



## Growing Strawberries

*Becky Sideman, UNH Cooperative Extension Professor & Specialist*

Strawberries are an excellent crop for New Hampshire home gardeners. With proper care strawberry beds will produce good crops for three to five years, beginning one year after planting. An initial planting of 100 plants should provide enough fruit for a family of four, with surplus for freezing or making preserves.

### Selecting a Planting Site

Choose your planting site carefully. Strawberries grow best in a deep, sandy loam soil rich in organic matter. The soil must be well-drained. Keep away from areas that remain wet late into the spring. The site should receive full sunlight and have a gradual slope. This helps to prevent frost injury by allowing cold air to drain away from the plants.

Do not plant strawberries where tomatoes, potatoes, peppers, or eggplant have been grown in the past four years because these crops carry the root rot fungus *Verticillium*, which also attacks strawberries. Do not plant strawberries into recently plowed grass or sod areas. This can lead to devastating weed problems and damage by white grubs, a common turf pest that also feeds upon strawberry roots.

Finally, choose a site where there is ready access to a water supply. Irrigation is important for good plant growth during dry periods and can also be used to prevent frost injury in the spring.

### Preparing the Soil

Getting a site ready for strawberry planting may take up to two years depending upon its present condition. Have the soil tested for pH and fertility levels. Strawberries grow best with a soil pH of 5.8 to 6.2; this may require applications of ground limestone to increase the pH of more acid soils. Soil testing can be done through a number of private and public labs. UNH Cooperative Extension offers this service. Forms and instructions are available on our website: <https://extension.unh.edu/Problem-Diagnosis-and-Testing-Services/Soil-Testing>, or you can call our Info Line at 1-877-EXT-GROW (1-877-398-4769).

If the organic matter level of the soil is low and/or perennial weeds are a problem, sow cover crops such as buckwheat or oats and plow

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## ***Did You Know?***

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the crop into the soil before the plants go to seed. There should be time for two sowings in a single season. Applications of organic amendments such as leaf compost or manure, followed by regular periodic tillage for a full season may be used as an alternative to cover crops.

Soil amendments should be determined based on a soil test. If you do not have soil test results, several days before planting, broadcast 20 pounds of 10-10-10 garden fertilizer per 1000 square feet of the site, cultivate the soil to incorporate the fertilizer and break up any clumps or clods. Organic fertilizer sources such as plant or seed meals, sulphomag and rock phosphate may be used in place of synthetic fertilizers. Apply enough of these materials to deliver two pounds each of nitrogen, phosphorus (P<sub>2</sub>O<sub>5</sub>) and potassium (K<sub>2</sub>O) per 1000 square feet.

### **Suggested Varieties**

Many strawberry varieties perform well in Northern New England. Select those that have resistance to red stele and Verticillium root rots, are vigorous growers and that have a consistent record of good yields and high quality fruit. Listed below are varieties of the standard June-bearing strawberry that are disease resistant and have performed dependably in Northern New England.

#### ***Earliglow***

An early berry of high quality. Fruit is firm with excellent flavor and color. Yields may be low in New England. Fruit size tends to decrease as season progresses. Plants are vigorous runner producers.

#### ***Annapolis***

Productive. Medium-large fruit with good flavor and color. Plants are vigorous and produce runners freely.

#### ***Cavendish***

Very productive. Large, firm fruit with good flavor, but fruits may color unevenly. Plants are moderately vigorous.

#### ***Allstar***

Berries are large, conical and light red to orange with mild, sweet flavor. The plants are vigorous and make runners freely.

#### ***Jewel***

Berries are large and bright red with good flavor. Plants are not soil disease resistant so plant only in well-drained soils.

#### ***Sparkle***

Excellent flavored fruit, but dark red and somewhat soft. Fruit size tends to decrease as season progresses. Plants are vigorous and produce many runners.

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It is usually best to plant two or more varieties, as performance will vary according to conditions at each site. Try new varieties in small trial plantings, next to a variety with which you are familiar.

### Planting and First Season Care

Strawberries should be planted in the spring as soon as the soil is dry enough to be prepared. Purchase only certified disease-free plants from a reputable nursery. Plants should have large crowns with healthy, light-colored roots.

Plant strawberries in holes wide enough to spread the roots out slightly and deep enough to bring the soil halfway up the crown. Pack the soil firmly around the plants and irrigate immediately after planting.

The best planting system for most gardens is the matted row. For this system, plant strawberries 18 inches apart in rows that are 48 to 52 inches apart.

