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KITCHEN GARDENING FOR NUTRITIONAL SECURITY

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INTRODUCTION

Kitchen gardening is a straightforward process of cultivating vegetables, fruits, herbs, spices, and medicinal plants near the house. It can be done in the backyard, courtyard, rooftop, balcony, terrace, container, or any other available place. A good kitchen garden not only ensures the provision of fresh and healthy food in the family but can make significant contributions towards achieving nutrition security, food diversity, and household well-being. At the same time, kitchen gardening provides an opportunity for making use of organic household wastes and developing an understanding about the production of healthy food.

Nutrition security is related to providing people with regular access to sufficient, safe, diverse, and nutritious food meeting their dietary needs. Vegetables and fruits are the sources of vitamins, minerals, dietary fiber, antioxidants, and other substances beneficial for health. However, some households might not have sufficient quantities and diversity of vegetables due to high prices, seasonality, limited market access, or lack of information. Kitchen gardening can solve these issues by providing continuous fresh vegetables and other foods to the household.

Role of Kitchen Gardening

The role of kitchen gardening in providing food and nutritional security of households cannot be undermined. Different varieties of vegetables may be grown by utilizing available space in accordance with seasons. Leafy vegetables like spinach, amaranthus, coriander, fenugreek, and mustard leaves are some of the sources of vitamins and minerals. Tomato, chilli, brinjal, lady's finger, beans, peas, radish, carrot, beet

root, cabbage, cauliflower, cucumber, pumpkin, and gourd can further add diversity to the diets.

One of the important benefits of kitchen gardening is the availability of vegetables in the vicinity of households. Vegetable crops can be grown in accordance with daily needs; hence there is lesser gap between the time of harvest and consumption. Fresh vegetables not only provide high sensory quality but also add diversity to the diet.

It will also decrease the cost of vegetables for households. Instead of purchasing vegetables from market, families can cultivate common vegetables at their premises.



Planning for a Kitchen Garden

Adequate planning is required for setting up an effective kitchen garden. Assessment of the area must be done before planting of crops in the garden. The garden must receive enough sunlight, water and drainage facilities. Vegetables usually require several hours of sunlight for proper growth and production.

The garden can be subdivided into small patches such that various crops can be cultivated at the same time. Tall crops must be planted in the north part or least obtrusive part of the garden since they may

cast shadow on other shorter plants. Climbing vegetables can be planted on trellises, fences or any other supports.

Selection of crops must be made depending on the preference of food, weather, season, space available and nutritional needs of the family. A combination of leafy vegetables, roots and tubers, fruits, beans, herbs and spices can ensure nutritionally diverse diets.

Vegetable Crop Selection

Selection of vegetable crops becomes an important issue for kitchen gardening success during the particular period. In the cool period, radish, carrot, beetroot, peas, spinach, coriander, fenugreek, cabbage, cauliflower, broccoli, and turnip may be raised in the relevant geographical location.

In the warm period, vegetable crops such as okra, brinjal, chilli, tomato, cowpea, cucumber, bottle gourd, bitter gourd, ridge gourd, pumpkin, and any other suitable crops may be raised depending on the particular climatic conditions. Perennials like drumstick, curry leaf, lemon, papaya, banana, and herbs can also be added in case of adequate space is available in the garden.

Soil preparation

Good soil is the basic requirement for a successful kitchen garden. The soil should be light, fertile, well-drained, and rich in organic matter. Organic manure like farm yard manure, compost, vermi-compost, leaf compost, etc., may be added to the soil.

Organic matter for the preparation of compost from biodegradable household waste may be another source of organic matter. Biodegradable materials such as vegetable peels, leaves, grass cuttings, etc.,

may be composted properly and used in the garden. Diseased plant parts, plastic, glass, metal, and chemically contaminated waste should not be added to the compost. Adding organic matter regularly will improve the soil structure, moisture retention, microbial activity, and nutrient content in the soil. Soil testing may also be done wherever facilities are available.

Seeds and planting material

Good quality seeds and healthy planting material are essential for kitchen gardening. The seeds should be obtained from a good source and should be good in germination capacity. Local cultivars may be used effectively since they adapt well to the local environment.

Seedlings of crops such as tomato, brinjal, chilli, cabbage, cauliflower, and other transplanted vegetables can be raised in small nursery beds or containers. Healthy seedlings should be selected for transplanting, while weak or diseased seedlings should be discarded.

Nutrient Management Through Organic Sources

Kitchen garden can use many organic sources which are locally available. The organic materials that can be used for providing nutrients to plants include farm yard manure, compost, vermicompost, leaf compost, poultry manure, etc.

Nutrient management through organic materials should be done through balanced utilization rather than the excessive utilization of any one source. Over-utilization of manure can create imbalance in nutrients. Decomposition of organic materials is also very important before applying them. Biofertilizers having beneficial microorganisms can also be used when required.

