

Growing Carrots and Other Root Vegetables in the Garden

Vincent A. Fritz

Extension Horticulturist Department of Horticultural Science Southern Research and Outreach Center

Copyright © 2012 Regents of the University of Minnesota. All rights reserved.

Carrots, beets, parsnips, radishes, turnips, and rutabagas are the most commonly grown root crops. They all have similar cultural requirements and grow best in cool weather. Since they are hardy, they may be planted early in the spring, and left in the garden until fall. In addition, tops of beets and turnips are commonly used as cooked greens and can be harvested while the plants are young.

Soil Preparation and Fertility

Proper soil preparation is very important in achieving success with the root crops. They grow best in a deep, loose soil that retains moisture yet is well-drained. Root crops do not grow well in very acid soils. **Always** remember to take a soil sample for pH and nutrient analysis and apply fertilizer and/or lime appropriately. Nitrogen recommendations for beets, carrots, parsnips, and rutabagas are about $\frac{3}{4}$ to 1 cup of urea/100 sq. ft. Apply half during seed bed preparation and sidedress the other half in mid-season. For radishes and turnips, nitrogen recommendations are about $\frac{1}{2}$ cup urea/100 sq. ft. to be broadcast and incorporated before planting. P and K application should be applied according to soil test recommendations. The optimum pH range is between 6 and 6.5. Liming will raise the pH of acid soils. You can improve soil conditions by adding well-rotted manure or compost. **Do not** use fresh manure as it can stimulate branching of the roots, compromising the quality of the crop and may increase weed problems. Deeply till the soil, then smooth the surface in order to prepare a good seedbed. *Do not* use a weed and feed type fertilizer. They contain weed killers that will kill vegetable plants.

Planting and Thinning

Root crops are usually planted directly in the garden. Plant radishes and turnips beginning April 15 for a spring crop, and again August 1 for a fall crop. Start planting carrots and beets beginning April 15. Plant parsnips beginning May 1. For a continuous supply of young carrots, make two or three plantings spaced three weeks apart. Rutabagas require a long growing season and should be planted May 15 for a fall crop. Radishes and parsnips can be seeded together in the same row. The radishes will be ready to harvest in 3-5 weeks and will not interfere with the later-maturing parsnips. This system, called "intercropping," will conserve space in the garden.

Root crops must be thinned to allow room for turnips to develop properly as soon as the plants are large enough to pull. Thin carrots and radishes as soon as they reach a small, edible size. If you wish to use the tops of beets for greens, you can delay thinning until they reach usable size. Carrots,

beets, parsnips, radishes, and turnips should be thinned to a 2-inch spacing. Rutabagas should be thinned to a 8-inch spacing. Long-rooted vegetables such as carrots and parsnips should never be transplanted; otherwise, as they develop, the roots will fork.

Watering

Proper watering can make the difference between good production and poor production. Vegetables need at least 1 inch of water from rainfall or irrigation each week during the growing season. Always soak the soil thoroughly when watering. This helps to promote good root development.

There is little or no value in a light watering that only wets the surface of the soil. In fact, light waterings often promote shallow root development and can increase the crop's susceptibility to hot weather and drought stress, and reduce product quality. On most soils, watering once a week is sufficient. Very sandy soils may require more frequent watering.

Weed Management

The root crops grow slowly for the first few weeks after planting and cannot successfully compete with weeds. Frequent, shallow cultivation will control the weeds and keep the surface of the soil loose. It is best to start cultivating before the weeds become a problem. The roots of the root crops are very close to the surface of the soil, so it is important not to cultivate too deeply. Cultivate just deeply enough to cut the weeds off below the surface.

Harvesting

Carrots are usually harvested when the roots are $\frac{3}{4}$ inches in diameter at the upper end, but you can harvest them any time they reach a usable size. To harvest, push the root to the side and pull it out of the ground. If you are removing the entire crop at one time, it may be helpful to use a spading fork to loosen the soil next to the plants before pulling them.

Beets and turnips are harvested when they reach a usable size. For best quality, do not allow them to become overgrown. As with carrots, spading the soil next to the plants will make them easier to pull.

Parsnips and rutabagas are usually left in the ground until late fall. The roots can be 10-12 inches long, so be careful not to break them when harvesting. It is best to dig them up with a spading fork.

Radishes are usually ready to be harvested in 3-5 weeks after planting. They can be pulled any time they reach a usable size. They may get pithy and develop a strong taste if they are left in the ground too long.

Potential Problems

Carrot root flies are maggots that feed on and destroy the roots of many root crops. Control by harvesting plants as soon as possible. **Do not** apply insecticides to plant parts that are to be eaten. A soil insecticide may be used to control maggots at planting time.

Flea beetles chew small, round holes in leaves. They can spread disease and destroy the crop, especially when the plants are very young.

Forked roots may be due to rocky or stony soil or heavy soil. See section on soil. Transplanting of long-rooted vegetables will also lead to forked roots.

All tops with no roots or small roots is a condition usually caused by planting too close or by not thinning plants. Excessive nitrogen fertilization can also contribute to extensive top growth at the expense of root growth.

Hot tasting/pithy radishes may result from hot weather and dry soil, or harvesting too late.

Aster Yellows (carrots). Common symptoms of this disease are hairy roots and yellow tops. The disease is spread by plant-sucking insects called aster leafhoppers.

Many of the problems associated with flying insects can be minimized by using a floating row cover. Providing a physical barrier to insect attack while allowing light and rainfall to penetrate will result in an insect-free crop that may also mature earlier. This material is often made of a spunbonded polyester that resembles that of interfacing, commonly used in sewing. With gentle care, the cover can be used for several seasons. National seed catalogues and local garden centers offer this product routinely.

Source <http://www.extension.umn.edu/distribution/horticulture/dg0435.html>