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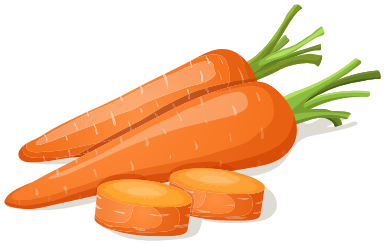
Growing Carrots in Alaska



Some Facts

Carrots are one of the most popular vegetables. Alaska-grown carrots are high in quality due to a greater accumulation of sugars in the root. Diseases such as aster yellows, causing carrot bitterness in other areas, is not found here.

The carrot *(Daucus carota* var. *sativa)* was introduced from Europe and is well adapted to our growing conditions. It is a biennial plant grown as an annual. Carrots are an excellent source of vitamins A, B, C and B_2. Fresh market carrots are primarily produced in Arizona, California and New Mexico, while carrots for processing are grown in more northern states.

Types and Shapes

Slender, long (10 to 12 inch), Imperator-type carrots are the most popular. The Nantes type is slightly larger in diameter but more uniform throughout its length (6 to 7 inches). The shorter and larger diameter types, such as Chantenay, are grown primarily for processing. Mini or ball-type carrots (sometimes called French forcing) are extremely short, similar to a radish in size and shape. These specialty carrots are sometimes grown in containers and served whole with the tops attached. Several types of carrots are suited for the cold soils of Alaska, but the largest demand is for long and slender carrots.

Soil Conditions

Carrots develop best in warm, well-drained deep silt or sandy loam soils. Compacted or poorly drained soils result in bent or forked roots with heavy top growth. Alaska soils can be prepared by rototilling and mounding the soils into raised beds. The mounded rows should be 10 to 12 inches high and 12 inches wide at the top. The sides should be at right angles for the most heat gain from the sun. Rows should run north and south, if possible, to expose both sides of the bed to the sun during the course of the day. Even a few degrees heat gain can be important. Carrots do well in cool climates but not necessarily cold soils. Soil acidity (pH) should be from 6.5 to 7.0. Yields may drop at lower pH readings, because phosphorous becomes less available at lower pH values.

Planting

To seed an acre of carrots requires 3 pounds of seed. If pelleted seed is used, the actual weight may be less. Carrots are often seeded in two rows along the prepared raised bed. Seeds should be planted no more than ½ inch deep. Place soil firmly over the seeds to ensure good contact. Carrots are slow to germinate. In a soil at 50°F, germination requires approximately 18 days and in a 60°F soil, approximately 12 days. Soil moisture is important since the seeds are planted at a shallow depth. Planting the seeds deeper for more moisture is not recommended because seedlings may not have enough energy to push above the ground. Shallow planting and adequate moisture are both very important for rapid plant emergence.

Thinning

As soon as the seedlings have fully emerged, thin the carrots to a spacing of 2 inches apart.

Fertilizer

Soil testing should be used to determine fertilizer requirements. Alaska soils are generally low in phosphorous and up to

1,000 pounds of 8-32-16 analysis fertilizer may be required per acre. Broadcast half of the total fertilizer amount *before* rototilling to ensure mixing throughout the root zone. Place the remaining half of the fertilizer at the center of the double rows. Additional nitrogen may be needed in regions with heavy rainfall. Uniform and rapid growth through the summer produces the best quality carrots.

Irrigation

Commercial carrot production should not be attempted unless irrigation is available and reliable. Early moisture is important for carrot production. Irrigation through the summer should be timed to avoid allowing the soil to dry out.

Weed Control

Carrot leaves are finely dissected and grow slowly. They are not good competitors or able to shade out weeds or grasses. Good weed control is therefore important to provide an unrestricted growing environment.

Cultivation

If the soil is well prepared, cultivation before seeds are planted may not be necessary. Cultivation brings weed seeds to the surface for germination and removal prior to seeding. As the shoulders of the carrot roots enlarge, they may become exposed to light and develop an undesirable "greening." Prior to this exposure, cultivation to push soil up against the carrot stem is necessary for a high-quality crop.

Insect Pests and Disease Control

No specific control measures are currently needed in Alaska.

Yields

Commercial yield of carrots is between 15 and 20 tons per acre. For gardeners and smaller farms, a yield of 2 to 2½ pounds per foot of row can be expected. In Alaska, with good management, these yield estimates can be realized or exceeded.

Harvesting and Storage

Harvested carrots should be handled with care to avoid bruising and placed in cold storage immediately after harvest. The ideal storage temperature is 32°F. Relative humidity should be maintained at 90 to 95 percent, while avoiding condensation or free water. For a grower with small quantities of carrots or inadequate humidity control, layering carrots in damp (not wet) sand will help carrots retain firmness and minimize shrinkage due to fungal attacks or desiccation.

Carrots may be washed at harvest time, but should dry before going into storage.

Marketing

Carrots offered to the consumer should be clean, attractive U.S. Grade A products. If sold in a package, the diameter and color of the carrots should be uniform. A grower must be able to consistently produce high-quality carrots to be competitive in the market. Consistent dependable service to a retailer is almost as important as the product itself. Other marketing options for growers include farmers markets or roadside stands. Knowledge of local marketability is an important prerequisite and consideration for producing carrots.

Alaska-grown carrots have an advantage over carrots shipped into the state. The sugar content is generally higher when the carrots reach the marketplace. The high concentration of sucrose accounts for the pleasing taste of Alaska-grown carrots.

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