

Growing Strawberries for Home Gardens

Also available in this series

- *Growing Currants and Gooseberries for Home Gardens*
- *Growing Elderberries for Home Gardens*
- *Growing Raspberries and Blackberries for Home Gardens*

INTRODUCTION

Growing strawberries can be interesting and rewarding for the home gardener, whether they are for eating or for ornament. This factsheet discusses planting, care and selection of cultivars of strawberries for the home garden.

Strawberries can be grown anywhere in Ontario. In a sunny location, they are the first fruit to ripen and, from among the many cultivars, can be picked throughout the summer until frost. Berries are delicious when served fresh and can be frozen, canned or made into jam, jelly or juice. With proper care, enough berries for a family can be obtained from a relatively small area (Figure 1).



Figure 1. Strawberries are the first fruit to ripen in Ontario.

GROWTH CYCLE

Growth in common cultivars is affected greatly by temperature and the length of the daylight period. In new plants, runner production occurs during the long days and warm temperatures of summer. Then, in the short, cool days of fall, runnering stops and flower buds form within the plant crown. In the spring, when plants start growth, days are too long for any new flowers to form. The flower clusters, already within the crown, emerge over a 3-week period in late May and early June. Berries start to ripen 4–5 weeks after the first flowers open and continue to ripen for about 3 weeks. Toward the end of the harvest period, when days are long and warm, plants again grow runners that produce new plants.

“Everbearing” and “day-neutral” cultivars are less sensitive to temperature and day length than ordinary cultivars. They too form flower buds in the fall, which develop into berries the next summer. However, during the summer they also form flowers that produce berries in late summer and fall.

SOIL TYPE

Strawberries can be grown in most garden soils. However, they grow best in well-drained, sandy loam soils that are well supplied with organic matter. Gravelly soils can be improved by adding organic matter, but extra water and fertilizer are needed for good yields. Clay soils drain poorly and are hard to manage but can be improved by adding organic matter. Planting on ridges also helps if soils drain poorly. Good drainage is very important as strawberry roots do not grow well in wet soil.

PREVIOUS CROPS

Wherever possible, plant strawberries in soil that has not grown strawberries, raspberries, potatoes, tomatoes, peppers or eggplants in the past 4 or 5 years. This precaution will help avoid serious root diseases such as verticillium wilt and black root rot.

SOIL PREPARATION

Weeds

In the year prior to planting, destroy quack grass and other perennial weeds. Do not permit weeds to go to seed.

Organic Matter

A good supply of organic matter in the soil is important. Organic matter improves air and water movement, favours growth of helpful soil organisms, provides nutrients and increases the water-holding capacity of the soil. Manure applied at 8–12 L/m² is a good source of organic matter. Leaves, chopped hay or straw, peat moss, sawdust, grass clippings, etc., can also be used. Apply the organic material in the fall. Dig, rototill or plow it into the soil so the material will be well decomposed by planting time. If material other than manure is used, add ammonium nitrate at 10–15 g/m² to help decomposition.

Fertilizer

In the spring, apply a complete fertilizer, such as 10-20-20, at 50–75 g/m². Scatter it evenly and work it into the soil several days ahead of planting. Most soils in Ontario do not need a lime application.

PLANTING

Time

Plant in the spring as soon as the ground can be prepared. This allows plants to become established early and start producing runners. Early-formed runner plants produce more berries than plants formed in late summer and fall. Fall planting is not recommended. Commercial plants are generally not available in the fall.

Plants

Use healthy plants that have well-developed crowns and many creamy or white roots. Obtain plants from the Ontario Strawberry Plant Propagation Program.

These plants have been produced under guidelines designed to control viruses and other serious pests. A list of strawberry plant propagators in Ontario is available on the [ONfruit blog](#).

Storing Plants

Get plants as close to planting time as possible. Plants are usually sold in plastic bags without soil. If plants must be stored for short periods, keep closed packages in the refrigerator until planting time. The roots may look dry, but it is usually best not to water them during storage, to avoid rotting.

Plant Distances

Strawberries are usually grown in the “matted-row” system. Set plants about 45–60 cm apart in rows that are 90–120 cm apart. Allow runners to develop and produce new plants to fill out the rows.

