

Strawberries for the Home Garden

Fact Sheet No. 7.000

Gardening Series | Fruits and Vegetables

by H. Hughes, J.E. Ells, G. Schweitemann, J. Reich* Revised by L. Langelo. Revised by Yvette Henson and Susan Carter, 1/21.

Strawberries require at least eight hours of full sun each day of the growing season to produce at their maximum capability. Avoid hot sites because a strawberry planting will remain in the same location for multiple years, locate them in an area that does not interfere with the annual garden cultivation. To reduce risk of soil borne diseases, do not plant where strawberries, raspberries, tomatoes, peppers, and eggplants, potatoes, vine crops (squash, pumpkins, melons, cucumbers), fruit trees, maple and ash trees have been in the last 4 years. When strawberries are planted after sod, grubs, which have been feeding undetected on the sod roots, divert their attention to the strawberry roots. Because there are fewer strawberry roots, a sizable grub population may cause severe damage. After removing the sod, wait a year before planting strawberries because the grub population will decline. Strawberries need full sun and a loose, moderately fertile soil. Plant in raised beds if your soil is heavy clay.

Fertilization

When creating a new bed, add 2.5 lbs. of 21-0-0 or similar organic fertilizer (1/2 to 3/4 pounds of actual nitrogen) per 100 feet of row or ideally apply what a soil test recommends for your soils and strawberry plants. Generally, other nutrients are not needed unless indicated in a soil test.

In September, apply a second application of 1 pound of nitrogen that will help with next year's bud formation. After fertilizing, irrigate immediately, rinse leaves and soak fertilizer into the ground or per directions on the fertilizer.

Iron chlorosis can occur from overwatering our high alkaline soils and soils high in free lime (calcium).

Chlorosis will produce interveinal yellowing of the leaves, with browning of edges in severe cases. Correct watering practices by reducing frequency and watering deeper. Foliar applications of iron can provide a short-term fix. An application of chelated iron product in May and September at a rate of 0.1 ounces per 100 ft. or row can reduce chlorosis.

Water Needs

Strawberry plant roots are in the top 10-12" of soil. Producing juicy berries requires a relatively high moisture demand. Dry hot weather causes more transpiration of water, up to 2" per week. Irrigate thoroughly at three to five-day intervals during the summer heat. Water when the top few inches of soil are relatively dry to prevent root rot. A drip or soaker hose is recommended to prevent the spread of root rotting pathogens. If using sprinklers, only water in the morning to allow fruit and leaves to dry out quickly.



Quick Facts

- Strawberries are classified as June bearing, everbearing or day neutral.
- They should receive full sun at least eight hours every day.
- They adapt to nearly all areas of Colorado, even high elevations.
- Strawberry beds generally are kept for three years.
- Strawberries are remarkably free from most insects and diseases in Colorado.
- Leave the caps on the plant if the berries will be eaten or preserved right away.
- Protect strawberries over the winter, generally with a straw mulch applied about December 1.

**H. Hughes, Colorado State University professor, horticulture and landscape architecture; J.E. Ells, former Colorado State University Extension vegetable crops specialist and associate professor (retired); and G. Schweitemann, former student, horticulture and landscape architecture. Previously reviewed by J. Reich, former Extension horticulture agent, Boulder County. Revised by L. Langelo, Colorado State University Extension horticulture agent, Golden Plains Area. 12/2014. Revised by Yvette Henson and Susan Carter, 1/21.*

extension.colostate.edu

Varieties

There are three growth-types of strawberries: June bearing (flower buds form in the fall in response to short days), everbearing (flower buds form in response to long days in summer) and day-neutral (flower bud formation is not a response to daylength but form over the entire season while actively growing). June-bearing varieties tend to produce the most flavorful, aromatic berries. However, if their flowers are damaged by a late spring frost, they will produce a much-reduced crop or no crop at all. In most areas of Colorado, June-bearing varieties actually ripen in July. Recommended June bearers (one crop) for this area are Guardian, Kent, Honeoye, Redchief, Delite, Jewel, Mesabi, A.C. Wendy, Cabot and Blomidon.

