



Unit B: Establishing a Fruit Garden

Lesson 3: Growing and Maintaining Small Fruits

Terms

- Heeling-in
- Arbor
- P1 soil test
- K soil test
- Primocane
- Floricane
- Banded fertilizer
- Broadcast fertilizer
- Frost protection
- Trellis
- Cane
- Perennial
- Biennial

- 
- I. ***Small fruits*** are the edible fruit that is produced on a small perennial plant.
 - A. Four factors affect small fruit choice: the size of your family, personal taste preferences, the space available, and planned usage of the fruit are factors in determining what to plant.
 - B. The ideal small fruit site would be near the house with fertile well-drained soil.
 - I. Full sunlight is preferred.
 - C. Varieties for home small fruit planting should be selected for high quality; either for eating fresh, preserving, or both.
 - I. Selection of early, mid-season, and late-season varieties will provide a harvest of fresh fruit during a longer period.
 2. The use of several varieties helps ensure a successful harvest.



II. Most small fruit plants occupy the same location for several years, therefore, it is desirable to build up the soil fertility of the proposed location. Planning one or two years ahead can also help to reduce weed problems.

- A. Plant small fruits where row crops have been cultivated for one or two years.
 - 1. Application of 4 bushels of well-rotted manure per 100 square feet in the summer or fall before planting will add organic matter and nutrients to the planting bed.
 - 2. Compost and decomposed leaves will also work well.
- B. All of the small fruits grow well in a pH of 5.5 to 7.5.
 - 1. Test the soil prior to planting to determine the pH and add any amendments needed to improve the pH.

C. When new plants are received they should be **heeled-in**.

1. **Heeling-in** is placing plants in a trench deep enough to permit covering the roots and long enough to spread the plants side-by-side one layer deep to hold them until planting.
2. Plants should be stored at 0 to 5 degrees Celsius
3. Once the plants are heeled-in they should be watered and shaded until the planting area is ready for planting.
4. Avoid letting the roots dry out.

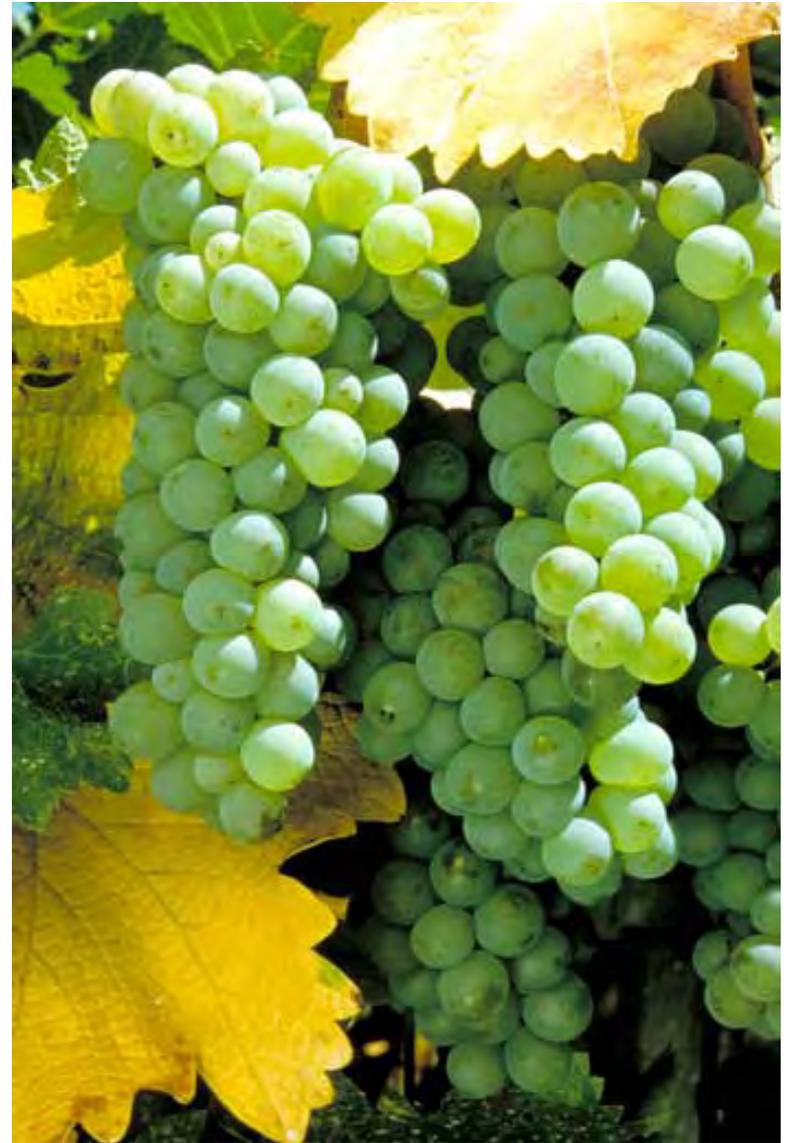
D. Planting and spacing requirements vary with the type of small fruit you plant.

