



Department of Horticulture

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Onions and Their Relatives

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The common onion, *Allium cepa*, and its relatives—leeks, garlic, and chives—are thought to be native to the Northern Hemisphere. There are more than 400 species of *Allium*, which are used for food as well as ornamental purposes. *Allium* were used extensively by ancient Egyptians, and the Israelites also longed for onions during their wilderness wanderings.

First introduced into the West Indies by the Spanish, the onion spread from there to all parts of the Americas. The onion was a staple of the early colonists, and soon they had introduced it to the Indians.

Onions thrive under a wide variety of climatic and soil conditions. However, moderately cool temperatures with abundant moisture are ideal.

Soil Preparation

Onions will grow in almost any type of soil; a soil high in organic matter and well-drained is preferred. Add rotted manure, compost, or other organic matter the fall preceding the spring crop and work into the soil.

Apply a fertilizer that is high in phosphorus and potassium such as 6-24-24 at 4 to 5 pounds per 100 square feet of garden area in the absence of soil test recommendations. On high fertility soils, the fertilizer application should be limited to a side-dressing application of nitrogen 2 to 3 weeks after planting.

Planting

Plant onions as early as the soil is dry enough to be worked in the spring, since light freezes do not injure them. Later crops can be started up to May 15, but early planting is advantageous for larger bulbs and better storing onions. Plantings for green onions can be made anytime during the growing season.

Onions may be planted from sets, seed, or transplants. The choice depends upon cultivar, use, and availability. Onion plants form bulbs in response to daylength and temperature. Thus, cultivars that were bred for good

production in the South will not form bulbs under northern growing conditions and vice versa.

Sets are usually used to produce green onions, although allowing them to mature will produce dry bulbs. Sets are small dry onions, up to 3/4 inch in diameter. Onion plants grown from sets are more prone to bolting, and their mature bulbs do not store as well as those grown from seed or transplants. Larger sets will make smaller bulbs and are best suited for producing green onions. Small sized sets produce larger mature bulbs. Select sets that are firm and not yet sprouted. Sets are available in white, red, or brown (yellow), with white the most commonly used for green onions.

Growing onions from seed requires a long period to produce either green onions or dry bulbs, and generally this practice is not recommended for most home gardeners unless started early indoors. Many garden centers offer a small selection of onion transplants in early spring.

For green onions, place sets or transplants upright about 1 inch apart in a furrow 1 to 1-1/2 inches deep. If dry onions are desired, plant them 1 to 2 inches deep, but 3 to 4 inches apart. Some gardeners make one planting and then pull plants for green onions, leaving one plant every 4 inches for mature bulbs. Cover the sets or firm in transplants and water thoroughly.

Summer Care

Cultivate shallowly to control weeds, particularly during the early part of the growing season. Additional water during dry periods will ensure a good yield. Apply a 2- to 4-inch layer of mulch around the plants to suppress weed growth and conserve soil moisture.

Harvesting

Green onions may be pulled and used for fresh eating at any time while they are young. As they develop stronger flavor with age, use green onions for cooking. Larger bulbs may be pulled at any time during the growing season for fresh use. Bunching onions usually are ready 4 to 6 weeks after planting sets.

Dry bulb onions are mature in 3 to 5 months, usually by late August or early September. When the necks are thoroughly dry, or about 95 percent of the tops have bent over, dry onions are ready for harvest. Do not force the tops over. Pull the onions and place them in shade to dry, which should take 2 to 4 weeks. When the necks have dried and tightened, cut the tops off about an inch above the bulb. Place the bulbs in a well-ventilated container, such as a mesh bag or a slatted crate. Fill the bag half full and hang them on overhead hooks if possible. Fill the crates half full and stack them on crossbars to allow good air circulation.

Store onions in a dry, well-ventilated area, such as an attic or unheated room. Ideal conditions are 32°F with a relative humidity of 70 to 75 percent. Although most home gardeners do not have such ideal storage conditions, most can satisfactorily keep onions for 2 to 4 months.

Throughout the drying and storing period, discard any damaged onions and those that have thick necks. Be sure the necks are dry, since several disease organisms can cause decay during the storage period if the bulbs are not thoroughly dried.

Sprouting

Sprouting is promoted by exposure to warm temperatures, so keep the bulbs as cool as possible without freezing. Commercial onion growers use a chemical sprout inhibitor called maleic hydrazide (MH-30). MH-30 must be applied 2 to 3 weeks before digging, or at about the time 50 percent of the tops are bent over. Application must be made while the stems are still green, so the chemical can be translocated down into the bulb. Onions sprayed with MH30 cannot be used for planting purposes next year, because they will not sprout. In addition, MH-30 is not readily available in packages economical for the home grower. The best bet for home gardeners is to keep temperatures as cool as possible.

Onion Relatives

Potato Onion, Multiplier Onion

The Potato or Multiplier onion, *Allium cepa*, Aggregatum Group, is usually planted in the early spring. Occasionally it will overwinter under mulched conditions in the southern part of Indiana. The bulb contains several small shoots, each of which produces a moderately-sized bulb by fall. Each clump of onions is then dug and can be used fresh, or stored, or replanted the following spring.

