

ROOF TOP VEGETABLE GARDEN- A NEW WAY OF VEGETABLE PRODUCTION IN URBAN AREAS

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A roof garden means any type of vegetation established on the roof of a building, if we are allowed to grow vegetables in the place of ornamental plants than it is called as roof top vegetable garden. The continuous growing population of the world is creating a lot of social, economic and ecological pressures on the environment. It is also increasing the demand of food in future. Industries and automobiles in urban areas are reducing the quality of water and air, resulting into they are facing many health problems. Due to the climate change atmospheric temperature increased day by day. One of the most important reasons to create roof top vegetable garden is the esthetic view of a green area in the city, which is contributing to the quality of life of the citizens but also gets the fresh vegetables.

TYPES OF ROOF TOP VEGETABLE GARDENS

Green roofs/ Living roofs-

In such type of roof top garden, crops are directly grown into shallow beds in a soil based growing medium that planted over a waterproofing membrane. It may also include additional layers such as a root barrier and drainage and irrigation systems.



Roof top container garden-

It involves the cultivation of vegetables in the containers which is made up by the plastic, wood, cement or soil etc. Plastic grow bags or empty plastic bags with high thickness, empty tin container can also be used to grow plants. Different size plastic beds are also available in market which can also be used to grow vegetables.

Hydroponic system-

It involves the cultivation of vegetables in the soil less medium, water based nutrient solution provided for the growth of the plants instead of soil. Hydroponic system can be installed in the open air system or in the closed system. This system require ongoing fertilizer inputs for higher yield.



ESTABLISHMENT OF ROOF TOP VEGETABLE GARDEN

- **Selection of site-** Before starting, first check the water proofing and drainage facility on roof. Capacity of roof to tolerate the weight of plants and soil medium.
- **Materials required for roof top vegetable garden-** soil, vermicompost, plastic container/grow bag/grow beds according to the choice and requirement, high quality seed, bio pesticides (neem oil, neem powder or neem extracts, *Trichoderma*, *Pseudomonas* etc), bio fertilizers etc. Tools like hand trowel, water can, hand sprayer, secateurs, gardening gloves etc.
- **Medium to grow-** Before sowing suitable growing medium should be prepare to fill in the grow bags or grow beds. Vermicompost and fertile soil can be mixed in same proportion, than it will be fill into the containers.
- **Sowing-** Certified or high quality seeds/seedlings can be used for the sowing/transplanting. Sowing of seeds can be done at the idle depth (2-3 times of the seed size). Seed should be covered with the soil and light irrigation should be applied.



Suitable sowing time of different vegetable crops-

Kharif- sowing has been done in the month of June to July.

Example- Okra, Brinjal, Chilli, Tomato, Cucurbits etc

Rabi- sowing has been done in the month of September to October.

Example- Spinach, Fenugreek, Pea, Garlic, Onion, Tomato, Cabbage, Cauliflower, Carrot, Radish etc.

Zaid/Summer- sowing has been done in the month of February to March.

Example- Okra, Brinjal, Cucurbits, Melons etc

- **Irrigation and nutrient management-** provide time to time irrigation to the vegetable plants through the drip system or by the water can. Provide nutrient in the form of FYM or vermicompost or any other readily available bio fertilizers in the market.
- **Pest and disease management-** for the control of sucking pests neem products in the form of powder or oil, provides better control against these pests. Yellow sticky traps can also be used to control whitefly and aphids. Fruit fly traps can be used to control fruitfly in cucurbit vegetables. Trichoderma and Pseudomonas etc can be used to control different diseases in roof top vegetable garden.

BENEFITS OF ROOF TOP VEGETABLE GARDEN

- Aesthetic view of roof
- Provide organic vegetables for the family
- It reduces the monthly budget of house
- It increases the attachment of family towards the environment
- Acts as natural insulation for hot and cold air and save energy for building
- Reduces CO2 levels and increases oxygen and improves air quality
- Provides protection to buildings from adverse temperature and hence improves the life expectancy of the buildings
- Provide better space to enjoy the nature in urban areas where cities are too congested



OUR ROOFTOP VEGETABLE GARDEN

This pandemic situation given us lots of time to think about the nature and environment. We are already maintaining roof top garden before pandemic came under which we are growing only ornamental plants but suddenly the corona has come and cause panic situations for the entire world. Taking things from outside is always questionable for us that it is safe or

unsafe? Especially at the time of vegetable and fruits purchase. Than we have decided that we can grow vegetables along with ornamentals. We have purchased grow beds, grow bags from online and offline modes and also used empty flour bags available in house. Brinjal, chilli, tomato, cucurbits, coriander, radish, carrot, leafy vegetables like spinach, mint, curry leaves

and fenugreek etc grown in our roof top vegetable garden. Rooftop garden is helping us by providing fresh vegetables and healthy environment and also saved our money.

