



Growing Strawberries in Home Gardens

Cultivar Selection: June-bearing strawberry cultivars adapted to northern climates are found in many nursery catalogues. Some cultivars, however, perform better than others. Unfortunately, it is difficult to predict which cultivar will grow best in a particular garden. Cultivars differ in their susceptibility to disease, tolerance of cold temperatures, suitability for freezing, time of ripening, and flavor. Perhaps the best way to decide which cultivars to purchase is to find out what neighbors and local commercial growers have produced successfully. Before planting a large area, try several cultivars. Day-neutral cultivars, which bear fruit from June through October in the Northeast, are now available. Refer to the leaflet *Growing Day-Neutral Strawberries in Home Gardens* for more information. For information on cultivars and sources of plants visit the [Nursery Guide for Berry and Small Fruit Crops](#) on the Cornell Fruit Resources web page.

June-bearing strawberry cultivars are reliably winter hardy throughout New York State (as cold as USDA Hardiness Zone 3), provided they are properly managed and mulched. Some cultivars that perform well include:

- *Earliglow* - perhaps the best-flavored cultivar, it is among the earliest to ripen.
- *Northeaster* - ripens about the same time as Earliglow. It is resistant to red stele and *Verticillium* wilt and does well on heavier clay soils. The berries are large and have hint of grape flavor, which some people love and others dislike.
- *Sable* - has excellent flavor and also ripens early.
- *Allstar* – a reliable producer with large light red to orange, sweet flavored berries. It is resistant to red stele and *Verticillium* wilt.
- *Honeoye*, *Cavendish*, *Kent*, *Raritan*, *Redchief*, and *Scott* – good midseason strawberries. Cavendish, Redchief and Scott are resistant to red stele and *Verticillium* wilt.
- *Jewel* – the most widely grown variety in the Northeast, it has excellent flavor. It is productive and maintains a large fruit size throughout the growing season.
- *Lateglow* – a reliable late-season cultivar. It is resistant to red stele and *Verticillium* wilt.

All of these cultivars are cold hardy, yield well, and produce firm fruit with good freezing quality. Allstar, Cavendish, and Jewel produce exceptionally large fruits.

Buying Plants: Best results are obtained with dormant, virus-indexed plants purchased from a reliable nursery or local supplier. Dormant plants are usually sold in bundles of twenty-five. Ask that your plants be shipped in late April or early May.

Be sure to spot-check plants for signs of winter injury, mold, and root rot. Plants showing signs of winter injury (a golden orange-colored crown) are likely to die if the weather turns hot and dry. A heavy mold on strawberry roots and crowns is an indication of improper storage. If plants are moldy, discard them. When plants arrive, keep them in the refrigerator until you are ready to plant.

Site Selection: Strawberries grow best in a sunny location on deep, well-drained, sandy loam soil with a pH of approximately 6.2. Strawberries do not tolerate extremes in pH (less than 5.5 or greater than 7.0); thus soil pH should be determined the year before planting and adjusted. Contact [Cornell Cooperative Extension - Suffolk County](#) for information on having your soil tested. Limestone and other soil amendments that are used to adjust

soil pH require at least two months of warm weather to work, so plan ahead to leave enough time to amend the soil if necessary.

Plants can be productive over a broad range of soil types, but extremes should be avoided; clay soils retain moisture but are often poorly drained, and sandy soils require irrigation. The addition of organic matter such as high quality finished compost can help improve sandy or clay soils.

Adequate soil drainage is essential for healthy strawberries. Home gardeners should plant on a ridge or in raised beds if soil drains poorly or consider selecting a more suitable site. Strawberries are shallow-rooted plants and benefit from irrigation. In selecting a site, consider the availability of a suitable water supply to prevent yield reductions caused by drought. Raised bed plantings may dry out sooner than conventional planting. Irrigation provides frost protection as well.

Before planting, find out about the soil history. It may contain troublesome pests, particularly perennial weeds or weed seeds, insects, soilborne diseases, or nematodes. Control insects that reduce strawberry yields, such as white grubs, strawberry root weevils, or European chafers, by growing a crop other than strawberries for several years before planting. In soils where the fungus causing red stele or *Verticillium* wilt is present, plant only resistant cultivars (see list above.) The cultivars Honeoye, Kent, Raritan and Jewel are susceptible to both red stele and *Verticillium*.

