

Strawberry Production in the Home Garden

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Strawberries are the most widely cultivated small fruit in American gardens. They are the favorite of many for pies, jams, jellies, preserves and for eating fresh. In as much as strawberries are adaptable to a greater range of soil and climatic conditions than any other fruit, they are well suited to the home garden and may be grown successfully in every part of Arkansas.

Variety Selection

Varieties recommended for use in home gardens are suitable for the matted-row system. A short description of these varieties follows:

Earliglow is noted for its superior dessert quality and disease resistance. The medium-small berries are very attractive with a glossy, deep red color. The plants are very vigorous and productive. Earliglow is the earliest of the recommended varieties for Arkansas. Its major disadvantage is small fruit size on non-primary berries.

Noreaster is another early ripening variety with red stele root rot resistance. The fruit is large and firm and ripens just after Earliglow. The berries possess a strong flavor and aroma when fully mature and are recommended for eating fresh or for freezing.

Cardinal is a vigorous, productive variety developed by the University of Arkansas. It produces large, deep-red berries that have outstanding flavor. The "cap" sits up high on the berry,

making it easily removed for dessert or freezing. It ripens a week to 10 days after Earliglow, but its ripening period is extended over a long period of time (three to four weeks). Cardinal is resistant to most diseases in Arkansas.

Delmarvel is a disease-resistant variety with excellent fruit quality. The fruit is large with good color and ripens in midseason. This variety is vigorous and produces many runners.

Lateglow is a high-yielding variety. The fruit ripens late and has large berry size. In addition, the fruit is medium-red in color, sweet, juicy and aromatic.

Latestar is a large-fruited, glossy-red, productive variety. The fruit ripens late and has a pleasant, slightly acidic flavor. This variety has not been tested extensively in Arkansas and, therefore, is recommended on a trial-basis only.

Everbearing strawberries do not perform as well as the regular varieties, either in quality or yield. Because of the consistently low yields, they are not recommended for Arkansas. "Everbearing" is actually a misnomer. The traditional varieties actually give two crops, one in spring and one in the fall, not "everbearing" as the name implies.

Strawberries normally initiate and set fruit buds based on day length. There have been some recent developments that resulted in "day neutral" varieties that initiate and set

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fruit regardless of day length. The problem in Arkansas and most southern states, is that the summer heat interrupts this process and two crops are attained. Two varieties released by the USDA – **Tribute** and **Tristar** – are available. Tribute has slightly higher yields and is considered the better flavored of the two.

Commercial strawberry growers in Arkansas use Chandler, Camarosa and Sweet Charlie varieties for the annual hill or plasticulture system. This training system is not recommended for home garden strawberry production at this time due to the susceptibility of these varieties to diseases and the need for soil fumigation.

Establishing the Planting

Site and Soil

Strawberries bloom very early in the spring, and the blossoms are easily killed by frost. In areas where late frosts are a hazard, try to select a site that is slightly higher than surrounding areas. Although strawberries grow best in a fertile, sandy loam soil with a pH of 5.7 to 6.5, they may be successfully grown in any good garden soil that is well drained and well supplied with organic matter. Soil for strawberries should be thoroughly prepared for planting. It should be loose and free of clods.

Try to avoid setting strawberries in land that has recently been in sod. A clean-cultivated crop planted on the site for a year or two will leave the soil better prepared for strawberries and will assist in controlling weeds and white grubs which are troublesome in strawberry plantings. Where grubs and ants are a problem, chemical control may be necessary.

Planting

Virus-free, one-year-old dormant plants should be set out early in the spring, about three or four weeks before the average date of the last frost. Spacing of

the plants will depend on the training system used, but they should not be crowded. They should be placed 24 inches apart in rows 3 to 3 1/2 feet apart. Set each plant so that the base of the crown is at the soil level (Figure 1). Spread the roots out and firm the soil carefully about them to prevent air pockets which allow roots to dry out. Irrigate soon after planting if soil is dry.

Maintaining the Planting

Soil Management

Cultivation for weed control in strawberries should begin soon after planting and continue at approximately two-week intervals throughout the first growing season. Cultivation must be shallow to prevent root injury. Hoe as often as necessary to remove grass and weeds growing between the plants.

