



## CULTURAL PRACTICES TO CONTROL DISEASES IN HOME FRUIT PLANTINGS

The cultural practices that aid in the control of plant diseases in home fruit plantings are outlined below. Routine fungicide spray programs can be greatly reduced, but probably **not** eliminated, by carefully following these practices. Fruit spray programs designed for home fruit hobbyists can be obtained at your nearest Extension office.

1. Whenever possible, destroy (burn) nearby, worthless or neglected, wild, and virus-infected plant before setting out new plants. Wild or uncared for plants harbor a wide range of diseases and insects. Also destroy nearby junipers which are susceptible to cedar-apple and related rusts, the alternate hosts of rusts that affect apple, crabapples and pear. In ornamental plantings, where only a few rather small junipers are infected, snip off and destroy the rust galls during the fall, winter or early spring two weeks or more **before** apple trees bloom.

Destroying wild, neglected and diseased plants will sharply reduce losses from such diseases as wood rots and decays, canker and dieback diseases, and Armillaria root rot of woody plants; virus diseases of all fruits; cedar-apple rusts, black rot and frog-eye leaf spot of apple; brown rot and bacterial spot of stone fruits; black rot and downy mildew of grape; strawberry leaf and fruit diseases; raspberry and blackberry anthracnose, cane blight, spur blight and rust diseases; and failure of fruit set in blackberries.

2. Choose only well-adapted, recommended species and cultivars for your home fruit production; disease-resistant and/or certified virus- or disease-free plants whenever possible. Buy only vigorous plants from a reputable nursery. Never buy nursery stock that shows evidence of disease.

Planting adapted and recommended species or cultivars helps control wood rots and decays, canker and dieback diseases and Armillaria root rot of woody plants; virus diseases, leaf scorch and chlorosis of all fruits; Verticillium wilt of most fruits; crown or cane gall of all fruits except strawberry; fire blight of pome fruits and brambles; Phytophthora collar rot and cedar-apple rusts of apple; brown rot and bacterial spot of stone fruits; black knot of plums and cherries; black rot, downy mildew, powdery mildew and Botrytis bunch rot of grape; red stele and other root rots, leaf variegation, and gray mold of strawberries; anthracnose, cane blight, spur blight and rust diseases of raspberries and blackberries; and failure of fruit set in blackberries.

3. Plant at the proper time, depth and spacing in large hole in fertile soil with a soil pH between 6 and 7. Avoid planting areas where crown gall or Verticillium wilt has been a problem. Over 300 plants including tomato, pepper, potato, eggplant, melons, okra, mint, bush and bramble fruits, stone fruits, chrysanthemum, roses, and related plants—including weeds—are susceptible to Verticillium wilt. All

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woody plants and bramble fruits are susceptible to crown gall. Select planting sites with good air and soil drainage. Soil drainage can often be improved by tiling or planting in raised beds. Avoid low-lying sites. Locate new plantings of the same or related fruits as far away as possible from older ones.

4. Planting at the right time, depth and spacing in fertile soil will reduce losses from canker and dieback diseases of woody plants; Verticillium wilt, chlorosis and leaf scorch of all fruits; most leaf and fruit diseases caused by fungi and bacteria; Phytophthora crown and/or root rot of apple, peach, raspberries and strawberries; fire blight of pome fruits; bacterial spot and scab of stone fruits; black rot, downy mildew and Botrytis bunch rot of grape; leaf and fruit diseases of strawberries; anthracnose, cane blight, spur blight and rust diseases of raspberries and blackberries; and mummy berry disease of blueberry.
5. Follow recommended fertilization practices based on a soil test. Too much nitrogen fertilizer commonly leads to excessive vegetative growth and increased susceptibility to winter injury and diseases.

Proper fertilization aids in the control of leaf scorch of all plants; Verticillium wilt of most fruits; *Botryosphaeria*, *Cytospora*, *Nectria* and other canker diseases of fruit trees; fire blight, scab, black rot, frog-eye leaf spot, powdery mildew, sooty blotch, flyspeck and other leaf and fruit diseases of apple and pear; brown rot and leaf curl of stone fruits; black knot of plums and cherries; plum pockets; black rot, downy mildew and Botrytis bunch rot of grape; leaf and fruit diseases of strawberries; anthracnose, cane blight, spur blight, and rust diseases of raspberries and blackberries; canker and mummy berry diseases of blueberry.

