



Introduction to Annuals

Annual plants complete their lifecycle in a single season. You usually plant seed in spring or early summer (or purchase plants started in a greenhouse). The plants grow and flower through summer and die in the fall. Unlike perennials, this year's plants will not regrow from overwintered roots next spring, though sometimes seeds produced by annuals will sprout and grow the following year ("self-seeding").

Annual plants have many advantages:

- Many flower from early in the season until they die in the fall, compared with perennial plants which have a comparatively short bloom time.
- Whether you grow purchased plants or start from seed, annuals are relatively inexpensive to grow. Many are easy to grow if you provide the right site and soil preparation.
- They are temporary. You can experiment with a wide range of colors, textures, and forms. If you don't like the results, you can do things differently next year.
- Annuals are great for filling in bare spaces in perennial beds. When spring bulbs die back, for example, you can fill the void with annuals. Annuals also provide season-long interest in pots and containers.
- Annuals are versatile. They range in size from bedding plants less than a foot tall to giants that grow 8 feet or more. Annual vines can climb 10 feet or more on trellises or other structures or they can ramble that distance along the ground. Many annuals perform best in direct sun and warm weather. Others prefer shade and/or cool. Some tolerate light frosts while others die at the mere hint of a freeze. Blossoms run the entire spectrum of the rainbow. Some annuals are grown for their interesting foliage colors or textures.

There are hundreds of species of annuals to choose from. Within many of these, there are also different varieties or cultivars (short for cultivated

■ [Introduction to Annuals](#)

■ [Site and Soil](#)

■ [Planting Options](#)

■ [Caring for Annuals](#)

■ [Pests and Diseases](#)

varieties) to choose from. Varieties within a species may differ in flower color, size, disease resistance, or other characteristics.

A series is a group of closely related varieties that usually differ only in flower color. Some varieties are F1 hybrids -- grown from seed from a cross between two specific parents of the same species. Hybrids are often more vigorous than non-hybrid varieties or have special characteristics. You cannot expect that plants grown from seed produced by hybrid plants to "breed true." The next generation of plants will likely be substantially different from their F1 hybrid parents.

Site and Soil

Match your plants to the amount of light your site receives. Many annuals need full sun -- six or more hours a day. Some, such as impatiens and begonias, do best in the shade.

Consider the balance between good air circulation (which helps prevent disease) and protection from strong winds (which can dry out soil and plants). Cold air accumulates in low spots on chilly spring and fall nights, encouraging frost that can kill tender annuals.

Prepare the soil ahead of time. Poor soil can stunt or kill annual flowers. Do not plant them in poorly drained areas where water pools after heavy rains.

If your site has not been planted before, start improving the soil in the fall before planting annuals the following season. Kill the sod with organic or plastic mulch, herbicide, or by turning it over with a shovel. Hoe out any weeds or grass that survive. The site should be level or gently sloped to keep soil from eroding.

Work in three to six inches of organic matter (such as well-rotted manure) to improve the soil. This is particularly important to improve drainage in heavy clay soils or improve water-holding capacity in sandy soils.

Contact your local Extension office for information about how to test your soil to learn pH and nutrient levels. They may suggest a more complete soil test from the Cornell Nutrient Analysis Lab. Follow the directions on your soil test report about adding lime to increase pH or adding fertilizer to correct nutrient deficiencies.

If deer are a problem at your site, choose plants that deer tend to avoid. Other alternatives include regularly applying deer-feeding deterrents to plants or installing 6- to 8-foot-tall deer fencing or other barriers.

Planting Options

Some annuals, such as snapdragons and pot marigolds (*Calendula*), will tolerate frosts. These are called hardy annuals. But freezing temperatures kill most of the others. These are called tender annuals. Half-hardy annuals will tolerate mild frost.

If you are growing tender annuals, pay special attention to the average date of your last spring frost and don't plant them before then. Since many tender annuals only thrive in warm soils and air temperatures, planting them too early only stresses the plants.

Purchased plants

The easiest way to get started with annuals is to buy greenhouse-raised seedlings at garden centers or other outlets. Usually, the plants are more robust and healthier than those we start from seed on our windowsills. They transplant easily and bloom early. Your choice of what to grow, however, is limited by what's popular. If you want to grow anything out of the ordinary, seek out garden centers that specialize in the unusual or start plants yourself from seed.

Look for healthy plants, but remember that what you are really buying is the roots. A damaged leaf or dying flower is not necessarily a sign that the plant is diseased. Look instead for a strong root system that fills out the pot or cell, but at the same time isn't overly root-bound.

