

KITCHEN GARDENING: SUSTAINABLE APPROACH FOR HEALTHY FOOD PRODUCTION

Ankita K. Kawadiwale^{1*},

Nang Priyanka Langkhun²

¹Bio Science Research Centre, SDAU, Sardarkrushinagar

²DBT-APSCS&T CoE for BRSD, Kimin

INTRODUCTION:

India, being successful in achieving self-sufficiency in food production, yet the problem of food insecurity is persistent among the households in the country. India is said to be the home of world's largest undernourished population despite of it being the second largest food producer. India has a level of hunger that is so serious that India ranks 101st out of 116 countries in the 2021 Global Hunger Index with a score of 27.51. Malnutrition and poor health are the biggest concern in our country. Malnutrition retards growth as well as it affects the young brains resulting in slow social and mental development. Studies have proved that intervention of kitchen garden is a promising strategy in mitigating the problem of nutritional and food security. Fruits and vegetables are major sources of vitamins and minerals and are source of micro and macronutrients essential for healthy mental growth of the households.

The daily vegetable requirement as recommended by Indian Council of Medical Research for an individual is 300 grams (gm) per day in a balanced diet which comprises of 90gm of root vegetables, 120gm of leafy vegetables and 90gm of other vegetables.

Consumption of vegetables is very essential to mitigate macronutrient and micronutrient deficiency in the body. Sustainable approach can be stated as holistic approach considering ecological, social and economic dimensions together to recognize the lasting prosperity (Simon, 1987). In kitchen garden, the holistic dimensions can be co-related: soil health, recycling and environmental air as ecological dimension, aesthetic value of layouts, physical activity and education as a social dimension while cost effectiveness as economic dimension of sustainable approach for healthy food production.



KITCHEN GARDEN BASICS

Kitchen gardening is a technique of growing vegetable crops and herbs in the supplemental spaces of residential area. The kitchen gardening mainly emphasizes to meet self-consumption need of the family throughout the year. Vegetables suitably grown in the kitchen garden are of short duration which allows integration of various types of vegetables and herbs in a meal depending on the season of availability. The major vegetable crops grown in the homestead gardens are tomato, peas, gourds, broccoli, cabbage, cauliflower, potato, eggplant, green chili, spinach, coriander, ginger, lettuce, wild cabbage as per the season.

The nutritional requirement of the plants in garden are fulfilled by use of cow dung, oilcakes and other organic manures generated by installing a compost pit in the garden. Thus, the vegetables obtained from the kitchen garden are purely organic. The waste generated from the kitchen and the garden can be used as raw material for the compost which in turn helps in keeping the surroundings clean. It also cleans up the air around eventually improving the health of the family members.

Establishing a kitchen garden requires proper soil mixture along with maintenance of it. Soil mixture should form 1:1:1 proportion of compost, cocopeat and garden soil respectively. Maintenance includes pruning of herbs and leafy vegetables, manuring and neem oil spray (once in 15 days). Considering availability of space, budget and consumption requirement, kitchen garden can also provide an aesthetic value with the layouts. Some garden layouts with the advantages-



1. **Food forest:** Provides healthy food, fun project, self-reliant in food requirement
2. **Hugelkultur:** Gradual wood decay proves to be a consistent source of nutrients to plant
3. **Plant pyramid:** Preferable to grow herbs or salad using vertical space
4. **Container gardening:** Recycling of tins from house to use small spaces in apartments to grow vegetables
5. **Hanging gardens:** Uses vertical space and veggies like lettuce, herbs and pepper can be grown.
6. **Hydroponics:** Expensive than traditional one but provides advantage on less pest infestation and high nutritional security.



Ideas for establishing a kitchen garden

- The short stature trees crops like papaya, drumsticks, curry leaves, banana should be planted as a fence or boundary to avoid the hindrance in efficiency of the sun loving vegetable crops.
- The vegetable plots must be prepared in the eastern side of the garden.
- The creeper vegetables can be planted along the fence to avoid additional usage of ground area in the garden.
- Partial shade loving plants like pineapple, ginger, turmeric can be intercropped in the spaces under the tall fruit trees.
- Adoption of crop rotation to replenish the soil nutrients and check the growth of crop associated weeds, diseases and insect pest.
- Weed growth can be checked by using organic mulch with the help of dry crop residues.
- Use of bio-pesticides for need based insect-pest and disease control.
- Use of quality seeds with seed treatment of bio-formulations.
- Use of well decomposed compost, FYM, oil cakes to ensure proper growth and development of the vegetable crops.
- Adopt line sowing or dibbling method of sowing to ensure good plant stand and make easy to carry out intercultural operation easy.
- Hardening of vegetable seedlings before transplanting to the main plot by withholding watering for the last two to three days before transplanting to avoid heat and water shock.



- Add pollinator attracting flowering plants like Marigold to increase production.

BENEFITS

- The adequate amounts of vitamins and minerals can be incorporated in diet through various types of vegetables and herbs rich in nutritional components in the kitchen garden. Some studies have also reported increased intake of protein and iron after adopting the idea of kitchen gardening.
- It provides an opportunity for a family to work together and remain physically active.
- The non-disposable items like tins and empty containers can be reused for growing herbs and condiments.
- It is an ideal way of improving the soil health by replenishing the nutrient content, encouraging the proliferation of soil microbes and other soil dwelling organisms by utilizing solid kitchen waste and waste water generated from day-to-day activities which aids in growth and development of plant.
- For a family with low purchasing power, distant markets, adopting the idea of kitchen gardening can be a means of livelihood or can be a means for generating extra income by selling the surplus production from the kitchen garden.

CONCLUSION

For acceptability of proper intervention of kitchen gardens with scientific knowledge about every component in the home garden, active participation and involvement of the community is very crucial. Also, in wake of soaring food prices and food crisis worldwide, self-sufficiency in local food systems through kitchen gardening could be encouraging.