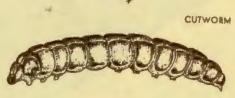
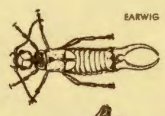
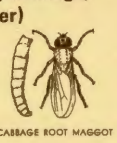
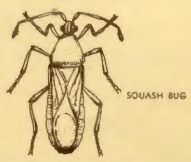
PEST CONTROL IN HOME VEGETABLE GARDENS

EM 4348

PEST CONTROL FOR HOME VEGETABLE GARDENS

Vegetable	Common pests, description, damage	Some registered pesticides*	Last use of pesticide before harvest	How to apply, other remarks**
General Pests  APHID	*Aphids.* Small green, black, pink, or gray plant lice suck plant juices, weaken plants. Sticky secretions lead to sooty mold.	diazinon (Spectracide) malathion endosulfan (Thiodan)	Depends on vegetable; see product label.	Apply to both tops and undersides of leaves.
 CUTWORM	*Cutworms.* Large caterpillars. Feed on all parts of plants.	carbaryl (Sevin)	Depends on vegetable; see product label.	Apply when cutworms are small. Cutworms are nearly impossible to control when larger.
 EARWIG	*Earwigs.* Dark brown with pincers at rear end. Feed on many plant parts.	carbaryl (Sevin) chlordane***	Depends on vegetable; see product label.	Apply to soil surface as dust when earwigs are first seen.
 GRASSHOPPER	*Grasshoppers.* Large jumping insects. Feed on leaves and blossoms.	malathion carbaryl (Sevin)	Depends on vegetable; see product label.	Not normally an important pest.
	Mites. Tiny, spider-like mites on undersides of leaves. Suck plant juices, cause leaves to yellow and die. Mites can seldom be seen with naked eye.	dicofol (Kelthane)—mites may be resistant to this pesticide in some parts of the state	Depends on vegetable; see product label.	Good coverage needed, particularly on undersides of leaves.
	Slugs. Small to large, legless creatures. Feed on many plant parts, causing ragged holes. Leave slime trails.	metaldehyde	Depends on vegetable; see product label.	Apply as bait to soil. Do not apply directly to plants. Stale beer in cans sunk to ground level can control slugs. The beer acts as a bait to which slugs are attracted and drown.
	Symphylan. Small, white, centipede-like animals in soil. Consume roots and can ultimately kill plants—particularly young plants.	diazinon (Spectracide)	Depends on vegetable; see product label.	Preplant application only. Not normally important pest.
 WIREWORM	*Wireworms.* Brown, jointed larvae of click beetles. Chew holes in edible roots.	diazinon (Spectracide)	Depends on vegetable; see product label.	Use as a preplant application only.
Asparagus	*Asparagus beetle.* Blue-black, yellow-mottled beetle. Adults feed on spears and damage them by egg laying. Adults and gray larvae eat fronds.	carbaryl (Sevin) malathion rotenone	1 day 1 day 1 day	Apply to all above-ground parts of plant. Repeat in about a week if needed.
Beans	*Spider mite.* Small red to green mites on undersides of plant leaves; often accompanied by webbing. Suck plant juices, cause leaves to yellow and die. Too small to see with naked eye.	dicofol (Kelthane) diazinon (Spectracide)	7 days 7 days	Good coverage needed, particularly on undersides of leaves. Repeat applications may be necessary.
Beets and Chard	*Beet leafminer.* White maggots feed under surface of leaf, kill large areas of tissue.	No pesticide registered.		Remove and destroy infested leaves.
 FLEA BEETLE	*Flea beetle.* Small brown to dark blue, jumping beetles cause "shot hole" leaves. Can be serious on seedlings.	carbaryl (Sevin) methoxychlor (beets only)	3 days (14 days if tops used as food) 14 days	Apply to leaves when beetles first appear. Repeat in about a week if necessary.
Carrots	*Carrot rust fly.* Small, legless, whitish maggots. Burrow into crown and roots.	diazinon (Spectracide)	10 days	Apply to soil at planting time according to label instructions.
Cole Crops (broccoli, cabbage, cauliflower)  CABBAGE ROOT MAGGOT	*Cabbage maggot.* White maggots feed on roots, underground stems; weaken, topple, kill plants. Adult is small gray fly. Lays eggs at plant bases.	diazinon (Spectracide)	5 days (broccoli and cauliflower) 7 days (cabbage)	Apply to soil according to label instructions.
	Cabbage worm. Soft, velvety green caterpillar with faint stripes. Adults are white butterfly with black spots.	carbaryl (Sevin) endosulfan (Thiodan) rotenone	3 days 7 days (broccoli and cabbage); 14 days (cauliflower) 1 day	Apply to above-ground plant parts when worms first appear. Repeat applications maybe necessary.
 CABBAGE LOOPER	*Cabbage looper.* Pale green larvae with white lines on back and sides. Move in looping manner. Moths are gray-brown with silvery spot.	As above		
 DIAMONDBACK MOTH	*Diamondback moth.* Small, light yellow-green larvae with black hairs. Eat holes in leaves. Adults are gray or brown with white wingmarks which form a diamond when wings are folded.	As above		
Corn	*Corn earworm.* Large green, brownish, or reddish worms. Feed on silk and kernels of the ear.	carbaryl (Sevin) malathion	0 days 5 days	Apply to silks when silk first appears. Repeat 3-4 times at 3-day intervals.
Lettuce	*Cabbage looper.* Pale green larvae with white lines on back and sides. Move in looping manner. Moths are gray-brown with silvery spot.	endosulfan (Thiodan)—use on head lettuce only rotenone	14 days 1 day	Apply to leaves when worms first appear. Repeat if necessary.
Onions	*Onion maggot.* Larvae are legless, blunt white maggots which kill seedlings and damage bulbs of older plants. Adults are flies, pale to dark gray in color, less than 1/4 inch in size.	diazinon (Spectracide)	10 days	Apply to soil according to label instructions at planting time.
 ONION THRIPS	*Onion thrips.* Adults are small, pale yellow to light brown, with feathery wings. Young are pale yellowish green and without wings. Feed on leaves, causing silvery areas and wilting.	diazinon (Spectracide) malathion	10 days 3 days	Apply to leaves when thrips first appear.
Peas	*Pea leaf weevil.* Grayish brown weevil about 1/6 inch long. Feeds on foliage, severely scalloping edges of leaves. Greatest injury occurs during seedling stage.	methoxychlor	7 days	Apply at first signs of notching on the leaves. No need to treat after 6-leaf stage.

