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## G90-1004 Growing Radishes and Table Beets

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## Growing Radishes and Table Beets

Radishes and beets are easy to grow. Little space is required for them, and small successive plantings can yield an abundance of produce.

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*Susan D. Schoneweis, Extension Coordinator, Home/Environmental hort*

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The radish, *Raphanus sativus*, is thought to have originated in East Asia, but the exact location is unknown. Radishes are one of the fastest growing vegetables, ready to harvest in 22 to 60 days. They prefer cool growing temperatures, and quickly become pungent (hot) when the weather gets too warm.

Varieties (cultivars) may have round, long tapered, or oblong roots. Colors include crimson, hot pink, pink, white, bicolored and black.

Quick maturing radishes (30 days or less) are often called spring radishes, but may be grown in fall gardens. Radishes are less apt to bolt (form flowers) under cooler, shorticultureer fall days and can withstand light frosts.

Radishes requiring more than 50 days are larger, store well and are often called winter radishes. Radishes are a good source of vitamin C, and have only 100 calories per pound.

## Varieties and Cultivars

The following spring radishes vary in skin color, but all have white flesh.

**Cherry Belle** has been a popular cultivar for many years. Maturing in 22 to 25 days from planting, it is among the earliest varieties available.

**Champion** and **Crimson Giant** are other cultivars with round roots and crimson to scarlet skin.

**French Breakfast** is oblong to olive shaped, 1 3/4 inches long by 5/8 to 3/4 inches wide, with rose-scarlet skin to white at the bottom.

**Purple Plum**, a newer cultivar, has bright lavender skin and mild, crisp, white flesh. It matures about a week later than the cultivars mentioned earlier.

The roots in **Easter Egg Hybrid** come in many colors. Ready in 25 days, the variety of colors livens up relish plates. **White Icicle** produces 5 to 6 inch long tapered roots, pure white inside and out.

All-season radishes can get very large without becoming pithy. **Summer Cross Hybrid** (Daikon) is a giant, white Oriental radish. Usable when roots reach 6 inches long, they will grow to a length of 14 inches. Daikon radishes are eaten raw and used in Asian cooking.

Winter radish cultivars produce roots that may range from 2 to 3 inches in diameter and 6 to 9 inches long. **Round Black Spanish** has black skin but crisp white flesh. It matures in 55 to 60 days but can be stored for some time.

There are many radish cultivars available. Mail-order seed catalogs offer others not listed in this NebGuide. The Seed Savers Exchange, RR3, Box 239, Decorah, Iowa 52101, an organization dedicated to preserving open-pollinated cultivars of plants, publishes a detailed listing of all known available vegetables. For more information contact the Seed Savers Exchange directly.

## Cultural Requirements

Radishes are hardy and prefer cool growing conditions. Seeds germinate best at soil temperatures above 45° F, but should be planted so they mature before hot weather arrives. Time fall plantings so the roots mature during the cooling temperatures of fall. Suggested planting periods for spring and fall radishes for regions of Nebraska are given in *Table I*:

**Table I. Radish planting schedule.**

	Spring		Fall	
	<i>Earliest</i>	<i>Latest</i>	<i>Earliest*</i>	<i>Latest</i>
East	4/5	5/10	7/30	8/20
Central	4/15	5/20	7/20	8/10
West	4/20	6/5	7/10	7/30

\*Early dates are for winter and all season varieties; spring varieties should be planted closer to the latest fall planting

date.

Row covers of spun-bonded polyester and polypropylene fabrics can be draped over crop rows after seeding and anchored with soil to protect the new plants. Row covers can help extend the growing season in spring and fall.

Radish seeds should be planted 1/2 inch deep, 1 inch apart. A wide row 8 to 12 inches across uses garden space more efficiently than a single row. Rows should be spaced 1 to 1.5 feet apart to allow for cultivation. Avoid planting any more spring radishes than can be consumed in a shorticulture period of time. It's better to plant a small amount of seed every seven to 10 days (stagger planting) so the harvest is spread out and less produce is wasted.

Instead of planting separate rows of radishes, try sprinkling a few radish seeds in as you plant slower germinating seeds such as carrots, beets, lettuce and Swiss chard. The radishes germinate quickly and mark the rows so it is easier to tell where you already planted. The radishes will be ready to harvest as the other plants need to be thinned. As you stagger plant all of the above cool season vegetables, intercrop radishes for a constant supply.

## Insects

Row covers are an increasingly popular tool for preventing insect infestations on early plantings. Water, light and moisture pass through the fabric, but insects are excluded. Row covers can be used on many crops to prevent insects from laying eggs and feeding on the plants.

