

# Vegetable Gardening

The vegetables being rich in vitamins and minerals, constitute one of the very indispensable items of Indian kitchen. It becomes customary to have vegetables in our daily diet. Realizing the value in human health and the potential in income generation, vegetable cultivation has been highly specialized. It is being grown for different purposes. *Bailey*<sup>1</sup> (1949) divided vegetable farming broadly in two groups—home scale gardening and commercial gardening. *Thompson and Kelly*<sup>2</sup> (1979) suggested seven types of vegetable gardening. These are :

1. Kitchen gardening
2. Market gardening
3. Truck gardening
4. Forcing gardening
5. Processing gardening
6. Seed production gardening
7. Floating gardening

## KITCHEN GARDENING

(It aims solely to produce vegetables for the consumption of one's own house) Generally, cultivation of vegetable is practised in yard of house. Very intense method of cultivation, in time and space dimensions, utilizing every inch of land in quick succession, is practised. Even, furrow, meant for irrigation, is not left vacant. Kitchen garden supplies vegetables continuously throughout the year. In kitchen garden, most of the works are performed by family members. So, it is wise to select back portion of the house for vegetable cultivation. The selected portion should be near the source of irrigation or water tap. The waste water of bath room can also be used for irrigating the vegetables. The selected side should preferably be free from shade of house or planted tree. The course of setting sun being south-western, perennial trees like papaya, lemon, banana, if planted, should be set in north direction of the kitchen garden to avoid shading. In the corner, pit of suitable size should be dug out. The waste of kitchen and other decomposable materials may be dumped there to use as compost or organic manure. The climbing nature vegetables like pea, cucurbits etc. should be grown

1. *Bailey, L.H. (1949) Manual of Cultivated Plants, The MacMillan Company, New York.*

2. *Thompson, H.C. and Kelley, W.C. (1979) Vegetable Crops, McGraw Hill Book Company, Inc., New York.*

along with boundary to have a readily available support. Preference should be given to those vegetables which are early maturing and consumed afresh in kitchen. Brinjal, Chilli, Tomato, Okra, Amaranth, Spinach, Corinader, Radish, Onion, Garlic, Cowpea, French beans, Cluster beans etc. are some good vegetables for kitchen gardening. In cities, very limited or sometimes no ground space is available for kitchen garden. Under such situations, vegetable hobbier can go for growing vegetables in pots. The sill of window, provided light comes there, and roof of the house, etc. are very good substitutes for ground space for vegetable cultivation.

### Highlights

- Intended to supply vegetables for the consumption of own house.
- Usually backyard of the house is preferred for growing vegetables.
- Pots, boxes, sills, window, house-roof etc. are equally good for kitchen garden.
- Dig compost pit in one corner.
- Plant low growing perennial trees in northern direction to avoid shade in the garden.
- Grow climbing type vegetables along with boundary.
- Practise intensive cultivation of vegetable in quick succession of vegetables grown earlier.

## MARKET GARDENING

About 25 per cent of Indian population lives in cities. Generally, the city dwellers neither have time nor land to grow vegetables. Such shift of habitation of people from rural to urban area has given rise to the development of farming of vegetables for the market. The vegetables are grown in the suburb of cities, mostly in the periphery of 10 to 20 kilometres distance. However, with easy access to transportation facilities, distance is no barrier now-a-days. In cities availability of land is very costly and big size plot is not always available. So mostly cultivation of vegetables is practised on small size farms. The growers practise very intense method of cultivation to secure maximum profit from every unit of land and other inputs like seed, fertilizers, pesticides etc. To have an identity in the market, the grower is usually intended to produce variety of vegetables suiting to different seasons of the year. Every attempt is made by the growers to render continuous supply of vegetables. The growers usually prefer to grow early maturing types of vegetable to catch highly profitable early season market. The growing of off-season vegetables is also preferred by market vegetable growers. Mostly the sale of the vegetables is ensured by the grower himself. It helps in getting high profit.

### Highlights

- Developed with the urbanization.
- Practised in suburbs of cities.
- Usually farm size is small.
- Too intensive cultivation of vegetables is practised.
- Early maturing as well as off-season vegetables receive priority.
- Commonly, sale is arranged by the grower.