1. Raspberries ripen in early summer and come in colors such as red, yellow, purple, and black
 - a. Because of virus disease, black and purple raspberries should be planted about 600 feet from red varieties.
2. Virus-free one-year-old No. 1 grade plants are suggested for early spring planting.
 - a. Set red raspberries two or three inches deeper than they were in the nursery and set black and purple raspberries about one inch deeper.
 - b. Apply one or two quarts of water around each plant.
 - c. Cut red raspberry plants back to 8 to 12 inches after planting.
 - d. The stems of canes of black and purple raspberries should be cut off at ground level, removed from the planting, and burned.

3. Blackberries are best planted in early spring.
 - a. Spacing will depend on the trellis and training system to be used.
 - b. Most erect blackberry varieties can be grown without supports, spaced four to five feet apart in rows 8 to 10 feet apart.
 - c. Set the plants at the same depth as they were planted in the nursery, and cut the tops back to six inches.



4. Grapes are popular for home gardens.
 - a. grape varieties ripen from early August until mid-October, thereby providing a long season of fresh fruit.
 - b. Set the plants slightly deeper than they grew in the nursery.
 - c. Space the plants eight feet apart and space rows eight feet apart.
 - d. As the plants develop they need supports such as trellises or arbors



- i. **Trellises** are two or three wire supports stretched between wood or metal posts.



- ii. **Arbors** are curved wooden supports that may also provide shade and interest to your garden.





III. Small fruit maintenance includes weed control, mulching, fertilizing, irrigation, frost control, pruning, and pest control.

A. Weed control in small fruits is important and hoeing is sometimes necessary

1. When hoeing small fruits be careful to stay shallow and not disturb the roots- no deeper than 3 to 4 inches.
2. As plants become established, mulch with black plastic and/or organic mulches such as straw, sawdust, or wood chips.

3. Mulching has many benefits

- a. Suppresses weed growth, which reduces competition for soil moisture and nutrients.
- b. Conserves soil moisture, increases rainfall penetration, and reduces erosion.
- c. Requires less nitrogen each year for equivalent yields.
- d. Often maintains or increases vine vigor and productivity without other added nutrient elements, because these are supplied by the decaying mulch.



B. Soil tests taken before planting should guide fertilizer application during seedbed preparation.

1. The ***PI soil test*** is a soil test for available phosphorus.
2. The ***K soil test*** measures potash (K₂O) levels in the soil.
3. Soils showing a high P I test (50 and up) and a high K test (300 and up) need only nitrogen fertilizer.

- 
4. Apply fertilizer in the early spring in either a band or broadcast.
 - a. ***Banded fertilizer*** is placed only on the row while ***broadcast fertilizer*** is placed over the entire area.
 - b. The negative side of broadcast fertilizing is the stimulation of unwanted weed growth between the rows.



C. Water is the key to successful small fruit production so irrigation/watering depends on the amount of natural rainfall.

1. Insufficient moisture results in undersized berries, delayed maturity, less flavor, and dull fruit color.
2. One inch of water per week is ideal whether from natural rainfall or irrigation.
3. Water can also be used to prevent frost and freezing in orchards.

- 
- a. **Frost protection** is the practice of using water sprinklers in the patch when temperatures drop to 34° F at plant level in the field or garden to prevent frost damage.
 - b. The sprinklers are run continuously until the ice that forms on the plants has melted because as water freezes, it releases heat (heat of fusion), which warms objects in contact with the water and ice.

