



DELAYED-DORMANT

PREPINK

**disease and insect  
spray schedule  
for home orchards**

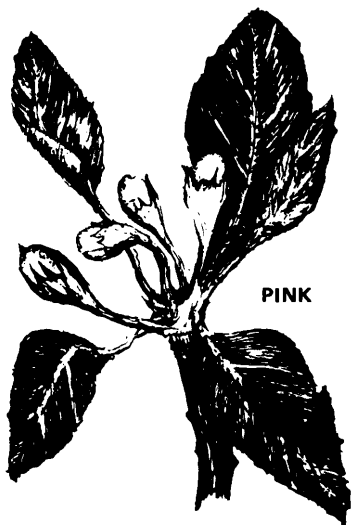
EM 3439 (Rev.), November 1979

**APPLES**

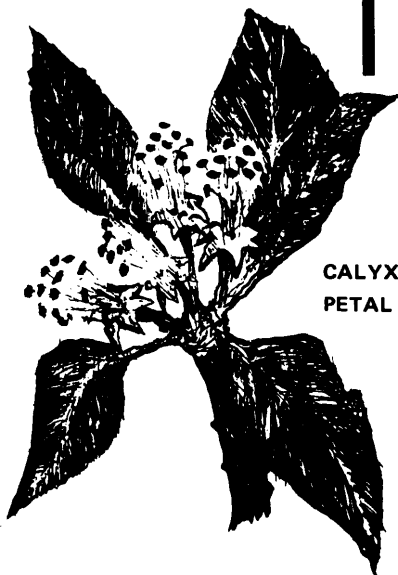
**PEARS**

**CRAB APPLES**

**Western Washington**



PINK



CALYX OR  
PETAL FALL

COOPERATIVE EXTENSION SERVICE • COLLEGE OF AGRICULTURE • WASHINGTON STATE UNIVERSITY • PULLMAN

In cooperation with the United States Department of Agriculture

Issued in furtherance of the Acts of May 8 and June 30, 1914, by the Washington State University

Cooperative Extension Service, J. O. Young, Director

## PRECAUTIONS IN USING PESTICIDES

This publication lists and describes the control measures suggested for control of the more common injurious pests normally encountered. The pesticide recommendations are based on research by scientists of Washington State University, the USDA, and by other agencies. Those suggested are considered safe to use (when directions on label are followed carefully) and known to be effective.

In many cases, additional information on description of the pests, their damage, their life cycles, and their control may be desired. If your problem goes beyond the scope of this discussion, you can get additional help from your county Extension agent or from the Department of Entomology or Plant Pathology, Washington State University, Pullman. Remember, not all insects are pests. Many are either beneficial or harmless. Be sure you have a real problem before you employ pesticides.

Pesticides can be poisonous to men and animals. Use them only when needed and handle them with care. Follow the directions and heed all precautions on the label.

Keep pesticides in closed, well-labeled containers in a dry place. Store them where they will not contaminate food or feed, and preferably in locked storage where children and animals cannot reach them.

Avoid contact with pesticides. If any is spilled on skin or clothing, wash it off the skin thoroughly with soap and water and change clothing immediately.

Avoid inhalation of pesticide dusts or mists.

When handling pesticides, wear clean, dry clothing.

Wash your hands and face before eating or smoking and immediately after completing pesticide application.

To protect fish and wildlife, do not contaminate lakes, streams, or ponds with pesticides. Do not clean spraying equipment or dump excess spray material near such water.

Dispose of *empty* pesticide containers at a sanitary landfill dump, or bury them at least 18 inches deep in a level, isolated place where they will not contaminate water supplies. If you have trash collection service, wrap small *empty* containers in heavy layers of newspapers and place them in the trash can.

*Assistance from Washington State University is available to all persons, without regard to race, color, or national origin. Trade names have been used to simplify the presentation of information. No endorsement of products is intended.*

**WHEN TO APPLY\***  
(See front cover for picture guide)

Before you buy and use any pesticide, be sure the plant and the pest are on the label, and then follow all label directions and precautions.

