

# Terrace Gardening Methods and Implementation

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**ABSTRACT:** Throughout today's metropolitan climate, terrace gardens are becoming a popular function. As an unnecessary use of urban land the trend of landscaping on terraces and rooftops was created. The rooftops & terraces of buildings tend to be a good source for urban planting in this congested climate. Due to its long life cycle as well as its simplicity to use on terrace conditions, this is also a potential choice for growing vegetables. However, vegetables can be grown on the terrace with minimal expense and can provide preferred, new, toxin-free produce by can monetary value of the land per unit (apartment). This also increases the aesthetic look, reduces tension and pressure of farmers and decreases emissions from the atmosphere. Such multifarious uses of planting on the terrace enable urban farmers to grow organic vegetables during the year. This paper aims to illustrate the methods and techniques for growing vegetables & their cultural activities in terrace conditions due to the absence of sufficient knowledge on terrace cultivation.

**KEYWORDS:** Atmosphere, Farmers, Plants, Rooftop, Terrace Garden, Vegetables.

## INTRODUCTION

India is the second most populated nation after china. India will be by 2050 the world's most populated nation, with approximately 2.0 billion inhabitants [1]. "Demand continues to rise geometrically, whereas the supply of food and nutritional supplies is increasing arithmetically." Every day, population growth happens by migration for income generation and improved livelihoods of people from rural to urban areas. It translates to a reduced supply of land for farm development and horticulture (Chandy and Michelle 2005). As a consequence of this, much of the productive land is turned into housing areas. Vegetables are usually referred to by horticultural plants as 'protective crops' for minerals, vitamins and other antioxidants, etc. Owing to multi-story building development in urban areas, vegetables in the cultivation house were missing. However, room space may also be used for vegetable development on rooftops, balconies, corridors or terraces etc. It is named "Building planting" or "Terrace planting" (Delburgo, 2006), in the process of creating the greenery and keeping it on top of the roof [2]. The actual rooftop is used for cultivating fruit vegetables, vegetables, herbs, home-made medicinal plants in this system.

### 1. What Is Terrace Garden?

A garden on a terrace is typically situated in a house with only a small garden space and is constructed on a terrace, roof or courtyard. These terrace gardens are especially common in urban areas.

- Roof of a house.
- Window boxes, Porches, veranda, portico [3].
- At level of podium, surrounding the base or even on the roof of the large basements.
- The inauguration of greenery within the urban fabric would help to restore the bad effects of the urban heat global warming, pollution etc.
- Green roofs – bring green spaces within urban lands and also offers, thermal benefits along with energy savings for the user [4].

### 2. Selection of Site:

With ample sunshine and water, the perfect roof garden can be built up. Because the apartments lack adequate rooms, these gardens can be installed on the tops of the roof so that room on the tops of the roof can be utilized efficiently. There is no means of touching the rooftop of all residences of multi-story houses.

So only by utilizing the pots and containers will fruits and vegetables be produced [6]. It is also container planting. In the veranda and the window sills, hence, pots can be mounted.

### 3. Tools required for terrace gardening:

Hand hoe (Figure 1), rake, planting hose, Hand sprayer, jute stakes, pots & quality plants, containers, soil curing, strong organic sense, sand from river, agrochemical goods as well as other organic inputs (Neem kernel seed extract, Neem oil, Panchakavya) & bamboo sticks and jute lines, pots and recipes [7][8].



**Figure 1: Gardening Tool**

### 4. Vegetable crops suited for terrace gardening:

- Vegetables which are transplanted such as tomato, Chilli and Brinjal.
- Direct sowed vegetables like Okra, Cucurbits, Amaranthus, Beet root & Radish.
- Perennial Vegetables: Curly leaf, Drumstick, Culinary banana, Agathi and Chekkurmanis,
- Crops according to roof garden such as Turmeric, Fenugreek and Coriander.