Aphids and flea beetles are two common insect pests. There are insecticides available to home gardeners for use on radishes. Before using an insecticide on a crop, read the label to determine if the chemical is labeled for that crop. Two types of insecticides becoming more popular are horticultureicultural crop oils and insecticidal soaps. Both work on contact.

Oils smother small pests such as aphids and spider mites. Ingredients in insecticidal soaps penetrate the insect's body and disrupt the cell membrane. They cause the contents of the cells to leak out, killing the target pest. **Always read and follow the label carefully before using any agricultural chemical.**

## Harvesting and Storage

Spring radishes may be harvested when roots reach 1/2 to 3/4 inches in diameter. Harvest can continue until the radishes reach 2 inches or larger and become soft and pithy.

Remove the tops as you harvest to keep the roots from wilting. Add the greens to your compost pile to recycle the nutrients, and add organic matter back into your garden soil.

It's best to harvest spring radishes as needed, but they may be kept 10 to 14 days in the refrigerator. Winter radishes keep longer if stored in a cool place. They may be stored for about three months in the refrigerator.

## Table Beets

Table beets, *Beta vulgaris*, var. *crassa*, are members of the *Chenopodiaceae* or Goosefoot family. This family is so named because the leaves of many of its members resemble the footprint of a goose.

Beets originated in the region around the Mediterranean Sea. Table beets are closely related to sugar beets and Swiss chard; the earliest known beets resembled chard with no enlarged root.

Beet roots usually are served boiled and buttered, pickled or in salads, adding color to meals. There is little color loss if they are not pared or cut before cooking.

Table beets contain only about 30 calories per 1/2 cup sliced beets, and are a good source of folic acid. Beet tops, high in vitamin C, may be used as food and are prepared in the same manner as spinach.

Beet tops and spinach also contain oxalic acid. Consuming large amounts of either with a low calcium diet can cause a calcium deficiency and diarrhea. It is best to eat a balanced diet to avoid this problem. Use tender young beet leaves as the oxalic acid content increases in older plants in late summer and fall.

## Varieties and Cultivars

Most people are familiar with red table beets. There are also novelty yellow and white fleshed beets. Besides globe shaped beets there are a few cylindrical and tapered cultivars.

*Detroit Dark Red*, *Ruby Queen* and *Perfected Detroit* have performed well in Nebraska trials and are the leading garden varieties in the United States. These varieties produce globe shaped roots with dark red flesh excellent for canning, and eating freshly prepared.

*Crobsy Egyptian* and *Early Wonder* are flat or globular early maturing cultivars. *Cylindra* and *Formona* are long cylindrical shaped beets that yield many uniform slices. *Avenger* and *Red Ace* are hybrid beets with increased vigor and earliness. They produce medium-red, globe-shaped roots and glossy green tops good for cooking. Plant breeders have incorporated some of the sweetness of sugar beets into table beets; *Warrior* and *Big Red* are two such hybrid beets.

## Cultural Requirements

Beets are hardy. They grow best under moderate temperatures, but may be planted in the spring and left in the garden until late in the fall in all regions of Nebraska. They can be grown in nearly all types of soil, but do best when soil is friable, fairly deep and moist, but well-drained.

For high yield and quality, table beets require an adequate supply of moisture throughout the season. Interrupted growth because of inadequate water may cause malformed roots. An inconsistent supply of moisture may result in color difference in alternating rings of the root. Supplemental irrigation will be beneficial in the eastern third of Nebraska and is essential in the remaining two-thirds. Beets require little space (5 to 10 feet of row per person per year), and are ready for harvest seven to eight weeks from planting. Sequential sowings every two weeks ensure a continuous supply of beets.

## Soil Preparation and Fertilizer

Beet seedlings are small and weak, so good seedbed preparation is important to obtain the stand needed for high yields of top quality roots. Do not work soil when it is wet, and do not plant immediately after heavy, trashy crop residues are turned over. Where erosion is not serious, spading or plowing in the fall favors preparation since freezing and thawing "mellows" soil over winter. Incorporating 1-3 inches of compost in the fall can help improve soil structure by increasing the water holding capacity and improving drainage. The seedbed should be smooth and well-worked, but firm.

Compared to other vegetables, beets require a moderate amount of nitrogen, a relatively low amount of phosphorus, and a high level of potassium. Most Nebraska soils usually are well-supplied with potassium, so large quantities of this element need not be applied.

Beets also have a high requirement for the micronutrient boron, which soils in Nebraska adequately supply. Additional boron is not recommended since snap beans, cucumbers, peas, strawberries and other garden crops are sensitive to injury from excessive boron.

For early planting, when soil is cool, a moderate application of starter fertilizer helps reduce damage from damping-off disease organisms by helping get the seedling off to a more vigorous start. Use one cup of high analysis starter fertilizer such as 11-48-0 or 10-35-5 per 100 feet of row applied in a band 1 to 1 1/2 inches below the row where the seed is planted.