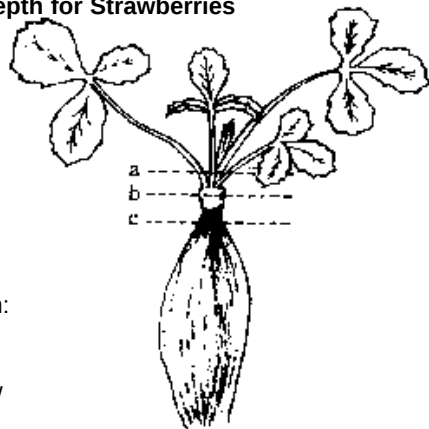
Most home garden strawberry plantings are mulched. Any organic material free of weed seed makes good mulch. Hay, straw and pine needles are most frequently used. Mulch should be applied 2 to 4 inches deep over and around the plants after the first freezing weather in the fall. This protects them from heaving and freezing injury during the winter. After the danger of frost is over in the spring, about half the mulch should be raked off the plants into the area between the rows. Mulch left around the plants will help keep the berries clean, conserve moisture and check weed growth.

Fertilization

Fertilization seldom proves beneficial to strawberries on good soils well supplied with organic matter. Where a soil analysis indicates the need, about 1 pound per 100 feet of row of a complete fertilizer, such as 10-10-10 or 10-6-4, should be cultivated into the soil before planting. The fertilizer used in the fall application should be the same analysis at the same rate and should be broadcast over the row in late August or early September. The limited root systems will not benefit from fertilizer placed in the row middles. Brush the fertilizer off the plants to avoid foliage injury.

Do not apply fertilizer in the spring to beds of strawberries growing in heavy land that will be harvested because there is danger of excess vegetative growth which results in reduced yield, increased rot, later ripening and poor quality fruit. In light, sandy soils where nitrogen leaches out rapidly, a spring application is usually beneficial. On light soils apply a quickly soluble nitrogen fertilizer, such as urea, at the rate of 1/2 to 3/4 pound per 100 feet of row before new growth begins.

Figure 1. Planting Depth for Strawberries



Correct planting depth:
a = set too deep
b = correct depth
c = set too shallow

Training

There are three basic training systems used in strawberry production. Many modifications of these systems are found. Under the matted-row system used by most home gardeners, runner plants are allowed to set freely in all directions. The original plants should be set 24 inches apart in the row. Keeping the width of the plant bed narrow results in a good grade of fruit which is easy to pick.

In the annual hill or plasticulture system, plants are spaced 12 inches apart in the row. All runners are removed as soon as they appear, and the plants are encouraged to multiply in large crowns. This system is desired by many because the planting is easier to cultivate and harvest and produces larger and better berries than other systems. Many plants are required, however, and the initial cost of the planting is high. Use of black plastic mulch and soil fumigation is required with this training system.

Plants in the spaced-row system are set 18 to 24 inches apart in the row. The runner plants are set in place by hand until the desired stand is obtained. They are usually spaced 6 to 12 inches apart. All late-formed runners are removed as they appear.

Use of the matted-row system is recommended for home garden production. This system is relatively simple and will allow for a greater degree of success than the other systems.

Blossom Removal

During the first planting season, all flower stems on the plants should be removed as soon as they appear. This strengthens the plants and allows early and vigorous runner production. The early-formed runner plants bear the best fruit the following year.

Renovation

Soon after harvest, remove the mulch and thin plants to 6 to 8 inches apart. The remaining plants will produce new runner plants to fill the beds for the next season. All practices for the remainder of the summer are done to optimize runner plant development. Apply a quickly soluble nitrogen fertilizer, such as urea, at the rate of 1/2 to 3/4 pound per 100 feet of row to encourage vigorous top growth. Any good garden fertilizer supplying an equivalent amount of nitrogen may be used if desired.

Keep the planting clean-cultivated throughout the summer, irrigating when necessary during the dry season to keep the plants growing vigorously. Strawberry plants require adequate irrigation to give

optimal fruit yield and quality. In general, plants should receive water on a weekly basis, either from rainfall or supplemental irrigation. During extremely hot, dry periods, plants may require irrigation on a daily basis (light, frequent application is best). Fertilize again in the fall as recommended for the first year, and renew the mulch after freezing weather begins. Matted-row beds that exhibit good growth, freedom from weeds and diseases and are renovated annually can be kept in a productive condition for up to five years.