6. Prune annually. Remove all branch cankers and blighted twigs and burn all prunings. Avoid leaving branch stubs. Practice open-center pruning of fruit trees to increase air circulation and light. Remove and destroy bramble canes that have finished fruiting.

Proper pruning will sharply reduce losses from wood rots and decays, canker and dieback diseases, and Armillaria root rot of woody plants; leaf scorch of all fruits; Verticillium wilt of most fruits; fire blight, black rot and powdery mildew of apple and pear; brown rot and leaf curl of stone fruits; black knot of plums and cherries; plum pockets; black rot and downy mildew of grape; anthracnose, cane blight and spur blight of raspberries and blackberries; orange rust and failure of fruit set in blackberries; and mummy berry disease of blueberry.

7. Provide tree support for young trees by a stake or trellis to prevent “wallowing” in the wind. Such rocking results in open areas around the base of the trunk which lead to increased susceptibility to both cold injury and collar rot.

Support for young trees helps control Phytophthora collar rot of apple and peach plus various canker, wood rot and root diseases.

8. Control insect borers, chewing, sucking and root-feeding insects (e.g., aphids, leafhoppers, plant bugs, pear psylla, scales, grubs, wireworms) which commonly cause wounds allowing entry of plant pathogens, transmit disease-causing agents, or weaken plants making them more susceptible to diseases.

Stringent control of insects is important in preventing virus diseases, wood rots and decays, canker and dieback diseases, and leaf scorch of all plants; Verticillium wilt of most fruits; Armillaria and

other root rots of woody plants; various root rots of bramble fruits and strawberries; crown gall of all fruits except strawberries; fire blight and sooty molds of apple and pear.

9. Practice clean cultivation prior to budbreak by burying and destroying all mummified fruit lying on the ground. Keep down weeds during the growing season by using organic mulches and/or cultivation.

Clean cultivation in early spring will reduce losses from black rot and other fruit diseases of apple and pear; crown rot, ripe rot and other fruit rots of stone fruits; black rot, downy mildew and Botrytis bunch rot of grape; leaf and fruit diseases of strawberries; anthracnose, cane blight, spur blight and fruit rots of raspberries and blackberries; mummy berry disease and gray mold of blueberry; and Sclerotinia disease of strawberries and raspberries.

10. Avoid injuring tree trunks, bramble canes and strawberry runners during mowing and cultivation. Keep the base of plants as dry as possible and free of debris that might attract rodents. Avoid chemical injuries. Apply herbicides, other pesticides, deicing salt, fertilizers, and other chemicals strictly according to label directions.

Avoiding injuries throughout the growing season helps prevent wood rots and decays, canker and dieback diseases of tree fruits; crown gall of all fruits except strawberries; and Verticillium wilt, root and crown rots, and leaf scorch of all plants.

11. Reduce drought stress by periodic irrigations. Moisten soil 10 to 12 inches deep with each irrigation. **Avoid** frequent light sprinklings. Keep water off foliage as this encourages infection by numerous fungi and bacteria.

Avoiding drought stress will greatly aid in controlling wood rots and decays, canker and dieback diseases, and Armillaria root rot of woody plants; Verticillium wilt, powdery mildews, and leaf scorch of all plants; scab of apple and pear; leaf curl of stone fruits; and plum pockets.

12. Harvest fruit carefully to avoid wounding, such as stem punctures, skin abrasions and bruising of overripe fruit. Careful handling of fruit at all times and immediate refrigeration (whenever possible) are essential for control of all soft and ripe fruit rots.
13. Where feasible, collect and destroy the fallen leaves and rotted fruit on the ground and in trees. Remove old infected leaves from strawberry runner plants before setting.

Good sanitation helps prevent scab, black rot, frog-eye leaf spot and other fungal leaf diseases of apple and pear; brown rot and other fruit rots of stone fruits; leaf spots of cherries; strawberry leaf and fruit diseases; and mummy berry disease of blueberry.

14. Avoid winter injury by carrying out practices that favor early autumn maturity to avoid growth continuing into mid or late fall. Follow other suggested cultural practices to avoid winter injury such as special tree-wrapping paper for young fruit trees and mulching strawberries and susceptible bramble fruits.

Prevention of winter injury is an excellent way to avoid wood rot and decays, canker and dieback diseases of woody plants; crown gall of all fruits except strawberry; Phytophthora collar rot of apple and peach; frost cracks and winter sunscald of fruit trees; and strawberry crown and root rots.