



Onions and Related Crops

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The onion (*Allium cepa*) is one of the easiest vegetables to grow in the home garden. It was first introduced to the West Indies by the Spanish and was later brought to America by Spanish explorers. The onion was one of the culinary staples of the early colonists, who in turn introduced it to the American Indians. Onions are relatively hardy garden subjects and are usually planted early in the spring, four to six weeks before the average frost-free date.

Onions are available in red, white, and yellow varieties; mild or pungent flavor; globe or flat shapes; and storing or non-storing types. When you attempt to select onions for your garden, you will find a wide choice of varieties. Listed and described below are some recommended varieties of onions with the number of days to maturity appearing in parentheses.

Onion varieties are classified as either short-day or long-day types because daylength or average daily temperature can induce bulbing and affect the size of the bulb. Long-day onions begin to bulb with 14 or more hours of daylight and are bred for best performance in the North. Short-day varieties begin to bulb with 10 or 11 hours and are best in southern locations. Short-day varieties may perform acceptably in the north if the plants can be set out very early in the season.

Sets:

Several varieties are used for onion sets although they are seldom sold under varietal name but merely by color: red, white, or yellow. The two varieties most commonly used are Ebenezer and Stuttgarter.

Transplants

Yellow Sweet Spanish
White Sweet Spanish
Red Hamburger
Southport Red Globe
Walla Walla Sweet
Vidalia Sweet
Texas Grano

Seed

Dry Onions (yellow, long-day)

Early Yellow Globe
Norstar
Spartan Banner
Sweet Sandwich
Sweet Spanish Hybrid
Walla Walla Sweet
Yellow Sweet Spanish

Dry Onions (yellow, short-day)

Granex Hybrids
Grano Hybrids
Yellow Bermuda

Dry Onions (white, long-day)

Albion Hybrid
Ringmaster
Southport White Globe
White Lisbon
White Sweet Spanish

Dry Onions (white, short-day)

Crystal Wax
Hybrid White Granex
White Bermuda

Dry Onions (red, long-day)

Benny's Red
Lucifer Hybrid
Red Baron
Red Weathersfield
Southport Red Globe

Green (bunching) Onions (scallions)

Beltsville Bunching
Evergreen Bunching
Southport White Bunching
Tokyo Long White
White Lisbon
White Sweet Spanish

PLANTING

Onions do best in a fertile, well-drained soil that is high in organic matter. A pH between 5.8 and 6.5 is recommended because onions do poorly in extremely acid or alkaline soils. They are quite hardy and can be planted four to six weeks before the average frost-free date. Soils that are heavy and compacted should be improved with compost, manure, decayed leaves, peat moss, or other organic matter at the rate of 5 to 10 bushes per 1,000 square feet. Onions can be started from sets, transplants, or seed.

Sets. Growing onions from sets is the most successful method because the plants are quickly established and will become vigorous and strong. Sets are ordinarily used to grow green onions (scallions), although allowing them to mature will produce dry bulbs for winter storage. Purchase firm, dormant sets early in the spring and divide them into two size categories. Large set (larger than a nickel) are best used as green onions; also note that sets as big as a quarter are likely to produce seedstalks and the bulbs keep poorly. The smaller sets produce the best bulbs for large, dry onions. Experience has shown that round sets tend to

produce flat onions, while elongated or torpedo sets mature into round onions. To produce green onions, plant the larger sets 1-1/2 inches deep and close enough to touch each other. To produce dry onions, plant the small sets an inch deep and 2 inches apart.

Transplants. Transplants are preferred by many gardeners for growing large, dry onions that are sliced. Transplants are usually sold in bundles of plantlets at garden centers and through seed catalogs. If you purchase them from a local store, select stocky plants with bushy roots and bulblets the size of peas. Space the plants 4 to 5 inches apart in the row to produce large-sized bulbs. Set the transplants 1-1/2 inches deep and use a half-cup of starter fertilizer solution per plant.

Seed. Growing onions from seed is the least popular method of the three methods because of the long time required for their development and maturity. Seed is more commonly used when growing bunching onions; with these, instead of each seed producing a single large bulb, a cluster of slender onions (or scallions) is formed. Onion seed should be planted preferably in March and no later than May 1. Seed planted late will result in very little topgrowth at the time of bulbing and small onions. Therefore, it is advisable to use sets instead of seed after May 1.