Growing Methods: Strawberries can be grown under several different cultural systems and you should decide on a system before ordering plants. The system that is easiest to maintain is the **matted row system**, in which plants are set 12 to 24 inches apart in a row, with 48 inches between rows. Pluck off the flowers the first season to encourage vegetative growth. Plants produce side stems with daughter plants called runners. Let 6 to 8 runners develop per plant (thin out the rest), and these are allowed to fill out a strip (“matted row”) about 12 to 15 inches wide (18 inches at the most). Avoid setting plants in the row at planting any closer than 12 inches since this will cause crowding and the need for more time spent on thinning out runners. In addition close plantings will decrease yields and may increase the incidence of disease.

Use a rototiller or hoe to remove plants that stray into the area *between the rows*. Also *within the row* keep all of the soil covered with plants, but do not allow plants to develop any closer than 6 inches apart. This can be accomplished by clipping off runners. Clipping runners is time consuming, but it results in increased fruit size, decreased rotting and makes harvesting easier.

With the matted row system you can expect about three years of harvests before the stand declines seriously. Eventually weeds infiltrate the system and become more difficult to control and diseases may become more of a problem as well. You should plan on starting over in a new location at some point. If you plan ahead you will not lose a season of strawberries. Although it is tempting it is not recommended that you transplant runners from an old bed to form a new planting. This is an easy way to spread diseases so purchase new, disease-free stock.

Another system called the **ribbon-row system** is more labor intensive and you must initially purchase more plants in comparison to the matted-row system. An advantage to the system though is that it produces fruit the first year. At planting space the individual plants at 4 inches apart in rows that are spaced 36 inches apart. Do not remove the flowers, and clip all runners. This management system is very productive and results in large berries. Continue harvesting berries for about three years or until productivity declines.

Planting and Early Care: Prepare the soil the season before, which helps accelerate soil warming in the spring and minimizes the need to work the ground before planting. Place plants in the soil as soon as possible in the spring (late April – early May.) *Fall planting is not recommended in the Northeast, including Long Island.* Avoid exposing plants to sun and wind. Cool, cloudy weather is ideal for planting. Dig a hole so that the roots can extend vertically into the soil and then cover the plants with soil to just below the crown (**Fig. 1**). It is important to not bury the crown of the plant. It may be necessary to cut the roots back to 4 inches before planting to avoid what is called a “J-shaped” root system. During the first few weeks after planting, be sure plants have adequate water.

Several weeks after planting, newly set plants begin to flower from buds formed within the crown the preceding year. If you are using the matted-row system remove these flowers immediately to prevent fruiting and encourage the development of runners. Although it is tempting to leave these flowers they will produce fruit that will rob plants of energy necessary for growth in the first year, runner production and for winter survival. Although some strawberry cultivars produce only one flower cluster per plant, others produce several and it will be necessary to go over the planting more than once to remove all flower clusters.

Approximately six weeks after planting, apply 2 pounds of 10-10-10 per 100 linear feet of row. Apply another 2 pounds in early September before flower buds form. Apply the fertilizer evenly over the entire row area and avoid contacting the foliage. To avoid damaging the shallow roots do not mix the fertilizer into the soil.

Watering: Since strawberry plants have shallow root systems keeping them well watered is extremely important. Strawberry plants should receive 1 inch of water each week, either by rainfall or irrigation. Avoid watering in very early morning or late evening so plants are not wet for long periods of time. A lack of adequate water will hold back yields.

When overnight frost threatens blooming plants in the spring cover the plants with row covers or use sprinklers to deliver a fine mist over the planting. Ice that forms on the plants actually prevents the flowers from freezing. Apply the mist continually from the time the temperature falls below 34° F. until the ice melts in the morning.

Weed Control: Remove weeds by cultivation, hand hoeing or pulling. The most important time to keep the strawberry planting weed free is the first few months after planting while plants are sending out runners and new plants are becoming established. Remember deep cultivating or hoeing will damage roots. Also be sure to remove any soil covering the crown of the plant as a result from cultivating.

Mulching: Covering strawberry plants with straw in the fall helps prevent injury from low winter temperatures. Apply mulch when nighttime temperatures approach 20° F, covering the plants to a depth of 2 inches. Use clean mulch that does not contain weed seeds.

