

970 Insecticide Recommendations

EXTENSION DIVISION
VIRGINIA POLYTECHNIC INSTITUTE

APPLE INSECT CONTROL (COMMERCIAL)

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Commercial production of apples requires the use of many pesticides in a carefully coordinated program. Considerations of effectiveness, timing, compatibility, safety to fruit and foliage, and many other factors enter into development of integrated fruit spray programs. Such information and suggested programs are included in the "1970 Virginia Spray Bulletin for Tree Fruits," Cooperative Extension Publication 219.

To control pests in home fruit plantings, it is strongly recommended that instructions in Extension Publication 46, "Spraying Fruit--A Spray Program for Home Gardeners," be followed.

ROSY APPLE APHID AND GREEN APPLE APHID

VIRGINIA TECH RECOMMENDS:

*demeton (Systox)

*phosphamidon (Dimecron)

Others: malathion, *parathion, phosalone (Zolone), dimethoate (Cygon)

*carbophenothion (Trithion), superior oil--Use according to label directions.

***DEMETON:** Use 8 oz. of 26.2% demeton (2 lbs. demeton per gal.) per 100 gals. of spray. Apply from 300 to 500 gals. per acre, depending upon tree size, when blossoms are in the pink stage of development. This spray should be applied where a superior oil spray was either omitted or did not provide adequate control.

SAFETY PRECAUTIONS: Demeton is extremely poisonous and should be applied only by persons who know how to use chemicals safely. See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: 0.75 ppm on fruit.

WAITING PERIOD: 21 days before harvest (do not make more than 3 applications per season).

* **EXTREMELY POISONOUS.** If you become ill while or after using, call a physician immediately.

*PHOSPHAMIDON: Use 2.5 oz. of the 8 lb. per gal. formulation of phosphamidon per 100 gals. of spray. Apply 300 to 500 gals. of spray per acre, depending upon tree size, when apple buds are in the pink stage of development for rosy aphids.

Phosphamidon at the above rate is the preferred treatment for green apple aphids when applied in the cover sprays.

SAFETY PRECAUTIONS: Phosphamidon is extremely poisonous and should be applied only by persons who know how to use chemicals safely. See "Keys to Proper Use of Pesticides.

RESIDUE TOLERANCE: 1 ppm.

WAITING PERIOD: 30 days before harvest.

EUROPEAN RED, SCHOENELI, TWO SPOT MITES

VIRGINIA TECH RECOMMENDS:

superior oil
dicofol (Kelthane) + tetradifon (Tedion)
chloropropylate (Acaralate)
Morestan
binapacryl (Morocide)

Others: dinocap (Karathane), Omite--Use according to label directions.

SUPERIOR OIL: Use 2 gals. of 70-second Saybolt method superior oil per 100 gals. of spray. Apply 300 to 500 gals. per acre, depending upon tree size, in the delayed dormant stage of bud development. To be most effective, this spray should be applied at the time leaves start to separate from the buds. It is important that all parts of the tree be sprayed thoroughly.

CAUTIONS: Oil sprays should not be applied when temperatures exceed 85 degrees F. or freezing night temperatures are anticipated. Do not apply captan before or in combination with an oil spray. Allow at least 4 days between an oil spray and a captan application. Avoid delaying oil sprays since the further advanced the buds are, the greater the potential for injury.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: None established.

WAITING PERIOD: None established.

DICOFOL + TETRADIFON: Use 1.5 lb. dicofol AP (18.5% wettable powder) plus 1 pt. tetradifon (1 lb. per gallon formulation) per 100 gals. of spray. Apply 300 to 500 gals. of spray per acre, depending upon tree size. It is important that trees be sprayed thoroughly for effective control.

CAUTIONS: Do not feed pomice from treated apples to livestock.

*EXTREMELY POISONOUS. If you become ill while or after using, call a physician immediately.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: Dicofol 5 ppm, tetradifon 5 ppm on fruit.

WAITING PERIOD: The combination can be applied to within 7 days before harvest, which is the time interval for dicofol. However, not more than 4 applications of tetradifon may be applied on apples after petal fall.

CHLOROPROPYLATE: Use 1-1/2 to 2 pints chloropropylate (2E) per 100 gals. of spray. Spray thoroughly for best results.

CAUTIONS: Chloropropylate is incompatible with Dyrene WP, dichlone (Phygon), sulfur, and tribasic sulfate. Do not graze treated areas.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: 5 ppm.

WAITING PERIOD: 14 days before harvest.

MORESTAN: Use 0.5 lb. 25% Morestan wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre as needed to maintain mite control. Spray trees thoroughly to insure maximum coverage.

CAUTIONS: Morestan should be used on processing apples only after bloom, because of a tendency to result in excessive fruit spotting under some conditions. Do not apply more than 3 times per season. Do not graze treated areas.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: None established.