Phosphorus (represented by the second number on the fertilizer label) is important for rapid seedling growth, early maturity and maximum yields. When applied as a band below the seed, the roots grow into the high concentration of phosphorus for maximum uptake.

### Planting

Beets tolerate light frost and seed germinates at lower temperatures, but less damping-off occurs and stands are better when the first planting is delayed until the soil temperature at seeding depth is 50° F or higher. Beets require 50 to 55 days to first reach harvestable size (1 1/4 to 1 1/2 inches diameter). The last sowing should be early enough to allow enough time for beet roots to enlarge before a severe freeze destroys plant tops. Earliest and latest planting and harvest dates for different regions in Nebraska are given in *Table II*.

Seeds are placed 1/2 to 1 inch deep, 2 to 3 inches apart in rows 12 to 30 inches apart. Closer row spacing allows beet foliage to cover soil better, keeping it cooler, and helps prevent germination of warm season grassy weeds. Wider row spacing facilitates use of mechanical cultivating equipment. Heavier seeding rates in rows should be used for early plantings. Two ounces of seeds plants 100 feet of row.

In dry seedbeds and on sandy soils 1/4 to 1/2 inch of water following planting helps assure rapid germination important for obtaining good uniform stands.

Beet "seeds" are really dried beet fruit containing several seeds so more than one seedling may be produced. Thinning may be necessary. There are some newer cultivars of beets that have monogerm seed; only one plant grows from each seed.

The final plant stand should be 6 to 12 healthy plants per foot of row for beets planted in a single row. One can also plant beets in wide rows (10 to 12 inches across) for more efficient use of garden space. Spacing between seed is 2 to 3 inches. If planted closer together, the plants should be thinned to leave sufficient space to grow. The tops, an excellent source of vitamin C, can be used in salads or as cooked greens.

**Table II. Estimated planting and harvest dates for table beets in different regions of Nebraska.**

	Planting		Harvesting	
<i>Region</i>	<i>Earliest</i>	<i>Latest</i>	<i>Earliest</i>	<i>Latest</i>

East	4/10	8/10	6/20	10/20
Central	4/20	8/5	6/25	10/15
West	4/30	7/25	7/10	10/5

## Weed Control

Good seedbed preparation is one of the best ways to prevent weed problems in table beets. Developing weeds are most easily controlled and less damage is done to the crop when weeds are destroyed when small. Remove any weeds in the rows when plants are thinned. Young beet plants are easily injured and should be hoed or cultivated with care.

Beets planted early may germinate slowly. A few faster germinating radish seeds mixed with the beet seeds help mark the row should cultivation be necessary before beets are easily seen. Hoe or cultivate shallowly and do not mound or throw soil around the plants.

Cultivating or hand-weeding are the recommended methods of controlling weeds in small gardens. There are a few herbicides available to home gardeners with large plantings.

## Insects

Flea beetles (small beetles that jump quickly and cut holes in leaves in early spring), leafminers, webworms (slender green worms with black spots and stripes) and aphids are some of the more common insect pests of table beets. Although damage may become serious if not controlled, effective materials are available.

Row covers can be used to help exclude insects from beet plantings. There are several insecticides available to home gardeners for use on table beets. ***Read and follow the label carefully before using agricultural chemicals.***

## Diseases

Leaf spot, viruses, and damping-off organisms that destroy small seedlings are some of the diseases attacking table beets.

Virus diseases are best prevented by controlling flea beetles and leafhoppers known to transmit virus particles. Crop rotation, good seedbed preparation, adequate seeding rates and the use of high quality treated seed and starter fertilizer are good practices to follow. They are particularly important in soils frequently cropped to beets and in gardens where stands have been reduced because of damping-off organisms.

## Harvesting

Beet tops may be used like spinach. As you thin the stand, save the small beets and use the tops in salads or as a cooked vegetable. Table beets are ready for harvest when they reach 1 1/4 to 1 1/2 inches in diameter. These beets are choice quality, but sizes up to four inches are quite satisfactory when sliced, diced or cut into strings following cooking and paring. With good growing conditions beet roots may reach 1 1/2 inches in diameter in about seven weeks.

The rate at which beets grow after they begin to swell is partially dependent upon the number of plants per row. Growth rate is slower at higher plant populations and there are more choice sized beets for a longer time. These may be harvested throughout the season, allowing the other, smaller beets to enlarge.

Beets can withstand frost and mild freezing but should be harvested before a hard freeze occurs. Beets can be expected to keep from one to three months if stored at 32° F under conditions of high humidity. Small beets are softer and shrivel faster than large beets in storage, so roots should be topped and sorted by size before they are stored.

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