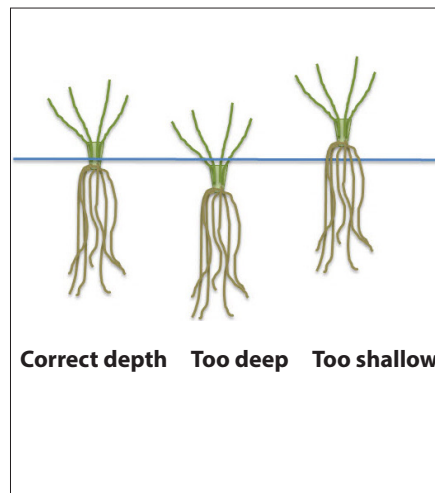
Soon after planting, the crowns will produce a few leaves and flower buds will emerge. Pinch off all flowers during the planting year. This encourages plant vigor and runner growth to fill out the bed, leading to better yields next year.

Runner plants will begin to emerge from the crowns in the early summer. Allow these to fill out the rows. The width of each row should be limited to 24 inches to maintain easy access in the planting. Before they root, position runners within the desired row width and hold them in place with small stones, clumps of soil or old fashioned hairpins. Runner plants that grow outside the 24-inch row width should be pinned back into the row to root. Remove excess runner plants if the plants become too crowded (less than 6 inches between plants).

Be sure to control all weeds that emerge during the season. Weeds will take over a strawberry bed and seriously reduce yield. Frequent, regular cultivation by hoeing or hand pulling weeds will greatly increase the life of a strawberry planting. Irrigate plants regularly to insure optimum growth if rainfall is insufficient. One to two inches of water per week is ideal.

### Mulching

Apply mulch over strawberries in mid-November to protect plants from extreme winter cold and from damage to the roots caused by rapid freezing and thawing of the soil. Straw is most commonly used, but pine needles or wood shavings or other loose organic materials which will provide cover without matting will also work. Do not use hay because it contains weed seeds that will start to grow among the strawberries the next spring. Spread the mulch in a fluffy layer 3 to 6 inches deep over the plants.



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### *Did You Know?*

The soil line should come halfway up the strawberry crown of bare-root plants as shown.

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**Strawberries in full bloom must be protected from frost to ensure good fruit set.**

In early spring (mid-April) rake the mulch off the plants into the aisles between rows. This creates a clean walkway and will keep the fruit dry and clean. If a frost is predicted after the mulch has been removed, rake it back over the plants for the night to protect the flower buds.

Irrigation is another way to provide frost protection. Set up sprinklers to provide complete coverage of the planting and turn the water on when the temperature drops to 33° F at the plant level. Continue to run the water until all the ice formed on the plants has completely melted. Special frost nozzles that emit only enough water to protect the flowers and not flood the beds are available for some types of sprinklers.

Spun-bonded polyester “floating row covers” placed over plants will provide some winter and frost protection. These lightweight fabrics create a greenhouse effect, which will make the plants bloom and fruit earlier in the spring and produce larger yields. Place row covers over the plants in the early fall or the early spring. Plants covered in the fall will have greater yield benefits from the covers, but additional mulch such as straw should be applied in mid-November for extra winter protection. Remove this straw in late March, or as soon as the snow melts, leaving the row covers in place.

Rowcover can be used in spring only. While spring covering may not provide as high a yield increase as the fall application, it avoids the practical problems of applying mulch over the covers. Apply the rowcover as soon as the mulch has been removed, and leave the row covers on until the plants begin to bloom. This may occur 2 to 3 weeks earlier than plants without row covers so you must be prepared to protect the flower buds from frost. Although row covers will provide some frost protection it is best to mulch or use irrigation over the row covers if a hard frost is predicted.

### **Renewing the Planting**

Strawberry beds can usually be carried over for three to five years or more if the plants are vigorous, the bed is kept weed-free, and the planting is properly renewed or renovated every year. The bed should be renovated shortly after harvest is complete. First, mow all the leaves off the strawberries about 1 1/2 inches above the crowns. Fertilize by broadcasting 20 pounds of 10-10-10 or organic equivalents per 1000 square feet. Next, narrow the plant rows to strips ten or twelve inches wide with a rototiller or spade and spread a light layer (1/2 to 1 inch thick) of soil over the remaining plants, being careful not to bury the crowns. If necessary, thin the remaining plants, leaving only the most vigorous and healthy. Irrigate the planting well, wetting the soil to a depth of six inches. During the summer, runner plants will emerge and should be placed to fill out the row to the desired two-foot width, similar to the planting year.

Keep the planting healthy and vigorous throughout the season by controlling weeds, maintaining the proper plant density and row width, and by regular watering.

### Disease and Insect Management

Strawberries are subject to attack by fungal diseases such as root rots and gray mold and several types of insects, including tarnished plant bugs and strawberry bud weevils, but many problems can be prevented with proper planning and care. Plant varieties that are resistant to red stele and *Verticillium* root rots. Discourage insect pests by keeping the planting weed-free. Prevent gray mold by keeping the plant rows narrow to improve air circulation and mulching between rows.