Everbearing strawberries typically provide two main crops each year, with small amounts of fruit produced between the main crop in June and a lighter crop in late summer or early fall. For Colorado, everbearing strawberries are recommended for the home gardener because they tend to be very reliable producers. If a late spring frost kills the first flowers, you will still get a crop in late summer or fall. Some of the more common everbearing varieties are Ogallala, Fort Laramie, and Ozark Beauty. Ogallala and Fort Laramie are recommended for Colorado because they are more hardy. Day-neutral varieties are similar to everbearers, but flower and fruit more consistently over the summer. Recommended day-neutral varieties include Tribute, Tristar, Fern, and Mara Des Bois. Many gardeners plant everbearing, day-neutral, and June-bearing types in order to extend harvest over the longest possible season.

Planting

There are two systems used for strawberry culture: the matted row, used with June-bearing strawberries, and the hill system, used with everbearing or day neutral varieties.

Plant June bearing plants in a matted row system. Leave 2 feet apart in rows 4 feet apart. These plants are allowed to produce runners to fill in the row. Leave a pathway 1 1/2 feet wide between rows.

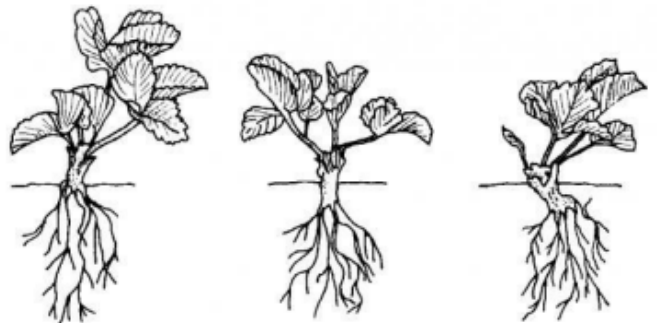
Remove or relocate runners that root in this pathway or within 5 inches of an established runner.

Plant everbearing and day-neutral strawberries using the hill system. Space plants apart in three rows that also are 1 foot apart, with 3 feet between each set of three rows. Remove all runners as they develop.

Select certified plants over non-certified ones. They have been certified to be free from insects and diseases. Unpack plants and plant right away or heel them in a trench as a temporary location until they can be set out in the garden.

Transplant in the late afternoon to reduce wilting due to heat stress. Discard plants with dark roots or unhealthy-looking roots. Remove flower buds, runners, and damaged leaves before planting. The usual planting method is to drive a spade into the soil, push the handle away to open up the soil, fan out the roots of the plant, and place the plant in the opening so that the soil level is even with the crown. While the plant is held with one hand, remove the spade with the other. Allow the soil to fill in the hole and tamp it down gently. It is important to water each plant immediately after planting is practice will help avoid transplant shock and water can be used to settle the soil around the roots without compacting the soil by pushing on it. Watering each plant individually at planting, rather than sprinkling the plants when finished, will help to avoid forcing wilted leaves into the soil. To be successful in planting strawberries, it is very important to plant them at the correct depth as demonstrated in the image from NC State with the center plant being at the correct height.

Figure 14-1. Set strawberry plants so the crown is level with the soil line. The plant on the left is too shallow. The plant on the right is too deep.



Cultivation

After planting, keep weeds down by hoeing. If the planting is large enough, consider an herbicide such as Dacthal. Apply this compound according to label instructions. Remove all the flowers of June-bearers the first year and only the first flush of blooms on everbearers and day-neutrals. This diverts the resources of the plant into producing a strong plant. Stronger plants bear more fruit than those allowed to fruit early. Later in the season, there will be some fruit to enjoy on the everbearers or day-neutral varieties.

About July 1, fertilize the crop with 1 pound of nitrogen per 1,000 square feet. It may be obtained from 5 pounds of a 21-0-0 formulation. If the fertilizer is broadcast, drag the foliage with a sack to dislodge the fertilizer and then water. Repeat this process again in September. Nitrogen applied before fruiting results in so fruit and is not recommended.

