Growing onions in Minnesota home gardens

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Photo by Cindy Tong

Onions (*Allium cepa* L.) are related to garlic, chives, leeks, and shallots. Storage onions grown in Minnesota generally are long-day types that require 14 or more hours of daylight to form bulbs. Overcast skies and cool temperatures during the growing season will delay bulb formation. Sweet or mild onions are "short day" onions, and although they can be grown in Minnesota, they will generally develop small bulbs. There are also bunching or scallion types grown for their green and white stems that do not form bulbs. Egyptian "walking" onions are perennial, and produce clumps of bulbs. When the clump becomes heavy, it collapses and the bulbs form roots where they land. They are also grown mainly for their edible stems. All onions require full sun for optimal growth.

Planting

Onions can be direct seeded or grown from transplants. Direct seed as soon as soil can be worked. Sow seeds in a 2 inch wide band, 1/4 - 1/2 inch deep in rows 12-18 inches apart. After seedlings emerge, thin to 3-4 inches apart.

Transplants can be purchased from some seed companies. They can tolerate light frosts, so can be planted when temperatures reach 50° F. Plant them pointy end up, about 2 inches deep and 3-4 inches apart.

You can also raise your own transplants by planting seed 10-12 weeks before planting outside, so sow seeds in February for May plantings. Sow seeds 3/4 inch deep, and keep evenly moist. Loosen plants when ready to transplant, trim roots to 1/2 inch and tops to 4 inches in length. Plant 2 inches deep, 3-4 inches apart in rows 12-16 inches apart.

Onions can also be planted from sets. Most of the sets available from local stores in Minnesota are of the short day type and will usually get as large as long day onions. If using sets, plant them as soon as possible in the spring.

Soil pH and fertility

Onions grow best in well-drained soil with pH of 6.5 and high organic matter. Have your soil tested (see *Understanding Your Soil Test Report*) to determine your soil's pH and whether it should be amended. Incorporate well-rotted manure or compost at planting. Addition of manure or compost can add micronutrients and organic matter to soil (see *Composting and Mulching*).

Onions require a good supply of available nitrogen, but too much nitrogen can result in late maturity, large necks that are difficult to cure, soft bulbs, green flesh, and poor storage quality. Side dress fertilizer after root systems are well-developed once or twice during the growing season with urea at a rate of 1 pound per 25 feet of row.

Continuous use of high phosphorus fertilizer such as 10-10-10 or 15-30-15, or high rates of manure or manure compost results in phosphorus buildup in the soil. Although phosphate fertilizer applied to soil is bound tightly and resistant to movement in the soil, some runoff may occur. It can then become a major pollution concern in our lakes, rivers and streams. High levels of phosphorus support over-production of algae, which causes significant reduction in water quality (see *Preventing Pollution Problems from Lawn and Garden Fertilizers*). If your soil tests high in phosphorus, use a low phosphorus (such as 32-3-10, 27-3-3, or 25-3-12) or no phosphorus (such as 30-0-10 or 24-0-15) fertilizer at the rate of 1/2-1 pound (1-2 cups) per 100 sq. ft.

Watering

Photo by Dave Hansen

Onions are shallow-rooted and require constant moisture for proper growth. Proper watering will enhance good production. Soak the soil thoroughly when watering, to a depth of at least one inch each week during the growing season. Sandy soils may require more frequent watering. Stop watering when bulbs have reached full size and tops have fallen. Mulching 3-4 inches deep with herbicide-free grass clippings, weed-free straw, or other organic material will help retain soil moisture and help suppress weeds, decreasing the need for frequent cultivation.

Controlling weeds

Onions do not compete well against weeds. Frequent, shallow cultivation will kill weeds before they become a problem. Onion roots 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 of the soil. Be careful not to damage the plants when cultivating.

Harvesting

Harvest onions when about half the tops are falling over and dry. Undercut and lift bulbs with a spading fork. Onions can be left in the ground for several days if the weather will be dry and warm, or brought indoors to cure and kept in a warm (75-90° F), well-ventilated area for 2-4 weeks until outer bulb scales are dry and the neck is tight. Inadequate curing will result in decay during storage.

When properly dry, onions can be braided or the tops can be cut off. Store onions in a cool, dry area. Do not let them freeze. They will start to sprout if kept above 40° F.

Common problems

Insects are not a major problem with onions, although onion maggots can be a potential pest. Onion maggots bore into plant stems, causing the plants to turn yellow and wilt.

Onion diseases are generally not a problem. Onions can be infected with several kinds of rot including Fusarium basal rot, Botrytis neck rot and bacterial soft rot. To avoid these diseases use only healthy transplants or sets, manage weeds in the garden, and take care not to injure onion bulbs while working in the garden. Resistant varieties are available for Fusarium basal rot. Plant garlic in an area where no onions, chives, leeks, shallots or garlic have been planted for the past 4 years.

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