Remove the mulch in early spring - around the end of March to mid-April, after the threat of severely cold weather has passed. Strawberries are evergreen and the leaves which survived the winter will start to photosynthesize when mulch is removed and they are exposed to sunlight. Place the mulch between the rows where it can help smother weeds and keep mud from splashing onto the fruit.

If you remove mulch early you can cover the plants with floating row covers to provide additional protection from the cold and to encourage early growth. Plants will flower and thus set fruit earlier. It is important to be cautious in using row covers in those locations on Long Island that are prone to late spring frosts, which could kill flower buds. (If you do lose the first flowers to frost, fruits from later flowers usually compensate for the loss.) Remove row covers before flowers appear so that insects can pollinate them. This also reduces the chance of infection from the fungal disease *Botrytis* fruit rot.

Renovation: Renovating strawberries is necessary to prolong the life of the planting. In addition renovation helps reduce the incidence of diseases and stimulates vigorous growth. Renovation should be done immediately after harvesting. Mow down the plants or clip them to a height of 3 inches above the ground. To help reduce diseases collect the leaves during mowing or rake up clippings and remove them to the compost pile.

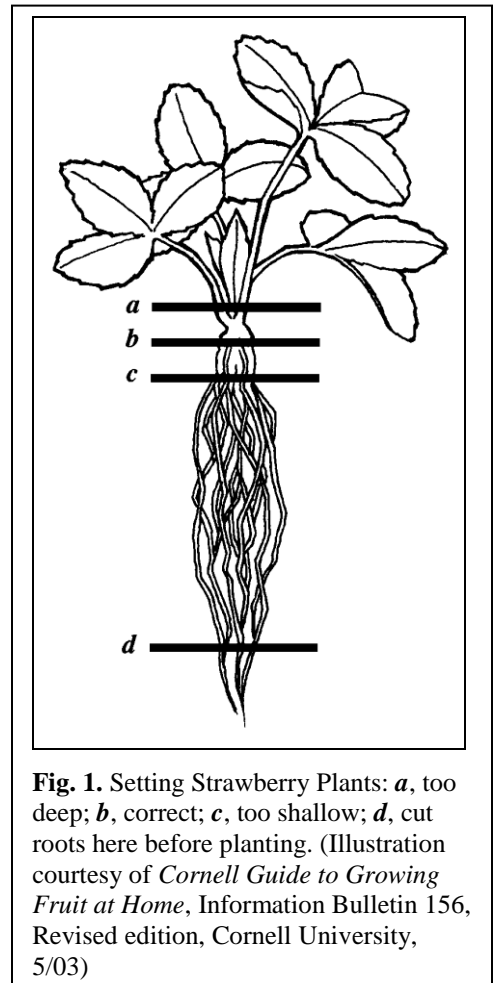


Fig. 1. Setting Strawberry Plants: *a*, too deep; *b*, correct; *c*, too shallow; *d*, cut roots here before planting. (Illustration courtesy of *Cornell Guide to Growing Fruit at Home*, Information Bulletin 156, Revised edition, Cornell University, 5/03)

Rototill the area between the rows, which will incorporate the mulch into the soil. At this time you should also reduce the width of matted rows to 12 inches by rototilling. Rake or hoe soil from the alleyways to cover the plants left in the row to about one inch deep.

To improve fertilizer efficiency during renovation apply 3.3 lbs. of 10-10-10 fertilizer per 100 feet of row at renovation and 1.7 lbs. of 10-10-10 per 100 feet of row in September. (Total = 5 lbs. of 10-10-10 fertilizer per 100 sq. ft. of row)

Harvest: For maximum sweetness and flavor pick fruit a day or two after they are fully ripe. Berries which are picked before they are completely ripe will eventually turn red, but will not sweeten “off of the vine.” Slightly unripe berries can be used for making jam. Under favorable conditions, expect a total yield of about one quart per foot of matted row. Immediately remove berries that do not ripen because they harbor diseases and attract insects.

For long-term storage of fresh berries, select firm berries that are not yet fully ripe, cool them immediately after harvest. Store the berries as close to 33° F. as possible, but be sure the berries do not freeze. When these steps are followed, strawberries will be of acceptable quality for several days.

Resource: *Cornell Guide to Growing Fruit at Home*. Cornell University 2003.

The *Cornell Guide to Growing Fruit at Home* may be purchased by contacting the office directly.

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