 PEA WEEVIL	*Pea weevil.* Black to brownish weevil with white zig-zag bands across back. Eggs laid on pods. Larvae burrow into pods and feed on developing peas. Not a problem in western Washington.	malathion methoxychlor rotenone	3 days 7 days 1 day	Apply soon after first blooms appear and before pods start to form. Additional applications may be needed to control migrating weevils.
	Pea moth. Small whitish caterpillar that feeds within seeds.	No pesticide registered.		Rarely a problem.
Peppers and Eggplant	*Flea beetle.* Small, oval, shining bronze or dark blue, jumping beetle. Chews small circular holes in leaves.	endosulfan (Thiodan)—use on peppers only methoxychlor	4 days 7 days	Apply to leaves when beetles or damage first appear.
Potatoes	*Potato flea beetle.* Small oval, shining bronze, jumping beetle. Chews small irregular holes in leaves. Larvae of some species damage tubers.	rotenone carbaryl (Sevin) endosulfan (Thiodan)	1 day 0 day 0 day	Apply to leaves when beetles or damage first appear.
COLORADO POTATO BEETLE	*Colorado potato beetle.* Yellow and black striped beetle. Larvae are reddish orange, with two rows of black spots on each side. Feed on leaves.	As above		
	Spider mite. Tiny, spider-like mites feed on undersides of foliage. Cause yellowing and browning of leaves. Mites cannot be seen without a hand lens.	malathion— may not be wholly effective	0 day	Thorough coverage, especially to undersides of leaves is essential.
Radish	*Cabbage maggot.* White legless larvae feed in root.	diazinon (Spectracide)	10 days	Apply to soil according to label at planting time.
	Flea beetle. Small, brown to dark blue, jumping beetles cause "shot holes" in leaves. Can be serious on seedlings.	carbaryl (Sevin)	3 days	Apply to leaves at first sign of damage.
Spinach	*Cabbage looper.* Slender dark olive green worms with white stripes. Move in looping manner.	carbaryl (Sevin)	1 day	Apply when worms first appear.
Squash, including Melons and Cucumber	*Striped cucumber beetle.* Small, slender, greenish-yellow beetles with 3 black stripes on back. Larvae feed on roots and underground stem. Adults chew on above-ground portions of plants.	diazinon (Spectracide)—do not use on squash malathion carbaryl (Sevin) endosulfan (Thiodan)	7 days (cucumbers); 3 days (melons) 1 day 0 day 0 day	Apply to leaves at first sign of damage.
 CUCUMBER BEETLE	*Western spotted cucumber beetle.* Yellowish-green, black-spotted beetle, common west of Cascades. Damage usually limited to young plants.	As above		
 SQUASH BUG	*Squash bug.* Large, grayish sucking insects. Adults and nymphs kill leaves and vines. Attacks squash only.	carbaryl (Sevin) endosulfan (Thiodan)	0 day 0 day	Apply to vines and foliage when bugs first noticed.
Tomato	*Colorado potato beetle.* Yellow and black striped beetle. Larvae are reddish orange with two rows of black spots on each side. Feed on leaves.	carbaryl (Sevin)—not registered for control of Colorado potato beetle on tomatoes or for control of hornworm endosulfan (Thiodan)—not for fruitworm	0 day 1 day	Apply to leaves as needed.
	Tomato fruitworm. Large, green, brownish, or reddish worms feed in fruit.	As above		
	Flea beetle. Small, oval, shining bronze or dark blue, jumping beetle. Chews small irregular holes in leaves.	As above		
 TOMATO HORNWORM	*Hornworm.* Caterpillar 4 to 5 inches long. Pale green with a short curved red horn on rear end.	As above		
Turnips and Rutabagas	*Cabbage maggot.* White legless larvae feed in root.	No pesticide registered for home garden use.		