Plant the seeds an inch deep in well-drained garden loam. In heavier soils plant the seed at a more shallow depth and cover with a layer of fine vermiculite to prevent the soil from crusting over the seed and inhibiting germination. Keep the seedbed moist to promote germination.

Care. Onions need a steady supply of moisture; consequently, the soil at rooting depth should never be allowed to dry out excessively. Because the bulbs are shallow-rooted, it may be necessary to irrigate quite frequently during dry periods.

Onions grown under hot, dry conditions tend to have a strong, fiery, unpleasant taste. A light mulch of straw or other suitable material will help conserve soil moisture. For best results, the area should be kept free of weeds by shallow cultivation, mulching, or by hand pulling.

Remove any plants from the row that form flower stalks and use them immediately as green onions. If allowed to mature, the resulting bulbs will not store well.

Harvesting. Onions can be harvested at any stage of development. Green onions are pulled when the base of the plant is 1/2 inch or larger in diameter. To develop long, white stems for green onions, place a 1-inch layer of loose soil up to the plants when they are 5 to 6 inches tall.

Dry onions are ready to be harvested when the plants are mature and the tops have fallen over. Avoid breaking over the tops to hasten drying because this will interrupt growth. Furthermore, the bulbs will be smaller and will not keep as well. It may be necessary to do so in wet years, however, because the drying process will be slow. In August when the

leaves begin to dieback and fall down, push the tops over with a rake so they lie along the ground; this exposes the bulbs to the sun and promotes ripening. When 95 percent of the tops have fallen over naturally, you can hasten the rest by undercutting the roots of the onions with a shovel or spade.

Pull the plants in the morning and allow them to air-dry in the garden until late afternoon. Then place the bulbs on screens or trays in a warm (85° to 90° F) to cure for two to three weeks. If you are going to braid the onion tops, do so after digging while they are still pliable. Instead of braiding you can cut the tops off 1 inch above the bulb after drying, but avoid cutting into the green moist tissue. After the curing process, store the onion bulbs in crates, netted sacks, or in trays in a cool, well-ventilated place. Most onions enter a period of dormancy after harvest and can be stored for several weeks to several months without sprouting. Length of storage depends upon several factors including the pungency of the onion (the sharper the taste, the longer it will keep), the type (yellow types keep for 2 to 3 months while red types last 2 to 4 weeks), and the storage conditions.

Pests and Diseases. Among the insects that are likely to attack onions, the onion thrip and the onion maggot are the most damaging. Thrips are quite tiny and are sometimes hard to see, but their feeding causes yellow or brownish spots on the leaves. Maggots cause brown or gray tunnels in the roots. Onion diseases should not be a problem unless the soil has a history of onion-diseased crops. However, a number of diseases can occur on onions that have not been well-cured before storing.

RELATED ONION CROPS

There are a number of other onion-like crops that require the same general growing conditions; these can often be substituted for onions in cooking. Brief descriptions of several of these crops and how to care for them follow.

Garlic (*Allium sativum*). The distinctive flavor and aroma of garlic is familiar to many people because of its frequent use as a culinary herb. Garlic differs from the onion in that the bulb is composed of cloves. There are two distinct subspecies – hardneck and softneck. Hardneck garlic (*A. s. ophioscorodon*) is reputed to have a deeper, more full-bodied flavor than softneck (*A. s. sativum*) and but does not store as well the softneck types.

Hardneck garlic produces a flower stalk like wild garlic and attempts to produce small aerial cloves on a flower stalk. It will not produce large bulbs below ground unless the flower stalk is removed. The following are recommended varieties:

Rocambole (the most commonly grown; will only store 3 to 4 months).

Porcelain (rare in North America; has an attractive bulb with large white cloves; tends to have a hot taste after storage).

Purple Striped (bulbs heavily striped with purple; excellent for cooking).

Softneck garlic usually does not produce a flower stalk but will bolt if stressed. It produces large bulbs with many cloves instead of sending energy into flower production. The following are recommended varieties:

Artichoke (also referred to as Italian Red; vigorous, producing bulbs with 12 to 20 cloves; will store for 6 to 9 months).