The “hill” system is useful for poor-runnering cultivars such as many of the everbearers. Set plants 25 cm apart in the row and keep all runners removed. In this system, yields are usually best if two or three rows are spaced 25 cm apart and a walking space of 75 cm is left between this group of rows and the next.

Setting Plants

Use a spade, shovel or trowel to set the plants. Dig the hole large enough that the roots can be placed straight downward but spread somewhat. The midpoint of the crown should be level with the surface of the soil. If crowns are set too high, both crowns and roots may dry out. If crowns are buried, they smother and rot. Fill the hole with soil and press the soil firmly around the roots.

Be careful that plants do not dry out during planting. The fine roots will dry out in a few minutes on a sunny, windy day if plants are not covered. If roots are dry, plants can be dipped in water just before planting. Do not leave them sitting in water. Do not leave plastic bags of plants in the sun as the temperature gets very hot inside the bags. After planting, water the plants.

CARE OF YOUNG PLANTS

Blossom Removal

Plants grow better and produce more runner plants when blossoms are removed. Remove all blossoms that appear a few weeks after plants are set. More information on everbearers is in [Everbearers](#).

Hoeing

Hoe around the plants often enough to destroy weeds and to keep the soil loose. This promotes good growth and permits runner plants to root quickly. Hoeing should be shallow around the plants, or the roots will be injured. Areas between rows can be cultivated with hand cultivators or rototillers.

Watering

Water during dry periods. Wet the soil to a depth of about 15 cm and let it dry out fairly well before watering again.

Mulches

Sawdust, straw or other mulching materials may be placed around the plants in the row to keep down weeds, conserve moisture and keep the fruit clean. This is particularly useful for hill-system plantings. Make sure the mulch does not cover the tops of the crowns.

Black plastic film or plastic-coated paper can also be used as a mulch, especially in the hill system. Clear plastic is not suitable because weeds grow under it. Put the plastic on before planting. Bury the edges to hold the plastic in place and then make slits just large enough to plant through. To allow any new runner plants to root in the mulched area, slits must be made in the plastic. After a plastic film is in place it is difficult to add fertilizers to the soil. There may also be some difficulty getting water to the roots. It may be necessary to make some holes in the plastic to permit rain or irrigation water to enter the soil. A small soaker hose could also be left under the plastic to permit watering.

Spacing Runner Plants

In matted rows, space runner plants about 15 cm apart in the row. A small amount of soil can be placed just behind a runner plant to hold it in place. If plants are crowded, they do not yield well and produce small berries. Also, when plants are crowded, blossoms may not be pollinated well and diseases are usually more troublesome.

Keep the rows at a convenient width for picking. Fairly narrow plant rows 45–60 cm wide are usually easier to manage than wider ones. However, wider beds can be allowed if garden space is limited. After

the desired plant stand is obtained, remove extra runners frequently.

Fertilizers

After planting, no more fertilizer is generally needed until late summer. However, if the soil is very sandy or if plants are pale and lack vigour, there may be some benefit from an application of ammonium nitrate in late June or early July. Use the same rate as for an August or September application.

In late August or early September, an application of ammonium nitrate at 15 g/m of row is often useful. Spread it over the plants when the leaves are dry and then brush it off. This fertilizer burns leaves if it is not brushed off quickly, or washed off with water. Always follow label directions.

WINTER PROTECTION

Low winter temperatures injure roots, crowns and flower buds. Also, freezing and thawing of the soil lifts plants and breaks roots. With winter protection, strawberry plants can be grown in any part of Ontario.

Material

Cover plants with straw (wheat, oat, rye, switchgrass) in the late fall. Use straw that is free of weed and grain seeds. One bale will cover about 9 m². Hay generally has too many grass and weed seeds to make a good mulch. Leaves, grass clippings, etc., are not suitable because they can smother the strawberry plants.

When to Apply

Apply the straw after there have been several light frosts but before the temperature goes much below –7°C. Temperatures below –7°C can cause injury. In Southern Ontario, straw is usually applied some time after mid-November. If applied too soon, before plants are dormant, the straw can cause rotting of leaves and crowns.