WAITING PERIOD: 35 days before harvest.

BINAPACRYL: Use 0.5 lb. 50% binapacryl wettable powder per 100 gals. of spray. Apply 300 to 500 gals. of spray per acre as needed depending on tree size.

CAUTIONS: Do not apply more than 4 times during fruiting period.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: None established.

WAITING PERIOD: 60 days before harvest.

* EXTREMELY POISONOUS. If you become ill while or after using, call a physician immediately.

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RED BANDED AND FRUIT TREE LEAF ROLLERS

VIRGINIA TECH RECOMMENDS:

*azinphosmethyl (Guthion)

Others: *dioxathion (Delnav), Gardona, Imidan, phosalone (Zolone),
*mevinphos (Phosdrin), malathion, *parathion, carbaryl (Sevin)--
Use according to label directions.

*AZINPHOSMETHYL: Use 1.2 lb. 25% azinphosmethyl per 100 gals. of spray. Apply 300 to 500 gals. per acre in 2 sprays during the petal fall and first cover periods, and 2 additional sprays during the fourth and fifth cover spray periods. Full coverage is essential to effective control.

SAFETY PRECAUTIONS: Azinphosmethyl is extremely poisonous and should be applied only by persons who know how to use chemicals safely.

RESIDUE TOLERANCE: 2 ppm on fruit.

WAITING PERIOD: 15 days before harvest.

CODLING MOTH

VIRGINIA TECH RECOMMENDS:

*azinphosmethyl (Guthion)
carbaryl (Sevin)

Others: *dioxathion (Delnav), Gardona, Imidan, phosalone (Zolone),
*EPN, *parathion, malathion, *carbophenothion (Trithion),
ethion--Use according to label directions.

*AZINPHOSMETHYL: Use 1.2 lb. 25% azinphosmethyl wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre, depending upon tree size, at approximately 2-week intervals from petal fall through August.

SAFETY PRECAUTIONS: Azinphosmethyl is extremely poisonous and should be applied only by persons who know how to use chemicals safety.

RESIDUE TOLERANCE: 2 ppm on fruit.

WAITING PERIOD: 15 days before harvest.

CARBARYL (Sevin): Use 1.5 lb. 50% carbaryl wettable powder per 100 gals. of spray. Apply 300 to 500 gals. at about two-week intervals starting about one month after bloom. Carbaryl SHOULD NOT be used on apples during bloom period.

CAUTIONS: Carbaryl should not be used before third cover on apples because of a tendency of this material to reduce fruit set.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

* EXTREMELY POISONOUS. If you become ill while or after using, call a physician immediately.

RESIDUE TOLERANCE: 10 ppm on fruit.

WAITING PERIOD: 1 day before harvest.

PLUM CURCULIO AND APPLE CURCULIO

VIRGINIA TECH RECOMMENDS:

*dieldrin

Others: *azinphosmethyl (Guthion), Imidan, *parathion, *EPN, phosalone (Zolone), malathion, *lead arsenate--Use according to label directions.

*DIELDRIN: Use 0.3 lb. 50% dieldrin wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre at petal fall.

SAFETY PRECAUTIONS: Dieldrin is highly toxic to bees and should not be used in the orchard until after bees have been removed and petals have fallen. Dieldrin is extremely poisonous and should be applied only by persons who know how to use chemicals safely. Do not permit dairy or meat animals to graze on cover crops.

RESIDUE TOLERANCE: 0.1 ppm on fruit.

WAITING PERIOD: 90 days before harvest.

JAPANESE BEETLE

VIRGINIA TECH RECOMMENDS:

carbaryl (Sevin)

Others: *parathion, malathion, *azinphosmethyl (Guthion)--Use according to label directions.

CARBARYL: Use 2.0 lbs. 50% carbaryl wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre, depending upon size of the trees. Apply as needed from late June until early August when Japanese beetles are in the orchard.

CAUTIONS: Carbaryl should not be applied to apples before third cover because of a tendency to reduce fruit set.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: 10 ppm on fruit.

WAITING PERIOD: 1 day before harvest.

YELLOW NECKED CATERPILLAR

VIRGINIA TECH RECOMMENDS:

*parathion

Others: *TEPP, phosalone (Zolone), Imidan, malathion--Use according to ----- label directions.

*EXTREMELY POISONOUS. If you become ill while or after using, call a physician immediately.

*PARATHION: Use 1.0 lb. of 15% parathion wettable powder, or equivalent in liquid formulation, per 100 gals. of full coverage spray. Apply 300 to 500 gals. of spray per acre as needed. Yellow-necked caterpillars frequently become numerous in orchards during late summer.

CAUTIONS: Do not apply to susceptible varieties.

SAFETY PRECAUTIONS: Parathion is extremely poisonous and should be applied only by persons who know how to use it safely.