## TRUCK GARDENING

The word 'truck' has been derived from French word '*troquer*' which means 'to barter'. As it is conceived that truck means motor truck, is not correct. This type of garden produces vegetables in relatively large amount for distant markets. Extensive method of cultivation growing especially one or two crops is practised. The selection of location and site for vegetable cultivation depends upon availability of nick climate. The truck gardens for onion and garlic are situated in Nasik and for potato in Kufri as the climates of these localities are unmatching to that prevailing in any other localities and favour bumper production of crop. The produced vegetables are sent to distant markets using truck or rail. As the produce is sold to distant markets, involvement of middlemen becomes necessary. They curtail the profit of the growers. Generally, the cost of land and availability of labour is comparatively cheap than market garden as the production site is located away from the city. The land holding is large and mechanical farming is practised. It reduces the cost of production. The total income per unit area is also less than market garden. Now-a-days, with a quicker development of rail and road facility, the criteria of selecting land near or away from the cities is becoming immaterial. The identifying mark that market gardens are located in the vicinity of the cities and truck garden away from cities is becoming weak continuously. However, vegetables which sustain long distant transportation without any damage are very good for truck-gardening. Onion, garlic, potato, chillies, pumpkin, petha, elephant foot yam, colocasia, discorea, etc. are ideal vegetable crops for truck gardening.

### HIGHLIGHTS

- The word truck has been derived from french word *troquer* meaning 'to barter'.
- Site is located away from consumption market.
- Availability of suitable climate determines the site of growing.
- Land holding is large and extensive method of cultivation is practised.
- Availability of land and labour is cheap.
- Middleman's involvement becomes necessary.
- The produce is carried to distant markets through road or railways.
- Vegetables which sustain long distance transportation are ideal.

## FORCING GARDENING

Growing of vegetables out of their normal growing season is termed as forcing gardening. Early sowing of cucurbits in the *diara*\* land of rivers is a type of vegetable forcing. A pit is made and the seeds are sown after filling the pit using cow dung. With the use of cow-dung, the seed gets suitable temperature to germinate. The vegetables come in the market as early as the normal sowing times for field sowing approaches. With the rising delicacies of diet, the need of vegetable is growing perpetually all round the year. Keeping in view the consistent demand of vegetables, forcing vegetable gardens have been developed. These gardens are very common in western countries where the environmental factors are not always favourable for growing vegetables under open conditions throughout the year. Growing of vegetables needs artificially controlled favourable microclimatic conditions. These gardens are usually

\* The land developed by meandering or braiding of course of river.

set up around the cities where the expertise of skilled man power is available. The vegetable growing is practised in cold beds, hotbeds, cellars, shades, poly-houses, lath-houses, etc. Much demanded and highly priced vegetables are grown. Mostly tomato and cucumber which remain in demand continuously, cannot be grown throughout the year under open condition. After having a control over temperature, humidity and light intensity, these vegetables can be grown under protected conditions when climatic condition under open does not permit their cultivation. Forcing of vegetables to grow nearby the centre of consumption facilitates the fresh availability of the produce and also provides ease from arranging transportation to carry them. Growing of mushroom under artificially forced conditions is very much sought today. Mushroom, being fat free and low calorie yielder, remains in much demand.

### Highlights

- Growing of vegetables out of their normal growing season constitutes forcing garden.
- Forcing garden is very popular in western countries.
- In country like India where diverse sets of climatic condition prevail during different times of the year in one or the other locality, there is no more need of forcing gardens. Hitherto, in view of growing demand of speciality produce like capsicum, cucumber, gherkins the forcing gardens are catching commercial application.
- Highly priced and much demanded vegetables like tomato, cucumber and mushroom are very suitable.

### PROCESSING GARDEN

During the harvesting season, there is glut of particular type of vegetables. The vegetables being perishable in nature cannot be kept longer in garden fresh condition. Furthermore, due to bounteous harvest during the peak season of maturity/harvesting, the prices go down tremendously. The farmers are compelled to sell even at distress sale price as the consumer preferable quality of the produce lasts soon. Processing gardening of vegetables has its scope behind these considerations. After diverting a lot of vegetables for processing, the glut of produce at a particular harvesting time can be avoided. The produce can be processed and sold during the time when the price in the market is good. In India, due to inadequate post-harvest handling, about 25 to 30 per cent of fruits and vegetables are lost annually. By processing, such huge losses can also be minimized.