	Dormant	Prepink and Pink	Petal Fall	2 Weeks After Bloom, and as Needed During Season	After Harvest
INSECTS	Lime sulfur plus superior spray oil for: blister mites scale pear psylla moss and lichens	Malathion for: tent caterpillars other caterpillars aphids (apple)	Diazinon for: aphids psylla spider mites <i>OR</i> Methoxychlor and malathion mixture for: aphids psylla spider mites	Diazinon for: aphids codling moth*** psylla spider mites <i>OR</i> Methoxychlor and malathion mixture for: aphids codling moth psylla spider mites	Diazinon plus Superior Spray oil for: pear blister mite (for heavy infestations)
DISEASES	Fixed copper for: apple anthracnose moss and lichens	Benomyl** for: scab powdery mildew <i>OR</i> Captan (not on pear) for: scab <i>OR</i> Lime sulfur for: scab powdery mildew	Benomyl** for: scab powdery mildew <i>OR</i> Captan (not on pear) for: scab <i>OR</i> Lime sulfur for: scab powdery mildew	Benomyl** for: scab powdery mildew <i>OR</i> Captan (not on pear) for: scab <i>OR</i> Lime sulfur for: scab powdery mildew	Fixed copper for: apple anthracnose
BOTH INSECTS AND DISEASES	Do not mix lime sulfur and fixed copper in the same tank.	Do not mix lime sulfur with any of the above. Malathion can be mixed with benomyl, captan or both.	Do not mix lime sulfur with any of the above. Diazinon can be mixed with benomyl, captan or both. Methoxychlor and malathion can be mixed with benomyl, captan or both.	Do not mix lime sulfur with any of the above. Diazinon can be mixed with benomyl, captan or both. Methoxychlor and malathion can be mixed with benomyl, captan or both.	Do not mix diazinon and fixed copper.

\*In some situations, adequate (not perfect) insect and disease control can be achieved by using only a dormant spray (lime sulfur) and a petal-fall spray.

\*\*Benomyl should not be sprayed repeatedly. Either alternate with another fungicide, or mix another fungicide, such as captan or Cyprex with benomyl.

\*\*\*For effective full season control of codling moth, sprays must be timed properly as follows: Apply first spray 10 days after full petal fall. Apply at least 4 sprays of diazinon or methoxychlor at 7-10 day intervals. Imidan may also be used. It should be applied 10 days after petal fall and repeated 2 more times about 18-21 days apart.

*Note: Do not apply diazinon when trees are in blossom as it is highly toxic to bees. Apply malathion sprays to blossoms in late evening only to avoid bee poisoning. Apply methoxychlor to blossoms in early morning or evening to avoid bee poisoning.*

If control is not satisfactory using materials listed in this guide, these additional materials can be used for the specific problems listed.

**Other useful insecticides: follow label directions and precautions!**

- Nicotine sulfate (Black Leaf 40) plus Superior oil for pear psylla.
- \*Perthane for pear psylla.
- Thiodan (vegetable and fruit spray) for aphid on apple and psylla on pear.
- Kelthane (probably only obtainable as one ingredient in a combination product such as "Fruit and Berry Insect Spray") for spider mites.
- \*Omite for spider mites.
- \*Imidan for codling moth (best material for codling moth control; however only available in one-pound bags).

**Other useful fungicides: follow label directions and precautions!**

- \*Cyprex for scab (good fungicide to alternate with benomyl).
- \*Karathane for powdery mildew.
- Wettable sulfur for powdery mildew.

\*May not be available in garden stores, but may be obtained from commercial outlets.

Prepared by Ralph S. Byther, Extension plant pathologist, and Arthur L. Antonelli, Extension entomologist, Western Washington Research and Extension Center, Puyallup; Washington State University.