Pest Control

Birds are one of the biggest pests in the home garden strawberry planting. It may be necessary to cover the plants with plastic netting to keep the crop from being eaten before the berries are ripe enough to harvest. Aluminum pie tins suspended by a string or wire above the plants in such manner that they twist and turn in the breeze have been successful in keeping birds away.

Successful strawberry production in the home garden will require efforts to manage diseases and insects. Check with your local county agent for the latest information on strawberry diseases, insect pests and control measures.

Strawberry Growing in Pyramids and Barrels

In a home garden where space is extremely limited or where the gardener wishes to use the strawberry planting as a novelty or decorative feature, the strawberry pyramid (Figure 2) or the strawberry barrel (Figure 3) can be useful and interesting.

Pyramids may be square or round. Each step of the pyramid should have a flat surface not less than 6 to 8 inches in width. The frames for a square pyramid can be constructed out of 6-inch wide boards of a durable wood such as redwood. A suggested soil mixture for the pyramid is two parts good garden soil, one part peat and one part sand.

Figure 2. A Pyramid Planter

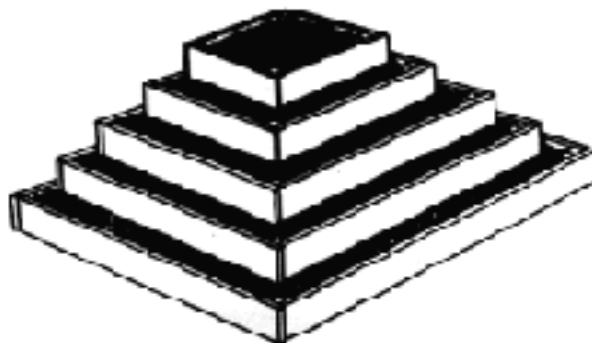
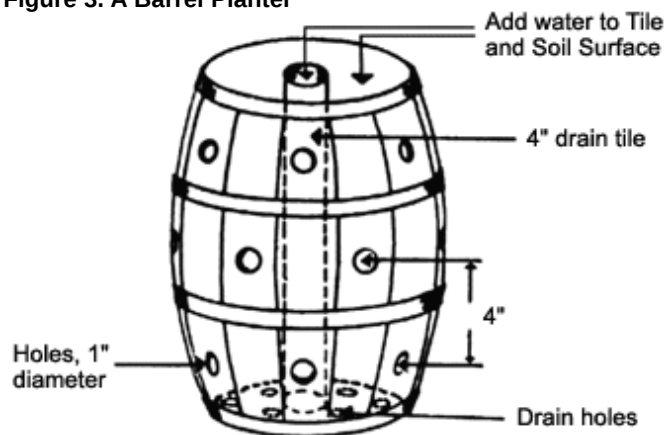


Figure 3. A Barrel Planter



In preparing a strawberry barrel, 1-inch diameter holes are made in the sides of the barrel at approximately 8-inch spacings. As the barrel is filled with successive layers of soil, strawberry plants are carefully inserted through the holes so that the roots are held firmly in contact with the soil.

Though the strawberry barrel may be a successful novelty, yields of fruit will be smaller than those in pyramid culture, and much more attention to planting, watering and winter protection are required.

Damage to the strawberry plants growing under normal cultural conditions can be expected if they are not protected from extreme cold during the winter.

Owing to the fact that plants growing in a pyramid or barrel are elevated above normal ground level and, therefore, are highly exposed, additional winter damage can be expected to roots, crowns and fruit buds. Consequently, care must be taken to provide adequate winter protection.

Pyramids can be mulched with 6 to 8 inches of straw after the soil is frozen. In the coldest part of the state, strawberries in barrels will survive better if protected with burlap covering. For especially cold winters, enclose straw in the burlap for added insulation. However, even with careful mulching, some plant injury can be expected during severe winters.

Harvesting

In the home garden, strawberries should be allowed to attain an overall red color and become fully ripe before harvesting. It is at this stage that the sugar content is highest and the flavor is best. It is necessary to harvest every day or every other day during the peak of the season.

Harvest the berries carefully by the stems to prevent bruising. Pick all that are ripe, since they will not keep until the next harvest. Ripe strawberries may be held for a day or two in a refrigerator.

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