Processing gardens chiefly aim to supply vegetables to processing factories and are mostly located around processing industry. The vegetables of a particular type with particular varieties are grown for processing purpose. Bulk production and regular supply of vegetables throughout the season are required to run the processing units. Heavy soil types capable of supporting good crop yield are considered suitable for processing gardens. Arkel (dehydration) and Early Badger (canning) varieties of peas, Roma, Punjab Chhuhara and S-152 varieties of tomato and Kufri Chipsona (for chips making) variety of potato are of worth for processing industry. Sprouting broccoli, spinach and lima bean can be used for freezing. Onion and garlic has also potential in processing industry after drying or dehydration. Ofcourse, processing gardens are not very common. The processing units purchase the vegetables from market directly. But many private companies are coming in the field of processing hence processing garden may be seen with prospective.

## Highlights

- Processing Garden is intended to supply vegetables to processing units.
- Located around processing units.
- Best alternative to minimize post-harvest losses which account to 25 to 30 per cent losses of horticultural produce.
- Requires bulk and consistent production.
- Heavy soil is considered good as it is supportive of heavy production.
- Pea, tomato, potato, sprouting broccoli, lima bean, onion, garlic etc. are specially suitable.

## SEED PRODUCTION GARDENING

Improved seeds of vegetables capable of high yield and tolerance to biotic (diseases and pests) and abiotic (climatic) stresses are in great demand. Many private entrepreneurs are in the field of seed production. This type of vegetable gardening aims to cultivate vegetables for seed production purpose. This is a highly specialized farming and requires due care at different stages of crop growth. The cultivation of vegetable is practised at commercially large acreage. Due consideration regarding selection of suitable site is paid. For example, for producing seeds of early varieties of cauliflower, hilly terrains where low temperate regimes prevail for considerable period is selected. The varieties within a single type of vegetable are grown at proper distance from another variety of the same vegetable. The distance maintained between two varieties to produce genetically pure seed is called as *isolation distance*. For highly cross pollinated vegetables like spinach, carrot, onion, radish, turnip and cole crops isolation distance of 1,000 to 2,000 metres depending upon seed crop is maintained. Often cross pollinated crops like brinjal, chilli and okra are grown at an isolation distance of 200 to 400 metres from another variety of same crop. Cucurbits are grown at an isolation distance of 400 to 800 m. Highly self pollinated vegetables like lettuce, tomato, beans and garden peas require only 50 to 100 m isolation distance. Strict roguing is practised. Removal of off-type plants is termed as *roguing*. Plants which are not matching to varietal characteristics are removed. In case of cross pollinated crops, roguing must be completed before flowering. In seed production farming, rearing of honey bees in hives increases the yield of seed. They help in transfer of pollen grains from one flower to another and seeds setting is increased. Application of pesticides is done during early morning or evening when bees are inactive. It helps avoid injury to honey bees colony.

In seed production the land remains occupied for a considerably long period. Even after maturity till the seeds start drying or dry completely, the seed crop remains standing in the field. Maintaining the crop for longer period in the field increases the cost of watch and ward.

## Highlights

- Practised on commercially large acreage.
- Highly specialized and requires special care like roguing, maintaining isolation distance etc.
- Rearing honey bees increases seed production.
- The land remains occupied for considerably long period.
- Being longer duration crop, the cost of labour, watch and ward is more.

## FLOATING GARDEN

This is a very artistic and peculiar type of vegetable gardening. It is practised in *Dal* lake in Kashmir. Most of the vegetables supplied to Srinagar are produced in floating garden. To grow vegetables, a floating base is prepared from the roots of *typha* grass. This grass grows naturally in wild form in the lake. When floating base is ready, seed sowing or transplanting is done over leaf compost available locally itself. Time to time as and when needed, intercultural operations like removal of weeds, watering, application of fertilizer, pesticides etc. are made through boats.

### Highlights

- Practised in *Dal* lake in Kashmir.
- Leaf of *typha* grass is used as a base for raising vegetables. The *typha* grass grows naturally floating in lake.
- Vegetables are grown after composting over leaf of *typha* and following manuring, application of fertilizers, pesticides and other inputs, as per need.

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