Allium cepa

Alliums were used extensively by ancient Egyptians, and eventually arrived in Rome. Onion derives its name from the Latin word ‘unio’, which means large pearl. In Middle English, it became ‘unyon’. 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.

Culture

The onion is a biennial plant, which means that it grows vegetatively one year and produces its seeds the second after a period of cold temperatures below 50°F. Between these two seasons onions have a dormant phase. First-year onion plants begin their growth by putting out green leaves during the cool weather. They store a lot of energy in those leaves. When the weather gets warmer and the days longer, the plants stop putting out new leaves. Instead, they take the energy from the leaves and store it in the expanding bulbs located at the leaf bases. Eventually the leaves fall over and shrivel up and the plants appear dormant. Inside the bulbs, however, the plants are storing the energy to produce flowering seed stalks when they start growing again.

The onion’s shallow root system is naturally adapted to light sandy loam soils high in organic matter. Onions also grow well in muck soils, but should not be planted in heavy clays. Well dug beds, incorporating organic materials such as composts, will help grow larger bulbs. Good drainage and full sun are also essential for success. Before planting, remove clods, rocks, and plant debris to prevent irregular growth or stunting. Fertilize close to the planting area for best results. Consistent watering will help prevent bolting.

Onions start bulb formation when the day length is of the proper duration. Different varieties of onions require different day lengths to initiate bulbing. Most common varieties fall into one of two classes, long-day (for northern latitudes) and short-day (for southern latitudes). For this reason, most onion varieties that are grown in the South are not adaptable to the North, and vice versa. One exception is pearl onions, which are short day plants, but grown in northern regions under long-day conditions. The dividing line between short-day and long-day varieties is generally accepted as 36° latitude, roughly along the Kansas/Oklahoma border.

Onions are photoperiodic plants, meaning they regulate their stages of growth by the duration of the light/dark cycle at the particular time of the year they are growing. The onion plant will make top growth until the critical light duration is reached when bulbing begins. The amount of growth and development prior to bulbing will determine the bulb size. Long-day varieties need to be planted as early as possible in the spring to obtain sufficient growth prior to the longest day, when they begin to bulb. New breeding efforts have developed day-neutral varieties. Day-neutral and intermediate-day onions can be grown successfully anywhere.

Scallions or bunching onions, Allium fistulosum, are another member of the onion family. Scallions have thick necks and will not store well. To have scallions in the summer, plant seeds of an onion variety such as ‘Beltsville Bunching’ or ‘Evergreen Bunching’ as early in the spring as you can. Pull them up when the stalks are about eight inches tall. True scallions don’t form bulbs. For information on shallots, multiplier (potato) onions and top set (Egyptian) onions, see Master Gardener Journals MG 252, MG 253 and MG 254.

Onion From Seed

Gardeners can grow their own onion seedlings for transplanting by sowing seeds indoors around February 15. To grow transplants, sow up to 100 seeds into a sterile seeding mix in a 4-6 inch pot. Cover the seeds to a depth of 1/8 inch. Place in a warm location and keep moist. Days to emergence: 6-12. Optimum soil temperature for germination: 55-75°F. If the tops reach over 5 inches before you can plant them out, clip the tops with scissors back to a height of 3 inches. See “Onions From Plants”, below, for planting instructions.
Onion From Sets

Sets are small dry onions, up to ¾ 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 transplants. Onions do best if the temperature is cool when they start to grow, and warm as they mature. Frost won’t harm sets. Plant the sets as soon as the ground can be worked in the spring (around mid-April). Separate sets into two size groups – smaller than a nickel or larger than a nickel. Large sets will usually ‘bolt’ or produce a seed stalk, so they should be planted for use as green onions early in the season. To produce dry onions, plant the smaller sets 1 inch deep, 2 to 4 inches apart. Allow 12 to 18 inches between rows. If sets are 2 inches apart, harvest every other plant as green onions.

Onion From Plants

When mail-order plants arrive, unwrap them. The onion plants develop a lot of heat when banded together, and heat encourages rot. Next, put 2 inch of water in a shallow baking pan, and stick the roots in the water just enough to get their toes wet. They’ll revive quickly. Plant as soon as you can after receiving them. If you can’t plant them within a few days, forget the bath. Put the unwrapped plants in plastic bags and store them in a cool, dry place (such as a refrigerator) until you can plant, or heel-in the transplants. When ready to plant, take the clump and separate the grasslike seedlings. Plant them 1 to 1 ½ inches deep, 3 to 4 inches apart. Allow 12 to 18 inches between rows, or space onions 4 to 8 inches apart in all directions for wide row beds. Onion seedlings are tough and will perform amazingly well. Transplanting young onion seedlings is the method of growing that most regularly produces large, dry attractive onions for slicing (as shown in the catalog pictures).

Irrigation

It’s especially important for onions to get water just after planting. A well-hardened transplant can survive almost two weeks in dry soil. But, in the long run, early dryness will hurt the crop. If soil is allowed to dry out during bulb formation, the onion may split and form two bulbs. It helps to apply mulch when the tops are 10 to 12 inches tall. Although onions need a lot of water, the soil shouldn’t be soggy all the time. Ideally, you want to provide a thorough soaking to a depth of six inches once a week, rather than just a light sprinkling each day. Watering when onions are bulbing can keep some soils from hardening around the bulbs, allowing for bulb expansion. Cut back on watering when the tops start dying back to prevent the bulbs from rotting.

Fertility

Low Nitrogen requirements. Apply 3 pounds of 10-10-10 (or 4 pounds of 6-24-24) per 100 square feet in spring before planting. Use a liquid starter solution such as 15-30-15 for transplants. Onions have a high demand for micronutrients such as copper, manganese, molybdenum and zinc.

Harvest

Pull green onions anytime after the tops are 6 inches tall. Remove any plants that have formed flower stalks and use immediately. Harvest bulbs in late July or early August, when most of the tops have fallen over. Allow the plants to mature and the tops to fall over naturally. Harvest bulbs within one or two weeks after this occurs and withhold water during this period, if possible, so the bulbs mature in dry soil. Breaking over the tops early interrupts growth, causing smaller bulbs that do not keep as well in storage. Pull the mature onions in the morning, and allow the bulbs to air dry in the garden until late afternoon. To avoid sunburn on especially hot sunny days, move the onions to a shaded location and allow them to dry thoroughly. Before evening dew falls, move them to a dry shelter and allow them to cure for 2 to 3 weeks. Keep the dry wrapper scales as intact as possible on the bulbs, as they enhance the keeping ability. It is best not to wash onions before drying, as this may reduce their keeping ability.

After the bulbs dry, cut the tops 1 ½ to 2 inches long (at or above the narrow spot where the stem bent over), and place the bulbs in dry storage with good air circulation. Keep onions in onion sacks so they get good ventilation, and hang sacks where air is dry and cool (32 to 45°F). Check sacks occasionally, and immediately remove any sprouting or rotting onions.

Pests

Onion maggots and thrips can affect onions. Because of their pungent odor, onions repel many pests and also protect other garden vegetables. Onions are a valuable companion plant and should be integrated throughout the garden. For more information, consult University of Wisconsin --Extension publication A2088, Managing Insects in the Home Vegetable Garden.

Diseases

Botrytis leaf blight, downy mildew, purple blotch, Fusarium bulb rot and (in storage) onion neck rot can affect onions. Most onion disease results from improper growing conditions. Plant them in your best humus soil and practice strict sanitation procedures.