

Micro-Gardening: Making Urban Spaces Sustainable

Anshika Manral, Nitendar Singh and Komal Verma
School of Agriculture, Galgotias University, Greater Noida,
Gautam Buddh Nagar - 201310
Uttar Pradesh, India

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Abstract

Micro gardening is a practice of cultivating vegetables, fruits, herbs etc in minimum space available to us. In this article, we have covered the basic knowledge involved in the process of micro gardening like its strategy, production technology and key, components, attributes and pros. Also the conditions under which we grew our produce which turned out to be very nutritious and organic. Lockdown came as a boon for many of us to invest time in their hobbies. Recently, due to Covid-19 outburst, more and more people are taking up gardening as a hobby. Also the need of the hour is to boost immunity and health which is very well fulfilled here. The market price of most of fruits and vegetables are high but is quit inexpensive if we grow them on our own at homes. The practice of micro gardening is also known as Mini / Container Gardening

Keywords : compost, management, organic, sustainable, urban

Introduction

Micro gardening as the name suggests is a gardening practice usually done in pot containers , trash cans/ old bottles or small spaces like balconies , roof-tops , small yards etc. With the upsurge of urbanization, there are many such people in cities with no access to fresh fruits and vegetable, this is a good option for urban spaces since there is confined space available especially in flat residents. Also, they can eat fresh anytime. Micro gardening is also efficacious concerning nutrient recycling since local composting plays a vital role. It cuts out the dependency on external inputs, which are otherwise used in fruits and vegetable we buy from the market.

The pandemic phase has led people to sit idle at their homes which might lead to anxiety and other health concerns sometimes. In this case also micro gardening can be a appreciable hobby to inculcate which will turn into a healthy habit with time. Growing your

own vegetable, fruits & herbs is easy and need a little care which in turn gives a feeling of satisfaction once they grow. This is a wholesome activity for children to old age people which keeps them fit both physically and mentally while learning about what is being served on their plates.

The key of micro gardening is “sustainable production” ie., to produce more with less. Micro gardening integrates kitchen waste management by using compost which can be prepared from kitchen scraps like vegetable and fruit peels, strained tea leaves which increases soil fertility with no extra cost at all. All we have to do is to select a place or a bin where compost has to be prepared (in case of bin or container, drill 2-3 holes for aeration). Add a layer of garden soil and layer it up with organic wastes like vegetable and fruit peels, tea strains etc and mix it with the soil, then cover with some more soil and repeat the process once a week. Sprinkle it with some water when it gets too dry and rake it up after a few days. This compost gets ready within 1-2 months.



Fig. 2 Denotes Kitchen wastes compost in bin



Fig. 1 Denotes kitchen waste compost

One should use healthy soil since there is minimal space available to us therefore the soil quality plays a key role. The soil must be rich in fertility & healthy for a good outcome. The utilization of space needs to be done very cleverly so that maximum space can be used and also up cycling can be practiced which make this process sustainable and also budget and co-friendly. The next thing to consider is water requirement. The water management should be looked upon i.e., try to use water judiciously so there is no wastage. Self-watering of plants can be done; also drip irrigation & water harvesting are some other options which might need initial investment but will work on a long run. A microclimate is the climate of a particular area that is different from the surrounding. In micro gardening, an optimal control

over sun & shade can be made according to the light intensity required by the plant. Use of themicroclimate can be made to our benefit by opting for portable options that can be shifted according to the availability of the sun and shade. Usage of natural or man-made environment must be made to an advantage.

Materials and Methods

Study Area

The study was conducted in Roorkee, Uttarakhand and Hapur, Uttar Pradesh located at latitude 29.8543° N , longitude 77.8880° E and latitude 28.7306° N, longitude 77.7759° E respectively and with average weather 13 °C, wind N at 3 km/h, 91% humidity and 14 °C, wind NW at 3 km/h, 68% humidity respectively.

Soil

Soils play an important role in agriculture. In Roorkee area of Uttarakhand, the soil ranges from sandy loam soil to loam with high porosity. The city is built on the bank of Ganges Canal, which makes the soil here very fertile.

In Hapur area of Uttar Pradesh, the soil varies from clay, silt and fine to coarse sand and the land here is also very fertile.

Climate

Roorkeeshares a hot sub-humid (dry), moderate subtropical to humid climate. The temperature begins to rise from March (27.60 C) and reaches to its maximum at during May (37.20 C) with the commencement of monsoon season by the mid of June and the temperature begins to lower by the end of June. During the winter season in the month of December to February the temperature ranges between 24.70 C to 17.70C.

Hapur shares a humid subtropical climate with very hot summers and cool winters. Summer season lasts from early April to late June and are extremely hot, with temperatures reaching upto 43 °C .

Results

1. **Microgreens:** These are vegetable green which grows up to 2-3 inches tall once the seed develops leaves.

Takes about 1-2 weeks to harvest.

Example – Wheat grass, Radish Grass



2. **Herbs:** Leafy greens with aromatic & medicinal properties. Commonly used for flavour and garnishing. Example – Coriander, mint, Basil.



3. **Sprouts:** These are germination seeds and can be grown in a container without a garden. They can be grain sprout or vegetable or leafy sprouts. Example - chickpea sprouts, fenugreek sprouts



4. **Salad Bar:** Desired are plucked and salads. Examples – Lettuce



leafy greens consumed as Baby spinach,

Conclusion

Micro gardening is a sustainable way of cultivating plants which can be easily practiced by anyone and especially very useful for urban areas where there is limited space. The produce is power packed with phyto nutrients, vitamins, proteins, antioxidants which can fulfill your daily nutrient requirement easily. Also with people caught up in their homes during this pandemic period, this can be a very good practice to inculcate & in turn you consume clean home grown produce. Even if it starts out as a hobby, it will quickly become a



habit which uplifts your mood even and bring some positive vibes. It is also a good physical & mental exercise and helps keep your mind sharp.