Generally, keep a strawberry bed for three years. Remove it as soon as it ceases to bear in the fall, or leave it until spring. If the matted row system is used and the plants are still insect and disease-free, plant a new bed in late August by carefully removing good, healthy, rooted runners and using them for planting the new bed. If the hill system is used where no runners are permitted, or if the plants are not healthy, order new plants in time for planting a bed in the spring, preferably in a different location.

Keep the soil damp until the first fall frost, then withhold water to help harden the plants for winter. A final November watering helps prevent winter-kill from drying out the root system.

Insects and Disease

Strawberries are remarkably free from most insects and diseases in Colorado. Occasionally, an insect problem arises, such as crownborers, leafhoppers, aphids, earwigs, slugs, or tarnished plant bugs. Malathion is a good standard home insecticide to control aphids, leafhoppers, and quite a few other sucking and chewing insects.

Use Sevin to control earwigs and beetles. Control crownborers with a soil-applied insecticide. Control slugs with commercially prepared baits available at most garden centers. Do not spray plants when in flower—pollinating insects may be harmed. Feeding by nymphs and adults of lygus bugs (*Lygus lineolaris*), also called tarnished plant bugs, causes cat-facing damage on strawberry fruit over the spring and summer season. Weeds and legumes are alternate hosts, so not having them in the vicinity of your strawberry plantings will reduce numbers. If numbers are high enough, insecticides are most effective on the earliest nymph stages.

Disease problems occur less frequently than insect problems. Usually, the disease is controlled by removing the diseased plant or plant part. However, if it is widespread, other measures must be taken. In the case of systemic diseases, such as yellows (virus) or red stele (vascular), nothing can be done except to remove diseased plants. However, if a fungus develops on the foliage, spray the plants with a fungicide, such as Captan. Bacterial diseases on strawberries are not important in Colorado.

Spotted wing drosophila came to Western CO around 2012. This fruit fly is able to deposit eggs in good fruit. Make sure to pick and refrigerate berries as soon as they are ready. Clean up any damaged or spoiled fruit. Monitoring and traps can be used. June bearing strawberries are less affected since populations of SWD peak in July. So varietal selection can help to avoid this pest. More information can be [found here](#).

Garden netting can be used to keep birds from eating strawberries. Strawberry caps, available at garden centers, can also be used to cover ripening berries. Planting other fruit bushes to attract birds away from strawberries can help. But exclusion is the best method.

For more information, see fact sheet 2.931, [Strawberry Diseases](#).

Harvesting

Pick strawberries every other day during the peak of the season. It is poor practice to let fruit rot on the vine, so pick even the rotted fruit. If berries are eaten or preserved immediately, harvest only red-ripe fruit and leave the caps on the plant. If the fruit will not be used for a few days, harvest the berries, caps, and all, while still pink.

Mulching

Protect over winter with straw mulch or row cover fabric. Apply mulch after initial freezes. Mulch by December 1st or earlier in mountain communities. Then, cold weather has inhibited growth and the soil is cold. Distribute the mulch over the plants to a depth of 1 to 2 inches. Hold it in place with weighted boards or piles of soil. This mulch prevents the plant from losing moisture to drying winter winds. It also prevents root damage caused by alternate freezing and thawing of the ground.

Leave the mulch on as long as possible to restrain plant growth in the spring. Early spring growth produces early growers subject to damage by adverse weather. Therefore, check the plants under the mulch in March for new growth. When growth begins, part the mulch to allow sunlight to reach the foliage. As the plants continue to grow, gradually remove the mulch, leaving as much as possible as a soil mulch to keep the fruit on the ground. Rake the mulch back over the plants to protect them in case of a late spring frost. Remove soon after the frost danger is over.

Colorado State University, U.S. Department of Agriculture and Colorado counties cooperating. CSU Extension programs are available to all without discrimination. No endorsement of products mentioned is intended nor is criticism implied of products not mentioned.