Tree Onions, Egyptian Onion

The Tree or Egyptian onion, *Allium cepa*, Proliferum Group, produces small bulblets or sets where flowers are normally produced in common onions. Gather the

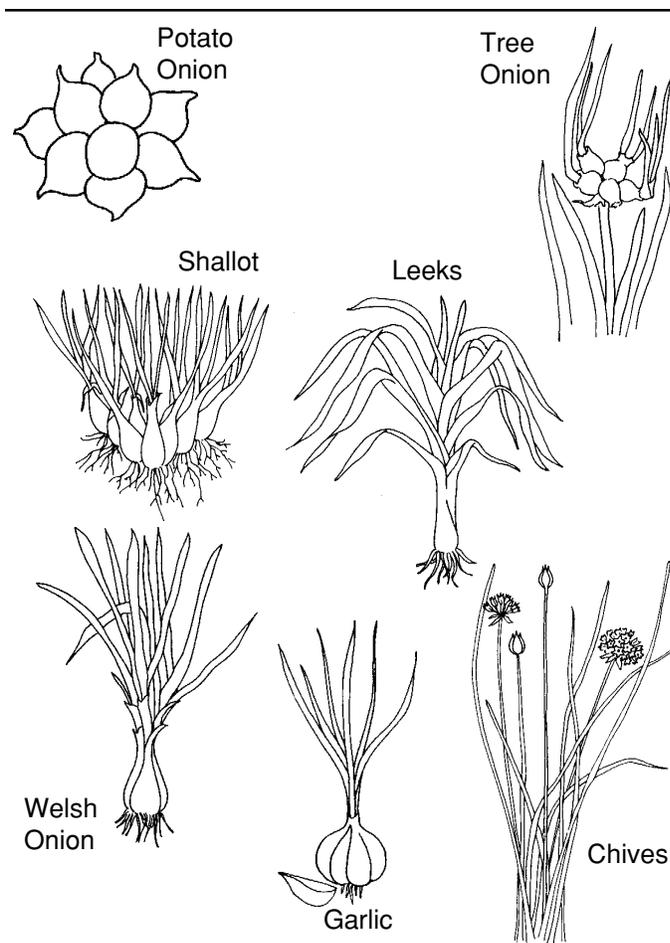
bulblets as they mature and plant immediately or store until early fall. If planted in the early fall and allowed to overwinter in the garden, the bulbs begin growth early in spring and can be pulled for an early supply of green onions. Most strains are quite winter hardy.

Shallot

The Shallot, *Allium cepa*, Aggregatum Group, differs from the common onion in that its bulb divides into multiple sections as garlic does. Since shallots seldom form seed, they are propagated by individual divisions of the bulb. The plant is hardy in most areas, but best results are obtained if the clusters of bulbs are lifted at the end of the growing season, stored, and replanted next season. Shallot bulbs are more delicate in flavor than most onions. Most shallots are used as green onions since the mature bulbs are small. In some areas, any green bunching onion is called a shallot, regardless of the species. But the true shallot is a different plant. Follow the cultural recommendations for other onions.

Welsh Onion, Japanese Bunching Onion

The Welsh Onion, *Allium fistulosum*, never forms rounded bulbs but only white scallions often used in Oriental dishes. In Japan, it is often incorrectly called the Japanese leek. Follow cultural instructions for green onions.



Leeks

Leeks, *Allium ameloprasmum*, are grown for the enlarged leaf bases at the bottom of the thick stem. Leek flavor is mild and is used as a green onion since no bulbs are formed. Leeks are grown from seed or transplants; start seed indoors early to get a head start on the growing season. Cut off the seedling tops when they are 8 inches tall and transplant them 5 inches apart in the garden. Mounding the soil up several inches around the plants will produce a larger, white, tender leaf base. Leeks can be harvested any time from green onion size to before killing frost.

Garlic

Garlic, *Allium sativum*, requiring a long growing season, often does not grow well in midwestern gardens. Garlic produces a group of cloves that are encased in a sheath. Plant individual cloves 1 to 2 inches deep and 5 to 6 inches apart. Each large bulb contains about 10 cloves, but the larger, outer cloves produce the best garlic.

Elephant Garlic is a larger, milder flavored garlic which should be planted about 10 inches apart. Follow the cultural directions for growing onions. When the tops dry down, the bulbs should be pulled, dried, tied into bunches, and hung in a cool, well-ventilated place.

Chives

Chives, *Allium schoenoprasum*, is a hardy perennial plant grown for its leaves rather than bulbs. Young, tender, chive leaves have a pleasant, delicate, onion-like flavor. You can pick and use them any time during the growing season. Blue flowers appear early in the season, making chives an attractive specimen for the vegetable, herb or flower garden.

Plant seeds or clump divisions, and care for them as you would onion seeds or sets. Since chives are perennials, plant them where you can leave them for more than one season. They will gradually grow too thick, so divide and reset them every 3 years. For a year-round supply, pot a few clumps in the fall to bring indoors, and handle them as other house plants.

For more information on the subject discussed in this publication, consult your local office of the Purdue University Cooperative Extension Service.