Annuals that are in flower when you purchase them aren't necessarily better than those that aren't. It helps buyers know what the flowers look like, but it could also be a sign that the plants are over-mature and the roots may be pot-bound. If there is no picture or description on the label of a flowerless plant, ask the garden center staff for more information.

Also ask the staff if the plants have been "hardened off." Hardening off is the gradual transition that young plants need from their relatively soft life in the greenhouse to the rigors of surviving in the garden. If they haven't been so acclimated, you will need to gradually increase their exposure to sun, wind, and cool temperatures and reduce the amount of water they receive for a week or two before transplanting them. (More on transplanting below.)

Starting plants indoors

Growing your own plants from seed indoors can be rewarding -- especially if you want to grow species or varieties that aren't readily available as seedlings. But be forewarned, it takes some effort and attention to detail.

Without enough light, plants you start yourself will grow "leggy" -- long, weak and spindly -- as they stretch for light. For best results, you need at minimum a bright, unobstructed south-facing window and/or fluorescent

grow-lights.

Start seeds in a sterile, light, free-draining seed-starting mix (available at most garden centers). Do not use garden soil. Young seedlings are especially vulnerable. Even good soil doesn't drain as well as seed-starting mix, and it may carry diseases that kill young plants. Select a time to start based on your expected last spring frost and when you plan to transplant the seedlings outside.

Use fresh seed, and determine whether or not they require light for germination. (Don't cover such seed with soil.) Plant in flats, pots, or cell packs at the specified depth. Covering seed with vermiculite instead of the seed-starting mix sometimes improves germination. Cover containers with plastic to seal in moisture and place out of direct sun in a warm spot until seeds germinate. Temperatures between 60 degrees F and 75 degrees F are usually adequate, but some seeds germinate faster and stronger at warmer temperatures.

When seeds begin to germinate, remove plastic and place containers in light. Keep soil moist so plants don't dry out. When seedlings develop two true leaves, thin to one per pot or cell. In flats, thin to about one plant every 1.5 inches, or transplant to individual pots or cells. Most potting mixes have very low fertility, so water with a weak solution of fertilizer. Harden off plants before transplanting.

Transplanting outside

Most annuals (those that are killed by frost and need warm soil and air to thrive) should be transplanted after the last average frost date. Don't be in a rush to get them outside if the long-term forecast looks threatening. Make sure the plants have been hardened off properly and are ready for the rigors of the garden.

If at all possible, choose a still, cool, cloudy day to transplant. Sun, heat, and wind can stress seedlings, causing leaves to wilt and even killing the transplants. Waiting until late in the day on a sunny day will at least give the transplants over night to start getting acclimated.

Before transplanting, remove any weeds that may have cropped up in your previously prepared planting bed. Loosen the soil where you will transplant the seedling and dig a hole large enough to accommodate the root system.

If the roots are pot-bound -- closely pressed against the side of the container and growing in circles around the inside -- tease them out so they will start growing into the surrounding soil. If you don't, they may keep growing in circles and the seedling will remain stunted. In severe cases, you may need to use a sharp knife to cut the circling roots, to stimulate new root growth. Pinch back any flowers and flower buds that have formed on the plant and perhaps a little of the foliage to compensate for the root damage.

It is important to plant most annuals at the same depth at which they were grown in containers. Planting too deep or too shallow stresses the plants. If seedlings are in peat-pots, peel away the upper edge of the pot so that the entire pot is below ground after planting. If any of the peat pot protrudes above the soil after planting, it can wick moisture away from the seedling.

Water plants thoroughly after transplanting. Don't let the soil dry out for the first week or two while the seedlings' roots get established. Check daily to make sure that the soil around the transplants is moist below the surface and that the plants aren't wilted. Mulching can help soil retain moisture.

Be sure to space plants properly. Refer to the seed pack or label about specific spacing suggestions for the variety you are growing. (Use spread information in the Flower Growing Guides to help determine how far apart to space plants.) Those tiny annual seedlings often grow larger than you ever dreamed and get too crowded. On the other hand, if you want them to form a continuous border or clump, don't space them too far apart.

Direct seeding

With some annuals, the seed is difficult to germinate or takes a long time to sprout. In these cases, you are better off buying plants or starting the seed yourself inside. Other species are easy to plant and grow right in the garden. They may start flowering several weeks later than they would have if started inside. But direct seeding these in the garden saves a lot of effort.