WAITING PERIOD: 14 days before harvest.

RESIDUE TOLERANCE: 1 ppm on fruit.

LEAF MINER

VIRGINIA TECH RECOMMENDS:

*parathion
malathion

*PARATHION: Use 1.0 lb. of 15% parathion wettable powder, or equivalent in other formulations. Apply 300 to 500 gals. of spray per acre, depending upon tree size, during June and July as needed.

CAUTIONS: Parathion may injure the finish of some varieties when used early in the season.

SAFETY PRECAUTIONS: Parathion is extremely poisonous and should be applied only by persons who know how to use chemicals safely.

RESIDUE TOLERANCE: 1 ppm on fruit.

WAITING PERIOD: 14 days before harvest.

MALATHION: Use 2.0 lbs. of 25% malathion wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre, depending upon tree size, during June and July as needed.

CAUTIONS: Malathion may injure foliage on some varieties.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: 8 ppm on fruit.

WAITING PERIOD: 3 days before harvest.

LEAF HOPPERS

VIRGINIA TECH RECOMMENDS:

*parathion
carbaryl (Sevin)

***EXTREMELY POISONOUS.** If you become ill while or after using, call a physician immediately.

*PARATHION: Use 1.6 lbs. parathion 15% wettable powder per 100 gals. of spray. Apply as required to maintain leaf hopper control from mid-June through August. Leaf hoppers are most frequently a problem on non-bearing trees, therefore, a normal spray program will usually result in control in a bearing orchard. Spray the surrounding cover-crop area in addition to the young, non-bearing trees.

CAUTIONS: Parathion may be injurious to the finish of yellow varieties.

SAFETY PRECAUTIONS: Parathion is extremely poisonous and should be applied only by persons who know how to use chemicals safely.

RESIDUE TOLERANCE: Parathion--1 ppm on fruit.

WAITING PERIOD: Parathion--14 days before harvest.

CARBARYL: Use 2 lbs. 50% carbaryl wettable powder per 100 gals. of spray. Apply as required to maintain leaf hopper control from mid-June through August.

RESIDUE TOLERANCE: 10 ppm on fruit.

WAITING PERIOD: 1 day before harvest.

CICADA

VIRGINIA TECH RECOMMENDS:

carbaryl (Sevin)
carbaryl + *azinphosmethyl (Guthion)

CARBARYL: Use 2.0 lbs. of 50% carbaryl wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre, depending upon tree size. Delay spraying until first eggs can be found in twigs but before extensive egg laying takes place, which will usually start in late May or early June. Egg laying in the twigs usually occurs 10 days to 2 weeks after emergence of adults. Orchards bordered by heavily infested woods may be reinfested from the woods. Hence, treating a border around the orchard is helpful in reducing migration.

CAUTIONS: Carbaryl should not be used on apples prior to third cover because of its tendency to reduce fruit set.

SAFETY PRECAUTIONS: See "Keys to Proper Use of Pesticides."

RESIDUE TOLERANCE: 10 ppm on fruit.

WAITING PERIOD: 1 day before harvest.

CARBARYL + AZINPHOSMETHYL: Use 1.0 lb. of 50% carbaryl wettable powder plus 0.5 lb. of 25% azinphosmethyl wettable powder per 100 gals. of spray. Apply 300 to 500 gals. per acre, depending upon tree size, at the same timing recommended for carbaryl used alone.

* EXTREMELY POISONOUS. If you become ill while or after using, call a physician immediately.

CAUTIONS: This combination should not be applied before 30 days after bloom because of the tendency of carbaryl to reduce fruit set in early post-bloom sprays.

SAFETY PRECAUTIONS: Azinphosmethyl is extremely poisonous and should be applied only by persons who know how to use chemicals safely.

RESIDUE TOLERANCE: Azinphosmethyl--2 ppm, carbaryl--10 ppm on fruit.

WAITING PERIOD: 15 days before harvest for mixture.

Trade and brand names are used only for the purpose of information and the Virginia Cooperative Extension Service does not guarantee nor warrant the standard of the product, nor does it imply approval of the product to the exclusion of others which may also be suitable.

Keys to Proper Use of Pesticides

1. Read the label on each pesticide container before each use. Follow instructions to the letter; heed all cautions and warnings, and note precautions about residues.
2. Keep pesticides in the containers in which you bought them. Put them where children or animals cannot get to them, preferably under lock and away from food, feed, seed, or other material that may become harmful if contaminated.
3. Dispose of empty containers in the manner specified on the label. If disposal instructions are not printed on the label, burn the containers where smoke will not be a hazard, or bury them at least 18" deep in a place where water supplies will not be contaminated.

SEE YOUR DOCTOR IF SYMPTOMS OF ILLNESS OCCUR DURING OR AFTER USE OF PESTICIDES