When to Remove

Remove the straw in the spring as soon as there are signs of new leaf growth under the straw (usually in late April). New growth under the straw is indicated when new leaves become a pale yellow colour. Some of the straw (about one-quarter) can

be left on the plants, and plants will grow through it. The rest can be placed between the rows to help smother weeds and keep berries clean. It can also be put back on the plants for frost protection during blossoming.

CARE WHEN BERRIES ARE DEVELOPING

Frost Control

Frosts often occur when strawberries are in bloom and can injure blossoms or developing berries. Considerable protection can be obtained by covering the plants with 5–7.5 cm of loose straw, or with old cloth or paper. Plastic sheets give little or no protection. Keeping plants wet will also give protection, since the change of water to ice on the plants releases heat. Use special sprinklers that deliver about 2.5 mm of water per hour, and keep sprinkling to a minimum because excess water is harmful. Start sprinkling when some ice is detected on the plants. Keep irrigating as long as ice continues to form. It is only when all water on blossoms is frozen that risk of injury occurs.

Fertilizers

Fertilizer applications to bearing plants are not recommended from the time straw is removed to the end of harvest. Fertilizers applied in this period tend to give excessive leaf growth and lead to problems with fruit rot.

Watering

Adequate soil moisture is very important from bloom time to the end of harvest. However, excessive watering can be harmful. As a rough guide, strawberries need about 25 mm of water a week when berries are developing. If rainfall is not sufficient to supply this amount, then plants should be watered. Wet the soil to a depth of about 15 cm.

Yields and Duration of Plantings

A matted row 10 m long and about 60 cm wide should yield about 20 kg of strawberries. Everbearing cultivars usually do not produce as large a summer crop as regular cultivars, but the combined summer and fall crops should give good yields.

Vigorous plants may be kept for a second, or even a third or fourth fruiting season.

RENEWING A PLANTING

Fertilizers

As soon as picking is completed, apply 10-10-10 fertilizer at 50–75 g/m². Spread it evenly over the plants and the alleys between the rows. Foliage should be dry. If plants are not mowed, brush the fertilizer off the plants. Always follow label directions.

Mowing

If possible, mow off the leaves with a rotary lawn mower (or hedge clippers) with the blade set high enough that crowns are not injured. In northern areas where berries ripen late and the growing season is short, do not mow.

Watering

After mowing, water the plants to carry the fertilizer down to the roots. Following watering, weeds can be pulled easily. Fertilizing, mowing and watering are done to keep plants growing actively.

Plant Spacing

In both matted-row and hill plantings, remove runners produced during harvest. They can be removed as they appear, or at the end of harvest. Also, remove all runners that form during the rest of the season, unless some are needed to fill gaps. In this way, only the original plants are kept. Space these plants 15–20 cm apart. This method is the best one when plants are kept for a second season only. When plantings are kept for several years, let a few new runner plants develop in the alley along one side of the row. Remove a corresponding number of older plants from the other side of the row. In this way, a third to half of the bearing row can be replaced by younger plants.

Fall Treatments

Apply ammonium nitrate in late August or early September as outlined under [Care of Young Plants](#). Also, apply the straw mulch recommended under [Winter Protection](#).

Spring Treatments

Treatments for renewed plantings are the same as given under [Care When Berries are Developing](#).

EVERBEARERS

As mentioned under [Growth Cycle](#), everbearing cultivars have the ability to produce blossoms in the summer for a late-summer and fall crop.

Culture of everbearers is almost the same as that described for regular cultivars. In the year everbearers are planted, remove all blossoms until about the middle of July, or when plants have 6–8 leaves. The blossoms that form later will produce a late-summer and fall crop. In the following year, these cultivars bear a crop at the regular time in early summer. They also will bear a crop in the late summer and fall of the second year, but often the plants bloom very profusely then, and blossoms and berries are small. To avoid this, keep some of the new runner plants formed in the spring of the second year to produce the fall crop. Do not mow the foliage of everbearers when renewing the planting.