### 5. How to start:

Completely wash the bottle simultaneously create drainage from the bottom. With the aid of the shovel, combine dirt, manure and grain. Fill within the containers along with gentle tap loosely. The field settles and have one inch of irrigation head on top. Shallow bowls can be packed with the fine mix of dirt, compost and sand for transplanted vegetables where nursery is to be cultivated and the seeds should be spread. Immediately after sowing the jar will be irrigated. A dry grass or paw sheet is stretched across the soil and discarded later, before the seedlings emerge.

Some of the plants have one month sowing fit for transplantation. Portrays of flower seedlings have recently been included. The plug trays with a drainage whole measure 2-3 "long. In the beginning, half pipe is filled with compost and one seed is planted on each pipe and covered with compost for the remaining segment. The irrigation and other activities of the above system are identical. The seeds of other plants that can be specifically sowed should be planted in pots / polythene bags picked, etc. The seed depth should be approximately twice and a half as high. By sowing their seeds directly into containers, most vegetables are grown. The seedlings are transplanted in containers/pans, with brinjal, chilli, pepper, capsicum and onion, after 30-40 days of germination.

### 6. Cultural practices:

#### 6.1 Fertilizer application:

Approximately 5-10 g urea [9] can be added to damp soil one time a week or 10 days after sowing for 3 weeks or for 2 weeks after transplantation. Application at monthly intervals should be Vermicompost@100 g/plant. It would be sufficient to add decomposed kitchen waste. NPK-containing NDP blend is used in three steps: Dynamic fertilizers (17:17:17/20:20:20)

- 30 days prior planting that is on set with vegetative phase = 5 - 10 g per plant

- 60 days prior planting that is on set with flowering phase = 15 - 20 g per plant
- 90 days prior planting that is on set with fruiting phase = 15 - 20 g per plant.

### 6.2 Watering:

Container plants have been grown with respect and requires water for plants in pots and tanks. Plants require extra water in the summer and plants will be irrigated twice a day, ideally. The irrigation guideline is for the top field to be about one centimeter eroded, so there is no requirement for urgent irrigation if the lower field is wet. Watering will usually be performed as appropriate.

### 6.3 Staking:

Staking is important depending on the plant's growth level. Plants such as greenhouse greenhouses, ribbed gourd, snake gourd and bottle gourd must be staked or equipped as a pandal device to protect them properly. On the 60th day of seeding, plants like tomatoes, brinjal and chilli are also needed.

### 6.4 Weed control:

Hand hoeing and spinning tends to improve good plant growth in aeration at the root zone there. In leafy plants like amaranthus, spinach, fenugreek, coriander etc., weeds should be gently extracted.

### 6.5 Pest and disease management:

Choose, kill, spray, neem oil with 2 ml/L of water and sticking agent of 2 ml/L of water, soap and shrink the larvae contained on fruit and vegetables. For damping mitigation, irrigation will be avoided.

### 6.6 Harvesting:

Fruit and plants are often superior in nutritional quality, freshness, taste and beauty, and should be collected at the highest point of maturity and used fast. When young, leafy vegetables should be harvested regularly. Root plants should be extracted before they are pithy otherwise soft. If it is completely grown but still tender, tomato is taken at the riper stage; brinjal and okra are selected. There are not many uncommon vegetables such as leek, fennel and soya on the market. This may then be stored in containers with benefit.

### 6.7 Digging of soil:

When the season finishes, cut the plant from cover & drain the soil open & split the clods after done harvesting the vegetables.

### 6.8 Refilling of containers:

After fifteen days, add organic manures along with soil mixture thoroughly and refill the pots.

### Construction:

There are two types of green roof systems, namely:

#### 7.1 Extensive roof:

- Thin growing little, medium or no irrigation; low plant diversity.
- Total Depth = 70 to 120 millimetre
- Weight maximum = 80 to 125kilogram / square meter

#### 7.1.1 Advantages:

- No require of reinforcement in lightweight roof.
- Compatible for large areas.