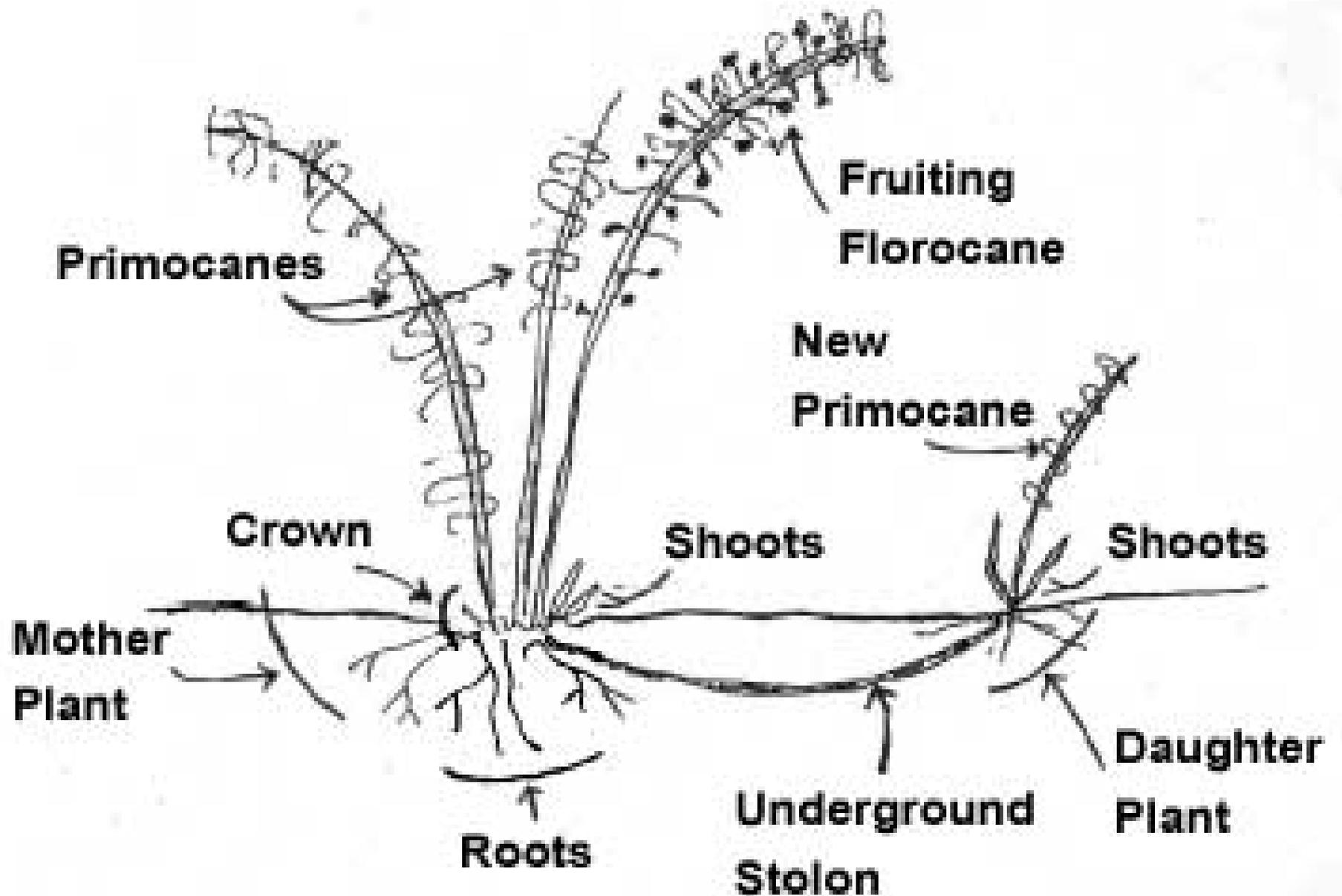
- c. If some free water is maintained on a bud covered with ice, the temperature of the bud will remain approximately 32°F
 - i. At 32°, there will ordinarily be no injury since flower tissue damage generally begins at 28°F.





D. Pruning is the removal of plant parts to regulate crop size and quality and to direct growth.

1. Brambles (raspberries and blackberries) send up new shoots or **canes** each year from the roots and crown.
2. Fruit is only produced on the previous year's wood
 - a. **Primocanes** are the first year vegetative canes that grow vigorously during the summer, initiate flower buds in the fall, and over winter.
 - b. **Floricanes** are the second year canes that form flowers and bear fruit.



3. Roots and crowns are ***perennial*** meaning that they live for an indefinite number of years going dormant for the winter.
4. The canes are ***biennial*** meaning they have a two year life.
 - a. Fruit is borne on leafy shoots from one-year-old wood during the second year, then gradually dry up and die shortly after harvest.
 - b. Prune out these canes at ground level.
5. Pruning brambles also involves training them to the support or trellis system you have selected.
 - a. Leaving brambles unpruned causes the plant to accumulate old unproductive wood and decreases yield.



E. Pest control depends upon many factors.

1. Selection of a suitable planting site
2. The use of disease resistant varieties
3. Purchase of healthy plants
4. The use of good cultural and sanitation practices.

Review/Summary

1. What are some items to consider in site and fruit selection when planning a small fruit garden?
2. What should be done to prepare and plant small fruits?
3. What are some maintenance practices used for small fruit and how are they done?