SEASON EXTENSION

Floating Row Covers

Spun-bonded floating row covers (Figure 2) can be placed over the strawberry plants to produce ripe berries 1–2 weeks earlier than normal. Remove straw mulch from over the plants in early to mid-April, or once new leaves begin growing out of the crown, and cover rows with the floating row covers. Secure edges carefully with sandbags or bury the edges with soil. The cover should be removed at 5%–10% bloom to allow pollination but can be pulled back over the berries at night for extra warmth and 1–2 degrees of frost protection.



Figure 2. Floating row covers over a strawberry field.

Plastic Tunnels

Tunnels constructed of clear plastic film (Figure 3) can be put over strawberry plants in the spring to produce ripe berries 1–2 weeks earlier than normal. Plastic can also be used to extend the fruiting of everbearers in the fall. The following materials can be used to construct tunnels for plant rows about 60 cm wide:

- plastic film, at least 2 mil thick, 127 cm wide
- hoops, number 8 or 9 galvanized wire, 180 cm long with a hook welded 23 cm from each end
- pieces of heavy twine, such as polytwine, with a loop tied at each end and a finished length of 120 cm

Insert wire hoops about 75 cm apart along the row. Push the ends into the ground to the hooks. Stretch the plastic tightly over the hoops and bury it at each end of the row. Place a piece of twine over the plastic and behind each hoop. Slip the looped ends over the hooks on the hoop. The twine holds the plastic tightly against the hoops.



Figure 3. Low tunnel used for season extension.
Source: Dubois Agrinovation.

Tunnels can be installed early in April in Southern Ontario, or once the straw mulch has been removed. Remove the straw mulch first. On sunny days, if the temperature goes above 30°C in the

tunnel, ventilate by lifting the plastic from the ground, usually along the side away from the wind. The twine will hold the plastic in place. When plants are in bloom, ventilate the tunnels for some time each day to prevent high humidity and to allow insects to enter for pollination. On frosty nights, the plastic film gives little protection to blossoms, so cover the tunnels with cloth or paper, or apply water to form a layer of ice on the plastic. Remove tunnels when the weather turns warm, and save materials for use again.

OTHER GROWING SYSTEMS

Barrels and Pyramids

Plants can be set in holes made in the top and sides of a barrel filled with soil. Some garden centres and nurseries sell forms for planting strawberries in a pyramid shape. Forms can also be homemade. Everbearing cultivars are normally used. Barrels and pyramids are mainly useful when garden space is limited or for ornamental value. Plants should get full sunlight for most of the day for best results.

Climbing and Hanging Basket Strawberries

Everbearing cultivars are grown for these uses. Mother plants are set in soil, then runners are either tied up to a trellis or allowed to hang from a suspended mother plant. Fruit production with these methods is likely to be disappointing.

CULTIVARS — EARLY TO LATE-SEASON

Wendy

Productive early-season variety. Berries are wedge-shaped. Plants are vigorous and moderately resistant to powdery mildew. Performs best in Eastern and Northern Ontario.

Kent

First picking is about June 18 at Vineland in the Niagara Region. Berries are large, moderately firm and dark red. Plants are vigorous and productive. Performs best in Eastern and Northern Ontario.

Cavendish

Slightly earlier than Kent, with a fairly long harvest season. Berries are very large, firm and bright red but become very dark when over-mature.

Jewel

Mid-season to late mid-season variety. Semi-vigorous plants with good field and bright, glossy red berries. Susceptible to winter injury. Good for freezing.

Governor Simcoe

Late mid-season variety. Vigorous plants with bright, light red, firm berries. Berries have a mild, pleasant flavour. Performs well in Southwestern Ontario.

Valley Sunset

Very late variety. Large, bright red berries with moderate yields. Berries have a mild sweet flavour. Good variety to extend the season.

EVERBEARING AND DAY-NEUTRAL

Albion

Peak production in late August and September. Very high-quality fruit with excellent flavour. Less winter hardy than Seascape.

Seascape

Peak production in August and early September. Firm, bright red fruit. Higher yields than Albion.

RELATED LINKS

[Ontario Strawberry Plant Propagators and Plant Suppliers](#)

This factsheet was written by Ontario Ministry of Agriculture, Food and Rural Affairs fruit specialists.