The biggest problem when direct seeding is that your garden soil may not be as inviting to seeds as seed-starting mix. If that's the case, make small furrows or holes, plant the seeds, and cover to the prescribed depth with wetted vermiculite or seed-starting mix. Keep soil moist until seeds sprout, then thin to proper spacings.

Many annuals self-seed prolifically if you don't remove flower heads before they mature. The seeds usually sprout the following year near where the plant grew (or wherever wind, water, or animals carried them). If you want plants in these locations, thin as if you planted them. If you don't want them there, hoe them out as if they were weeds.

Caring for Annuals

Mulching

Most annuals benefit from applications of organic mulches to retain moisture in the soil and smother weeds. Grass clippings, shredded leaves or bark, compost, and other organic materials also improve the soil as they break down.

Watering

While some annuals are drought-tolerant, most need plenty of water. If the soil dries out due to lack of rain, it's important to thoroughly soak the soil when you water, not just wet the surface. It's also important to keep the foliage and flowers as dry as possible to prevent disease. Soaker hoses and drip irrigation do this best. If you use sprinklers, run them in the morning so that the plants dry quickly in the sun. Watering individual plants by hand takes patience to supply enough water to thoroughly soak the soil.

Pinching

Some annuals respond well to pinching -- removing the growing tips by pinching off the small, developing leaves at the ends of stems. This forces more lateral growth, making the plant bushier and shorter.

Staking

Some tall annuals tend to fall over, especially when they are heavy with flowers. To keep them upright, you can locate them so other plants help support them, or back them up against a fence or other structure and fasten them with twine. Another alternative is to insert stakes of wood, bamboo, or other unobtrusive material in the soil adjacent to the plants while they are still small and, as they grow, fasten the plants to the stake. Other commercial products are available to support plants.

Deadheading

Many annuals benefit from removing flowers once they begin to fade. A weekly walk through the garden deadheading spent blooms will keep many annuals flowering longer and more profusely. Some will stop blooming and die if not deadheaded. A few need to be cut back severely in midseason to encourage a new flush of growth and flowering in late summer and fall. Some annuals readily self-seed. If you want to prevent them from doing so, you need to deadhead faithfully. A few annuals, such as begonias, do not benefit from deadheading.

Fertilizing

Most annuals need fertile, well-drained soil for healthy growth. That's why it's important to incorporate organic matter when preparing beds. Some soils may also benefit from incorporating granular fertilizer before planting. (Check your soil test results to see how much you need.) Slow release sources of nitrogen applied at planting can meet nitrogen needs for the entire season. If annuals become short of nitrogen, often indicated by yellowing of younger leaves, you can sidedress granular fertilizer or apply liquid fertilizer.

Pests and Diseases

Since annuals die after only a single season, diseases are less of a concern than with perennials. Often, it's best to just pull out and dispose of individual plants that become diseased. Not growing the same species in the same place in consecutive years can help. If diseases persist, try using resistant varieties.

If foliar diseases such as powdery mildew are a problem, provide better air circulation by spacing plants farther apart. Keep foliage dry as much as possible by watering in the morning. If root rots and diseases are a problem, avoid over-watering and improve drainage.

Damping off is probably the most serious disease of annuals, causing seeds to rot and small seedlings to die. It spreads quickly and can be carried on soil, tools, and containers. Use sterile soil and containers to prevent its spread when starting seeds.

In a diverse and healthy garden, beneficial insects prey on and parasitize pests, helping to keep their populations in check. Keep in mind that when you use insecticides, you also kill the good guys that prey on the pests. If you use insecticides, follow directions precisely.

Where aphids and other pests that suck plant fluids (below) are a problem, avoid excessive nitrogen fertilizer. This makes plants more attractive to these insects. Also look for resistant varieties. A few of the common sucking pests you may encounter include:

Aphids

Tiny, soft-bodied insects (often pear-shaped) that pierce tender plant parts and suck out fluids. Sooty mold (a black fungus) often grows on the sweet sticky honeydew associated with aphid colonies. You can wash aphids off plants with a hard stream of water.

Whiteflies

Adults are small and yellowish with dull white wings. Immature whiteflies are oval, flattened, and yellowish scale-like insects. Heavily infested plants send up a cloud of adults when disturbed. Do not purchase infested plants. Pull out and dispose of plants that become infested.

Spider Mites

These tiny 8-legged arthropods suck liquid from plants, causing yellowish stippling on leaves. Webbing, which looks like strands of spider's web, is sometimes visible. Rogue infested plants. Wash off with hard stream of water.

Slugs and Snails

Slugs and snails can also be a problem, especially in wet years. Removing mulch and other garden debris can reduce the moist hiding places they need during the day.

