

## carrot

### climate:-

climate and soil factors have great influence on shape and colour development of roots. carrot is grown as a spring summer and autumn crop in hills and as a winter crop in plains of north India. Ideal temperature for germination of seeds is  $7.2 - 23.9^{\circ}\text{C}$ , while for root growth and development it is  $18.3 - 23.9^{\circ}\text{C}$ . Tropical types produce roots even at a temperature of  $25^{\circ}\text{C}$ .

European types require a low temperature of  $4.8 - 10.0^{\circ}\text{C}$  for 4-6 weeks at any time during development of roots or after they mature either in storage or in field. seed stalk formation takes place only when plants are subjected to a subsequent temperature of  $12.2 - 21.1^{\circ}\text{C}$ .

### soil:-

Deep and well drained friable soils are essential for proper root development. For early crop, sandy loam and for heavy yield, silt loam is preferred. The ideal soil pH is  $6.6 - 7.1$ .

### Manuring :-

In addition to 20-25 tonnes of farm yard manure, a fertilizer dose of 40-50 kg N, 40-50 kg  $P_2O_5$  and 80-100 kg  $K_2O$  is recommended for the crop, of which entire dose of farmyard manure, half N and full P and K are to be applied as basal dose at the time of final land preparation. Remaining dose of N can be applied at the time of first hoeing.

### Irrigation :-

~~under~~ Mostly ~~ap~~ autosprinklers can provide an efficient method to irrigate carrots. Position the sprinklers so that water reaches all parts of the carrot bed. water once each week during morning hours so surface water will dry quickly, helping prevent fungal diseases. Alternatively, check the bed after watering to ensure water has penetrated several inches into the soil. A drip irrigation system is also an efficient irrigation method for carrots.

## Intercultural operations:-

carrot seeds take about a week to germinate and initial growth of seedlings is rather slow. First irrigation should be given immediately after sowing followed by another 4-6 days after. Soil should be kept moist by frequent light irrigation for proper growth of roots. Excessive vegetative growth.

Since seedlings grow very slowly care should be taken to remove weed growth during initial stages.

carrot roots do not come up like that of radish and hence, earthing up is not required. Soil should be hoed frequently to allow proper aeration and to prevent discolouration of crown.

## Diseases and their controls :-

\* cavity spot :- The main symptoms of the Disease are sunken elliptical, gray lesions across the root. The outer layer of the root will turn dark with elongated lesions.

control :- Avoid the fields that suffered with the carrot spot disease in previous crops. Organic fungicide can control the disease efficiently.

\* Black rot :- this disease causes damping-off of seedlings. this disease will turn lower portion of petioles black.

control :- \* Implement long crop rotations

\* plow crop residue after every harvest

\* use plant resistant varieties.

\* cercospora leaf blight :- The main symptoms of the diseases are small, necrotic flecks on leaves later turn to chlorotic halo expand into tan brown spots. young seedlings or foliage is mainly affected with this disease.

control :- \* used only pathogen-free seed.

\* Implement crop rotation.

\* plow the crop after every harvest.

cottony rot :- small, water-soaked, soft lesions on the crown and roots are the main symptoms of this disease.

control :- \* There are seed varieties that are resistant to this disease.

\* using drip irrigation is a good control.

Downy mildew :- The main symptoms of the disease are yellow spots on the upper surface of leaves, white fluffy growth on

underside of leaves.

control!:- \* Use pathogen-free seed.

\* Maintain spacing and avoid crowding.

\* Implement plant rotate with non-umbelliferous varieties.

Harvesting and yield:-

Roots grown on ridges are usually harvested after loosening soil with a spade and by pulling out roots by grasping top.

In flat ground, top is removed close to ground and roots are dug out with a spade.

A light irrigation is usually given before harvesting for easy uprooting.

Yield varies with season, climate, varieties etc. Tropical types yield 20-30 t/ha. and European types yield 10-15 t/ha.

Harvested roots are put in mulberry basket and dipped in flowing water for washing. Roots are then partially dried, trimmed and graded before sending to

distant markets. Trimming, grading etc. are done at a cool place. Fresh carrot roots can be stored for 3-4 days under ordinary conditions and for six months at  $0^{\circ}\text{C}$  and 93-98% RH.