prevent nursery diseases especially the seedling damping off. Cocopeat is a by product of coir industry which after digesting has high water holding capacity and good texture. Since it is low in mineral nutrients, the media needs to be supplemented with the nutrient solution (Utami, 2012).

- The seedlings of capsicum, tomato, chilli cabbage, cauliflower, brinjal can be raised in portrays.
- Plastic pro-trays are disinfected by dipping in thiram or copper fungicide solution @ 3 g/l of water.
- The seedling trays are filled with a potting media such as cocopeat (digested coirpith powder), commercial potting soil, or a potting mix prepared from soil, compost, rice hulls, vermiculite, peat moss and/or sand.
- For optimum germination, seeds are sown in well-drained sterile medium and water daily.
- Sowing is done by dibbling one seed per cell and cover by the seed 1 cm deep.
- Germination can vary depending on variety, seed quality and soil mixture.
- About 10-15 trays are kept one over the other, covered with a plastic sheet and left as such until germination (3-4 days). Later the trays are kept singly over plastic mulched beds prepared under protected net cover and shade net.
- Provision should be made to pull polythene sheet over the pro-trays in the event of rainfall. Use low tunnel structure by

the use of poly pipes of 1" diameter.

- The trays are watered thoroughly every day, or as needed (not too wet or too dry), using a fine sprinkler. Leaves should not be wet after nightfall as this promotes damping off.
- Application of 3 g/l macro and micronutrients or water soluble poly feed (19:19:19 all with trace elements) twice at 10 and 20 days after germination is suggested for healthy seedling production.
- Depending on the crop and infestation the plant protection schedules are followed.

Advantages of Portrays

- The use of trays results in win-win situation - saves a lot on expensive seeds.
- Helps in proper germination.
- Provides independent area for each seed to germinate.
- Reduces the seedling mortality rates.
- Uniform and healthy growth of all seedlings.
- Easy in handling and economy in transportation.
- Root development is better.
- Root damage is minimum or nil.
- Ensures better transplant establishment.

Planting Raised Seeding in the Containers or Pots

After raising the seedling in the portray, the healthy seedlings are planted in the containers which is filled with the soil media. The different containers available are clay pots, plastic pots, grow bags and polythene bags. The potting procedure is furnished below.

Potting Procedure

- Wet the seedbed before lifting plants. Lift with a ball of earth with as much of the root system intact, as possible. Do not pull out the seedlings in hot sun. Do not allow roots or the soil around the roots to dry.
- Fill up pots by putting some crocks first, then a layer of sand (5-8 cm) and finally pot mixture (8-10 cm).
- Place the plant with the ball of earth in the centre upon the layer of pot mixture (Place on one side of pots in the case of root stock plants used in inarching).
- Put pot mixture around the ball of earth, press as you fill up and level off, leaving one inch head space at top. Do not press over the ball of earth. It will break and damage the roots.
- Set the stem of plant at the same height as it was in the seed bed.
- Immerse pot with plant in a tub of water gently and keep inside water till air bubbles cease to come out. Remove and place the pot under shade.

Organic Manure

To enrich the media, organic manures are to be added it includes cattle manure, vermicompost and compost, which is available at the pesticide shops or in nursery as well. If the soil is heavy soil, addition of the organic manures will make the soil much porous so that the root penetration will be good. Though they are rich in N, P and K but the nutrient content depends upon the quality of the manure. The manures can be added to the potting media once in fifteen days interval. After addition of the manure, you can notice addition of green lustre in your plants.

Irrigation

The pots can be watered daily based on the physical appearance of the potting media. If it is wet, watering can be provided next day. Since the plants are in pots mostly water will be drained quickly. Hence based on the physical appearance watering can be done periodically. Similarly watering can be done by installation of drip or by applying water with the help of rosecan.

Tools Required

Hand hoe, digging fork, sprayer, rose can, water hose, bucket, mug, scissors and nylon twine.

Intercultural Practices

Thinning

If the seeds are sown densely, after seed germination few plants have to be removed for proper root growth of rest of the plants. Otherwise, due to dense population rotting of roots will happen. The processes of removal of few plants are called as thinning. *E.g.*: Fenugreek.

Pinching

Pinching is an operation when the plants grow to a height of 15 cm first three or four leaves are to be pinched to encourage more number of branches. *E.g.*: Mint.

Staking

Some plants will lodge when it bears fruits at that time the plants have to be given support has to be provided. Plants like lab lab, ribbed gourd, bottle gourd and snake

gourd needs staking or it has to be trained in a pandal system for proper support. Plants like tomato, brinjal and chilli also need staking on 60th day of planting.



Figure 1: Vegetable model roof garden

Conclusion

Terrace garden reduces the heat developed in the terrace and improves the cooling in the summer. Creates curiosity, passion and reduces stress in a person. Hence, practice of terrace gardening is essential since it adds more value in the human life.

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