Water Management

Water is very important in the cultivation of vegetables. However, water needs to be managed properly. Watering kitchen gardens should be done based on the requirements of each plant and other factors including soil moisture, climate, and plant growth stages. Excess watering may cause waterlogging, nutrient losses, plant diseases, and reduced plant growth.

Drip irrigation, watering cans, perforated pipes, and other low-cost irrigation techniques can be employed depending on the size of the garden. Mulching using dried leaves, straw, grass, and other suitable organic matter can minimize evaporation and retain moisture in the soil.

Water harvesting through the collection of rainwater can also aid in kitchen gardens. Rainwater harvested from roofs can be utilized for irrigation purposes.

Integrated Pest and Disease Management

Management of pest and diseases is very crucial in ensuring healthy kitchen gardens. Measures aimed at prevention should always be emphasized. Healthy seedlings, crop rotation, adequate spacing, balanced nutrition, field sanitation, and constant monitoring can minimize problems of pests and diseases.

Insect handpicking and the disposal of plant parts with heavy infestation can work well in small kitchen gardens. Insect traps such as yellow sticky traps can be used to detect some of the insect pests.

Neem-based and other approved botanical preparations can be used where necessary. Biological control agents can also be used according to recommended practices. Indiscriminate use of pesticides should be avoided, particularly in

household gardens where vegetables are harvested frequently.

Crop Rotation and Mixed Cropping

Crop rotation can be used for the sake of maintaining healthy soil and controlling the build-up of pests and diseases. Different types of vegetables belonging to different families should be rotated and not the same crops should be planted over and over again in the same vegetable bed.

Mixed cropping can help diversify the production in the kitchen garden. Crops with different kinds of growth habit can be planted together where the need for resources is compatible. Leafy vegetables can be mixed with appropriate root crops or legumes. Climbing vegetables can also be grown vertically to save space.

Vertical Kitchen Gardening

Vertical gardening becomes very important when the available space is limited. The vegetables that have the ability to climb up can be grown by planting them on trellis, bamboo structure, net, fences, and many other support systems like cucumber, bottle gourd, bitter gourd, ridge gourd, beans, and peas.

Container and Rooftop Gardening

Gardeners can successfully cultivate vegetable crops in containers using appropriate plant species, growing media, and methods of cultivation. The containers can include pots, growing bags, used buckets, crates, and other food-grade containers with good drainage facilities.

Tomatoes, chillies, eggplants, coriander, fenugreek, spinach, radishes, carrots, lettuces, and some herbs can be cultivated in containers based on their root requirements. Larger containers can be used to grow crops that require more growing space.

Rooftop gardening offers an excellent option for urban gardens to produce their fresh vegetables without ground space. Attention must be paid to weight-bearing capability of roofs, waterproofing, drainage, winds, and use of containers.

Nutritional Benefits

The biggest benefit of kitchen gardening is in the increase in diversity of food intake. Different vegetables have different nutrition, and by growing various kinds of crops, households will be able to have a greater variety of foods in their meal plan.

Green leafy vegetables are rich in vitamins, minerals, fiber, and antioxidants. Orange/yellow vegetables may be rich in carotenoids, and legumes in plant proteins. Tomatoes, peppers, and certain leafy vegetables are rich in bioactive compounds for healthful intake of the diet.

In addition to this, kitchen gardens will be a source of herbs and spices to enhance the taste and acceptability of the meals. It means that including vegetables of different colours and different kinds will encourage varied food intake.

Role in Household Economy

By using the vegetable gardening technique, the household expenses can be reduced by supplying the vegetables directly from the house. Small portions of vegetables that are harvested periodically can substitute buying them at the markets. In addition to this, excess vegetables can sometimes be sold or bartered with other households.

Kitchen gardening can also provide productive use of household spaces that might otherwise remain unused. The use of household compost, recycled containers, locally available seeds, and rainwater can further reduce production costs.

Role of Women and Community

Females are frequently involved in the process of choosing foods, preparing food, and handling food nutrition. The involvement of women in kitchen gardens helps to boost food production at household level and enhances knowledge related to the nutritional diet.

The kitchen garden can be set up by schools, self-help group, farmers, community organization, and local institutions. Schools may use their gardens to provide education about agriculture, nutrition, environment, and healthy foods.

Kitchen gardens at community levels can be effective where the area for individuals is not available. This can help in providing fresh vegetables and build cooperation among the people of the community.

Kitchen Gardening and Organic Waste Recycling

Kitchen gardening offers a wonderful chance for the recycling of biodegradable waste from the household. Vegetable and fruit wastes, leaves, etc., can be transformed into compost using proper composting processes.

Recycling of organic waste through composting helps in reducing the amount of organic waste disposed off and enriches the soil as well. Moreover, it is an example of recycling where waste from households is made use of for growing food.