- Low maintenance and has long life.
- Insignificance of specialized and irrigation drainage systems.
- Suitable for default projects.
- Spontaneous growth of vegetation.

#### 7.1.2 Disadvantages:

- Energy efficiency and water saving capability.
- Limited choices of plants.
- Unattractive in winter.

#### 7.2. Intensive green roof:

- High plant diversity; irrigation system; often accessible.
- Overall depth is around 150-1500 mm
- Weight max is around 200kg/sq.m

#### 6.8.1 Advantages:

- Diverse habitats and plants.
- Good insulating properties.
- Visually attractive.

#### 6.8.2 Disadvantages:

- High weight loading over roof.
- Need for irrigation & drainage systems requiring energy, material and water.
- Higher capital and maintenance costs.

### 7. Methods of cultivation:

#### 7.1 Benches :

The benches of cement are suitable length & width can be built on the open top of the roof depending on the bearing load. The field mixture (two sections of (red) soil + one part of sand + one part of compost) was filled and used for the growth of fruit or vegetable crops.

#### 7.2 Trough:

An inbound trough is built-in empty spaces of the top of the roof like the sunken trough for efficient use of roof spaces. The trough duration and depth may be planned according to the specifications. To keep water from being poured onto the building, the usable space is sufficiently filled with waterproofing materials. The interior has a gentle slope built to make drainage simpler. To secure drainage, the drainage channel is filled with wire mesh & gravel. Geo-textile cloth is spread over the whole field and then lined with the soil mix for fruit & vegetables [10].

#### 7.3 Pots and Containers:

The pots and pans on the greenhouse roof (Figure 2) may be used to produce fruit and vegetables, for example, cement pots, broken bowls/tanks and bottles, piping tub, plastic bins, boxes, crates, hands, unused water cannings, plastic jars, wood barrels, earth pots, reservoirs, plastic lining, cement sacks, destroyed sink/washes.



**Figure 2: Pot Gardening**

#### *7.4 Earthen pots:*

Earthen pots in different sizes are made from burnt, pore clay to carry enough soil to rise. These are smooth and narrower on top of the manure than on the bottom and therefore find it easier to drain the soil at planting or repotting, intact with the roots (earth ball). Throughout India, plates, 1/4 scale, 1/2 scale and 3/4 inch pots of various types are widely used.

#### *7.5 Plastic pots:*

Round and square plastic containers for indoor plant growing may be used. Reusable, light-weight, anti-porous are the multidimensional applications of plastic cylinders which need limited storage space.

#### *7.6 Fiber pots:*

The measurements range from 5 to 10 centimeters long and are circular or square. These are available. The soils and plants within are non-degradable organic and last longer times.

#### *7.7 Seed pan and seed boxes:*

The measurements range from 5 to 10 centimeters long and are circular or square. These are available. The soils and plants within are non-degradable organic and last longer times.

#### *7.8 Polythene bags:*

For cuttings like jasmine, duranta, etc., tiny polythene bag with punched hole in bottom, for drinking and loaded with for rooting medium are used. Within such polythene sacks, small seedlings born in a nursery are often transplanted. The soil mixture is made up of polythene & used in vegetables such as strawberries, brinjals, chillies, amaranthus, currant, coriander, etc.

#### *7.9 Paraffined paper or Styrofoam cups:*

These appear like drainage cups and they are portable containers for new plants. They are like ice cream cups. They are small, inexpensive and require little space. The new trend of thermocole moulded cans is light weight and appealing.

## CONCLUSION

Terrace gardening is a lucrative sport, not for financial gain but even for physical activities, better usage of room, time, hygiene, domestic waste recycling, and so on. The terrace garden often decreases terrace heating and thus increases summer cooling. Therefore, planting on the terrace is participatory, but it is obligatory both ethically and mentally.

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