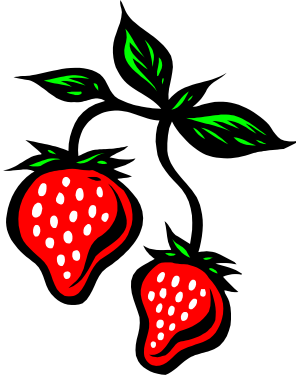


Unique Garden Centre



STRAWBERRIES

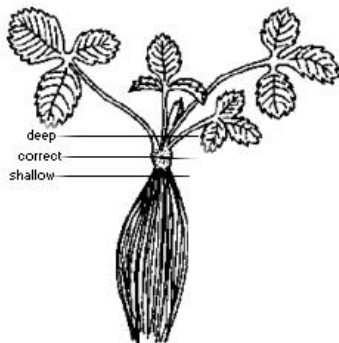
Modern strawberries are all hybrids of *Fragaria chiloensis*, the large fruited Chilean strawberry. A number of varieties do very well here. There are three categories of strawberries, based on when they produce fruit. June bearing strawberries produce for about 2 weeks in late June. Everbearing actually have two main seasons of berries, mid June and August. Day neutral plants produce all summer long starting about the beginning of June until about the end of August.

These delicious berries can be grown in soils ranging from clay to sandy soils as long as it is provided with adequate moisture, good drainage, and nutrients.

Strawberries with their attractive foliage, white flowers and beautiful red or yellow berries make an attractive ground cover besides being tasty. Additionally, they require little space as compared to many other fruit bearing plants.

Strawberries are a member of the rose family. They are generally grown as perennials. They generally are productive for 3 to 4 years after that fruit quality and yields generally decline. The herbaceous strawberry plants is composed of a crown, a compressed stem which has multiple stems growing from it, fibrous roots, and three parted leaflets.

Strawberries are usually purchased as bare root or potted plants. For the home gardener, plants should be set 18 to 24 inches apart in rows 24 to 30 inches apart. Planting depth is very



important. When planting the strawberries soak the root for about an hour or two not much longer, then plant them right away. The middle of the crown must be even with the surface of the soil (see diagram) and the hole deep enough so that the roots can hang straight down without bunching. Remove any damage roots before planting. Firm the soil well around the roots and water. Keep the plant well watered for two weeks after planting. When setting out plants, a cool cloudy day is the best day to plant the strawberries or provide protection from the sun and wind by covering them with wet burlap.

The first year the flowers and runners should be pinched off to enable better future crops of berries. Though, the one in seven rule may be used to allow for fruit production the first year. This allow 1 out of every seven flowers on the plant to produce a berry with the rest being pinched off. This allows for berry production while having little effect on root development.

For best fruit production, strawberry require full sun with even soil moisture. The soil should have been cultivated for 1 to 2 years before planting to eliminate white grubs esp. in areas that were previously lawns and to eliminate weeds from the area. Strawberries should also not follow such plants as tomatoes, potatoes, peppers, eggplants, peas, beets, raspberries, or blackberries since these plants may serve as hosts for vermicillum wilt or other diseases which can remain in the soil and infect the strawberries. Strawberries while they can grow on a wide range of soil due to their shallow root system, grow best on loam or sandy loam soils. These soils provide good drainage but also can supply adequate water and nutrients. Sandy soils or heavy clay soils may be modified by the addition of organic matter to improve the water holding capacity and drainage of the respective soil type. Another alternative to planting on soils with poor drainage is to used raised beds that are 8 to 10 inches high. Strawberries also may be easily grown in containers. Strawberries will generally grow best at a pH of 6.2 but can grow in a range of pHs from 5.5 to 7.0. Below 5.5, Al toxicity is a problem while above 7.0, micronutrients may become deficient.

Strawberries require lots of water (1 ½” – 2” per week) Lack of it during the period when fruit is being set will result in few and small berries. Unless there was evidence that plants might be lacking something, fertilizer after fruiting with a balanced fertilizer such as 10-10-10.

Weed control is essential for good production. The weeds can effectively compete for water and nutrients with the shallow rooted strawberries. The weeds should be hand pulled but care must be taken into not damaging the shallow roots of the strawberry plant. Mulches may be used to help prevent weeds from growing around strawberries. Straw, sawdust, and bark may be used as mulches though they may limit N availability if not aged. Additionally, mulch can create an area where slugs love to live.

In areas where winter are cold, a 6 inch mulch of straw may be used to help protect the plants from frost damage. The mulch should be placed on the plants when the temperature reaches 20F. The mulch should be removed when the soils thaw.

There are several disease that can infect strawberries. Vermicillum wilt (*V. alburatum*) cause wilt in midsummer with the outer leaves dying. This fungus can survive several years in the soil.