*These pesticides are registered with the Environmental Protection Agency for control of the pests listed. However, they may not be registered for all the plants on which the pest occurs. Also, there may be several different brands of pesticide on the market, one of which may not be registered for the specific pest, the specific host, or both. BE CERTAIN THAT THE PEST AND THE CROP ARE LISTED ON THE LABEL before you select a material to use and follow all use directions on the label.

**SEE BEE WARNING SECTION BEFORE APPLYING INSECTICIDES. Carbaryl (Sevin), diazinon (Spectracide), and malathion are particularly hazardous to bees.

***EPA has announced suspension of products containing chlordane for most agricultural and home uses. However, stocks produced prior to July 29, 1975, can be sold and used in accordance with label directions. It is EPA's opinion that this is the safest and most environmentally acceptable means of disposing of this chemical.

PEST CONTROL FOR HOME VEGETABLE GARDENS

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These control measures for common Washington pests are based on research by scientists of Washington State University, the U.S. Department of Agriculture, and other agencies. There is no certainty that they will provide satisfactory pest control without causing plant injury. However, research shows that safe, effective control can be expected when directions are carefully followed and precautions are carefully observed.

Environmental Protection

Use pesticides in moderation to protect the environment. Follow these guidelines to avoid overuse and unnecessary contamination:

1. Do not use pesticides unless there is a definite need for insect control. Avoid their use when beneficial insects are present and are doing a fairly good job of reducing pest species.
2. Be sure you have a problem that pesticides can correct. Apply them as specific treatments, not as general remedies.
3. Use them only on crops that are being attacked by the insect or disease. Do not apply them to other crops.
4. Select pesticides that are the least hazardous to bees and other beneficial insects and to humans.
5. Do not apply more spray or dust than needed. A thorough, light application is more effective than a heavy, spotty one.
6. Avoid the need for disposing of pesticides by making up only the amount of spray that you need.
7. Do not flush surplus pesticides down the drain into sewage or septic tank systems.

Pesticide Use

Read the label on the pesticide container and follow the directions carefully. Never smoke while applying insecticides and avoid breathing the spray or dust. Wear natural rubber gloves when handling pesticides. Wash hands and face carefully with soap and water after applying. If insecticides are spilled on the skin or clothing, remove contaminated clothing and wash exposed skin areas thoroughly.

Always store pesticides in their original containers, never in fruit jars or soft drink bottles, and be sure that labels remain on the original containers. Keep containers away from food or animal feed and out of the reach of children or irresponsible persons.

Bee Warning

Many insecticides kill bees. Some cannot be applied safely at any time when plants are in bloom, while others should be applied only in the early morning or late evening when bees are not foraging for nectar and pollen. Avoid spraying carbaryl (Sevin) and diazinon (Spectracide) on plants that are surrounded by blooming flowers or weeds. Mow lawns next to the garden area to remove clover blossoms before applying any material hazardous to bees. This is a simple step and one that should always be taken. In all cases, when plants in the infested area are in bloom, select the material least hazardous to bees. Avoid using dusts whenever possible. Sprays are preferred for bee safety.

Hazard of Insecticides to Honey Bees

carbaryl (Sevin) diazinon (Spectracide) malathion (dust)	Do not apply on bloom or where bees are present
malathion (spray)	Apply only during late evening when blooms are present
chlordane endosulfan (Thiodan) methoxychlor	Apply during late evening, night, or early morning when blooms are present
dicofol (Kelthane) rotenone	Apply at any time

Trade names have been used to simplify information. No endorsement is intended. Extension programs are available to all, without regard to race, color, or national origin.

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