### Day-neutral Strawberries

Day-neutral strawberries flower throughout the summer months and into the fall, providing fruit well after June- bearing strawberries have stopped. The productivity and fruit quality of day-neutral strawberries are much better than the old “everbearing” types such as ‘Ozark Beauty’. Because of their unique growing habit, day-neutral strawberries must be treated differently than the June-bearing types.

Site selection and soil preparation for day-neutral strawberries should follow the same guidelines described for June-bearing varieties. Day-neutral strawberries are easiest to manage on raised beds. Create beds six inches high and 24 inches across on the top. The beds should be four feet apart on center leaving about two feet between beds for a walkway.

Plant two rows of strawberries on each bed, setting the rows one foot apart (six inches to the left and right of the center of the bed). Space plants eight inches apart within the row. Stagger plants in the two rows on a bed, so that a plant in one row corresponds to the space between plants in the other row. See the diagram, which shows spacing of day-neutral as compared with June-bearing strawberry plants.

Plant the crowns in early spring and mulch around the plants with 2 or 3 inches of straw, pine needles or wood shavings. Pinch off all flowers that appear for four to six weeks after planting. Plants should then produce fruit in about six weeks and will continue producing until frost.

Remove all runners to keep aisles clear and improve fruit quality. Water plants regularly to improve fruit size. A light side-dressing of ten pounds of 10-10-10 fertilizer or its equivalent per 1000 square feet should be applied in early August.

Day-neutral strawberries are generally grown as an annual to be plowed down the spring after planting and replanted every year. Beds can be carried over if they are healthy and weed-free but yields from day neu-

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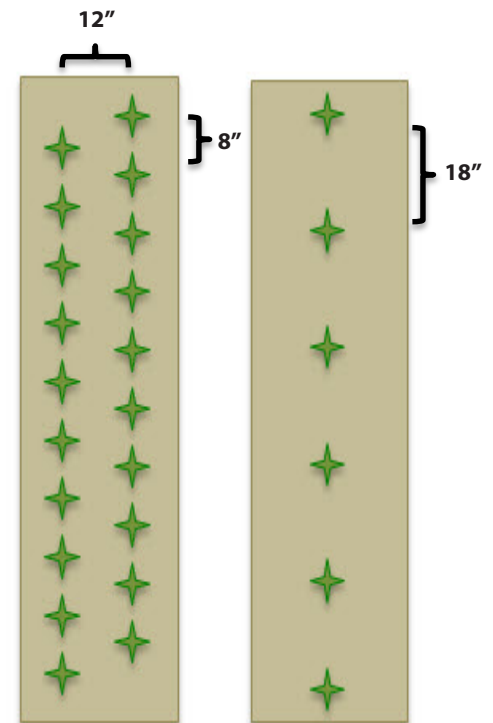
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## INFO LINE:

For specific pest identification and control measures:  
1-877-398-4769,  
Monday-Friday, 9am-2 pm.

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Day-neutrals on raised bed

June-bearers on matted row

Recommended spacing for day-neutral vs. June-bearing strawberries is shown above.

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tral strawberries tend to decline dramatically in successive years. If a planting is to be fruited a second season, mulch the beds in the late fall as described for June-bearing types. Remove the mulch in the spring and pinch blossoms for the first four weeks to improve later yields. If allowed to fruit, the plants will bear a heavy early crop followed by a smaller summer and fall crop. Fertilize in the spring with 20 pounds of 10-10-10 or its equivalent per 1000 square feet.

Day-neutral strawberry varieties that do well in New England are 'Seascape', 'San Andreas' and 'Albion', as well as the older varieties 'Tribute' and 'Tristar'. They differ in fruit size, flavor, and runner production, but all have good fruit quality.

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### **About the Authors**

Original fact sheet by David T. Handley, University of Maine Extension Small Fruit and Vegetable Specialist & William G. Lord, UNH Extension Fruit Specialist. Reviewed and revised by Becky Sideman, UNH Extension Vegetable & Berry Specialist.

Dr. Becky Sideman is an Extension Professor in the Dept. of Biological Sciences at UNH, and is the state specialist for Sustainable Horticulture for UNH Cooperative Extension. Her program emphasizes vegetable and berry crop production including season extension for Northern New England.

### **For More Information:**

#### **State Office**

Taylor Hall  
59 College Rd.  
Durham, NH 03824  
<http://extension.unh.edu>

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answers@unh.edu  
1-877-EXT-GROW  
(1-877-398-4769)  
9 am–2 pm M–F  
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