Gray Mold is a fruit rot disease that cause the affected flowers to turn brown with the fruit become soft and covered with a gray mold. This disease is more common when the weather is cool and damp. Pick and discard infected fruit. Use a mulch to prevent the berries from having

contact with the soil surface. Avoid planting in low lying wet environments. **Leaf spot** (*Mycosphaerella fragaria*) occurs virtually anywhere strawberries are grown. It is generally characterized by purple or red spots on the upper leaves. **Leaf scorch** (*Diplocarpon earliana*) causes dark purple spots on the upper leaves. **Leaf Blight** (*Dendrophoma obscurans*) occurs as large red to brown spots with a purple colored margin. Most leaf diseases are more

common on older fruiting plants. Good air circulation and good growing condition are the best way to prevent this disease from occurring. If the problem is persistent, start with new plants in an area away from infected area.

There many insects which can damage strawberry plants. The insects besides damaging the plants may also transmit diseases to the plants. Nematodes which are microscopic worms can cause summer and spring dwarfing. **White grubs** (Phyllophaga or Lachmosterrea) which are a beetle larvae girdle crowns and feed on roots. Don't plant strawberries in areas where lawn was grown before. Deep rooted legumes can serve as barrier to the white grubs. Beneficial nematodes or bacteria which produce milk spore disease can effectively control the grub population.

Tarnished plant bug is a tiny insect only 1/4 inch long with yellowish and black spots which damages the strawberry flowers. The berries are small and distorted. Look for green nymphs on the plants and spray with a pesticide specific for the insect. Remove and discard the berries.

Remove ground cover from around your strawberries since this is where the pest overwinters.

Strawberry leafroller (*Anycylis comptana*) in its larvae stage rolls the strawberry leaves and feeds within the rolled area causing the leaves to brown. It is common in Canada and east of the Mississippi River in the United States. The adult is a brown moth with light yellow markings. The larvae are pale green to yellow in color. There are some parasites that do attack the insect including *Macrocentrus ancylivorous* and *Spilochalcis albifrons*, otherwise pesticides must be used. **Root weevils** lay eggs in the flower of strawberries and then munch on the stem of the strawberry plants. The larvae feed on the flower buds and roots. There are four species of this insect that cause the problem. They are strawberry root weevil (*Otiorhynchus ovatus*), the black vine weevil (*O. sulcalus*), the rough strawberry root weevil (*O. rugosostriatus*), and the claycolored root weevil (*O. singularis*). The weevils are widely distributed in the Northern U. S. and southern Canada. All of the weevils are snout nosed beetles with a hard shell body. They range in color from reddish brown to black. The larvae are legless white color body tinged with a pink color with a brown head. They hibernate in woodlands or in fallen foliage so destroying a host area can be a means of control. Also avoid planting strawberries after a lawn. Otherwise, a pesticide specific for the insect may have to be applied. **Spider mites and cyclamen mites** (*Tarsonemus pellidus*) cause damage to strawberry plants by feeding on them and initially causing the leaves to brown and then die. The new growth is stunted and yellowish in color. Look for webbing on the underside of leaves and tiny yellow or green two spots insects. They do best in hot dry weather. Spraying the plants hard with water can often reduce the population greatly. Beneficial insects such as predatory mites can also be an effective means of control. Insecticidal soaps are also used as means of control. **Strawberry bud weevil** (*Anthonomus signatus*) is found from Canada down to Texas. The weevil lays eggs on the strawberry flowers and then girdles the strawberry stem. The larvae eat the strawberry flower buds and destroy them. The adult is a brown snout-nosed beetle with black patches on its wings. The larvae are white stubby curved grubs. Destroy damage buds and remove overwintering foliage. An insecticide sprayed in early spring can give effective control against the pest. **Strawberry rootworm** (*Paria fragalariae*) is widely distributed throughout the United States and Canada. The adults feed on the foliage while the larvae feed on the crown and roots of strawberries. The beetles are shiny dark brown color with black markings. The larvae are white curved like with three pairs of true legs. Plowing of the soil and keeping the plants



away from overwintering areas are the best means of control. **Strawberry aphid** (*Chaetosiphon fragaefolii*) is widely distributed in North America and attacks the leaves of strawberry plants. There is often fungal growth associated with it. It has a similar symbiotic relationship with ants and control is similar. **Slugs and snails** will often eat holes into the strawberry fruit. They often leave a characteristic slimy trail. It is often best to eliminate dark moist places where they like to stay during the day and then come out at nights to feed.

Harvest strawberries 1 to 2 days after maximum color has been reached for best flavor. Place in a refrigerator immediately after harvesting in a loosely wrap bowl to prevent decay and keep maximum flavor.