Silverskin (also referred to as Italian; the type most commonly sold in supermarkets; 12 to 20 cloves per bulb; can store for up to one year).

Garlic is propagated by means of clump division or cloves. Select large bulbs with well-developed cloves and plant them in late September or October. Set them into well-drained soil. Garlic can also be planted in the spring, but will be ready for use later than if planted in the fall; in other words, the bulbs will not be as large at harvest. Plant the cloves 2 inches deep and 3 to 4 inches apart in rows 6 to 10 inches apart. The bulb will be small if the soil becomes excessively dry or irregular in shape if the soil becomes compacted. Harvest garlic bulbs by digging or pulling up when the stems lose all trace of green and the tops bend over. Keep the bulbs in a warm, dry room until the outer scales are dry. Then remove the tops and roots and store in a cool, dry area in crates or mesh bags. If the tops are removed, they can be braided.

Leek (*Allium ampeloprasum* var. *porrum*). Leeks are onion-like but have a milder flavor and are hardier than onions. The leek plant resembles a large onion plant but is made up of a sheaf of basal leaves rather than a bulb. Leeks are grown from seed sown directly in the garden or from transplants; it requires about 120 days from seeding to maturity. Plant 10 to 15 seeds per foot of row four to six weeks before the average frost-free date in spring. Thin the seedlings to 4 inches apart. In summer, cultivate around the plants and pull soil toward the plants to blanch the edible stems. Do not bank soil around the plants until they are at least the size of a pencil; otherwise, the stems may decay. In general, it takes 120 days or more for the stems to reach 1 to 1-1/2 inches in diameter. But they may be used anytime the stems reach 3/4 to 1 inch in diameter. To harvest, loosen the soil with a spading fork and pull out the plants. Cut off the roots and all but 3 inches of the leaves. The plants can also be left in the ground over the winter; lightly mulch the plants with straw, hay, leaves, or other mulch to prevent the soil from freezing as quickly.

Shallots (*Allium ascalonicum*). Shallots are grown for their delicate flavor. Most shallots are used like green onions because their mature bulbs are small. Although there are several varieties, they are usually listed in most garden catalogs simply as "shallots." Because shallots seldom form seed, they are propagated by means of small cloves or divisions that are planted 1 to 1-1/2 inches deep and 3 to 4 inches apart in early spring for best yields. Shallots can be pulled as green onions when the tops are 6 to 8 inches high or allowed to die down in August for dry bulbs.

Chives (*Allium schoenoprasum*). Chives are hardy perennials that may be grown from seed or plants. The young, tender leaves have a pleasant, delicate, onion-like flavor. Because of their attractive pink flowers and important culinary uses, chives are often planted as a perennial in the herb garden or flower border. The plants are usually propagated by means of dividing older clumps, keeping 4 to 6 bulblets per clump. They can be divided in the fall or early spring. To prevent overcrowding, they should be divided every two or three years. The tender leaves can be harvested anytime during the growing season. They can also be chopped or dried and kept in the freezer.

Multiplier Onion, Potato Onion (*A. cepa aggregatum*). These are usually planted in early spring. The bulb, which actually has several small shoots internally, sends up multiple tops, each producing moderate-sized onions in a clump by fall. Each clump of onions is then dug and can be used fresh, or sorted and stored. Some of the bulbs can be retained for planting the following spring.

Tree Onion (also known as Egyptian onion, top onion, or winter onion). This type produces bulblets at the tops of the stalk instead of flowers. These small bulbs are very “potent” and should be used sparingly in cooking. They can be handled like onion sets and planted early in the spring. The plant is self-propagating in that the clusters of bulbs at the top weigh down the stalks, which fall to the ground and root when they come in contact with soil. The new stalks that grow from the bulblets can be used like scallions until bulbs form. After bulb formation, the stalks begin to toughen.

Bunching Onions. These may be considered onions of any variety that are pulled, bunched, and used before they form bulbs. The Japanese or Welsh bunching onions (*A. fistulosum*) are hardy perennials that do not produce bulbs but form clumps of long, white scallions.

Pickling Onions. No special type is used for pickling purposes. They are usually regular varieties that are harvested early after small bulbs have formed and are pickled for use as a condiment. Pickling onions are often produced by growing short-day varieties under long-day conditions.