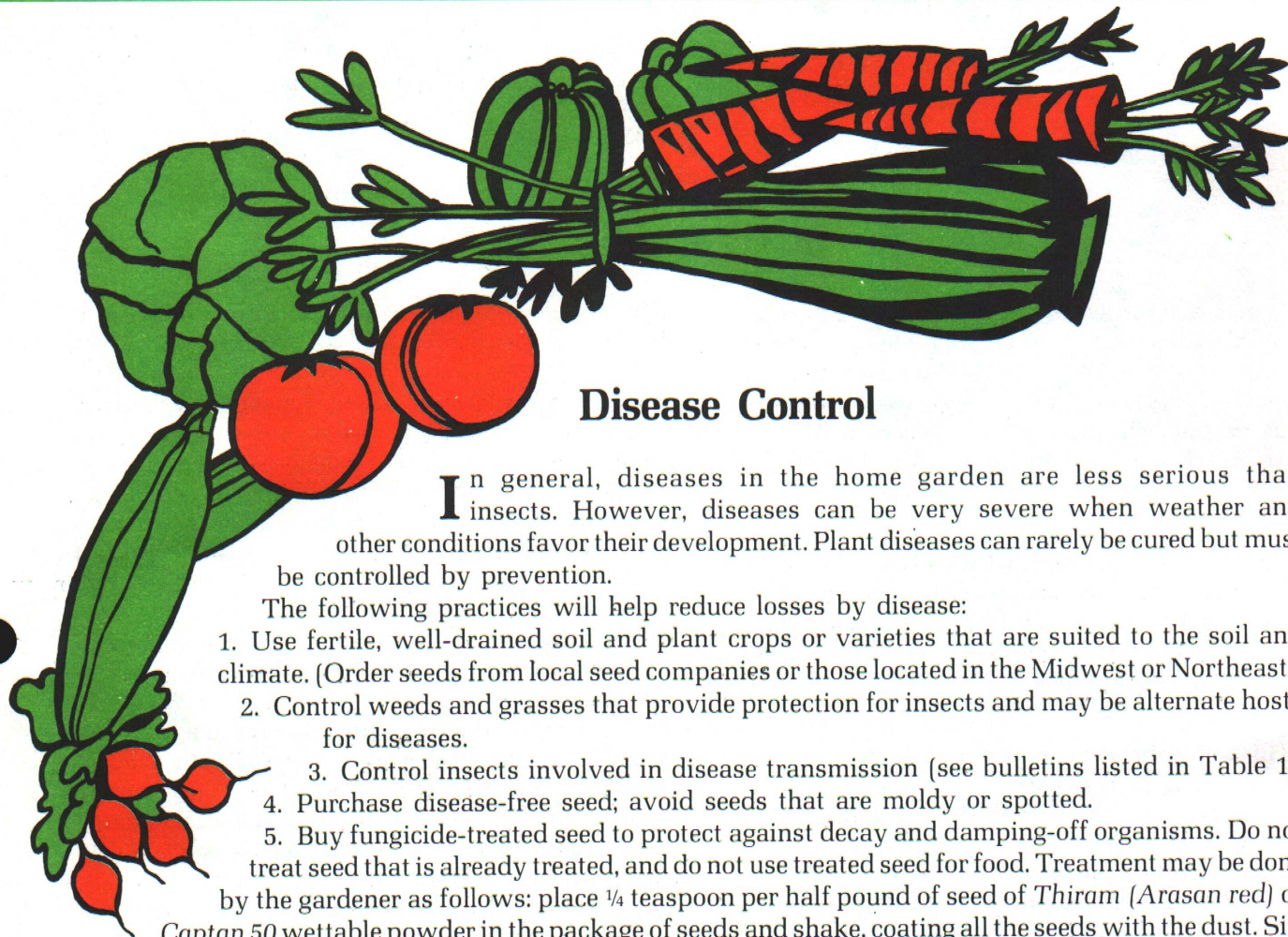


# Home Vegetable Garden Disease, Insect and Weed Control

EXTENSION BULLETION E-760(b) SEPTEMBER 1984  
(Revision, Destroy Previous Editions) 80 Cents

COOPERATIVE EXTENSION SERVICE  
MICHIGAN STATE UNIVERSITY



## Disease Control

In general, diseases in the home garden are less serious than insects. However, diseases can be very severe when weather and other conditions favor their development. Plant diseases can rarely be cured but must be controlled by prevention.

The following practices will help reduce losses by disease:

1. Use fertile, well-drained soil and plant crops or varieties that are suited to the soil and climate. (Order seeds from local seed companies or those located in the Midwest or Northeast.)
2. Control weeds and grasses that provide protection for insects and may be alternate hosts for diseases.
3. Control insects involved in disease transmission (see bulletins listed in Table 1).
4. Purchase disease-free seed; avoid seeds that are moldy or spotted.
5. Buy fungicide-treated seed to protect against decay and damping-off organisms. Do not treat seed that is already treated, and do not use treated seed for food. Treatment may be done by the gardener as follows: place  $\frac{1}{4}$  teaspoon per half pound of seed of *Thiram* (*Arasan red*) or *Captan 50* wettable powder in the package of seeds and shake, coating all the seeds with the dust. Sift the excess dust from the seed through a fine mesh screen.
6. Purchase disease-free plants; make sure they do not have swellings on the roots, cankers on the stems, or spots on the leaves.
7. Grow disease-resistant varieties such as those listed in Extension bulletin E-760(a), "Variety Suggestions for the Home Vegetable Garden." Some of those varieties are highly resistant; others give partial protection.
8. Because most bacteria, fungi and some home garden insects live in the soil from one growing season to the next, much of their damage can be avoided by relocating the garden or rotating the crops within the garden.
9. Closely related crops, such as melons and cucumbers or tomatoes, potatoes, peppers and eggplant, should not follow each other, because they are usually damaged by the same pests.

BY: Christine Taylor Stephens, Department of Botany and Plant Pathology;  
Rita R. Harris, formerly of the Department of Botany and Plant Pathology;  
Edward J. Grafius, Department of Entomology; and  
Bernard H. Zandstra, Department of Horticulture

Contributing Authors: Mark E. Whalon, Department of Entomology  
Donald C. Ramsdell, Department of Botany and Plant Pathology



10. Destroy or compost plants of each annual crop as soon as the harvest is completed.
11. To rid soil of disease organisms, it is often desirable to fumigate. Apply Vapam Soil Fumigant Solution (Bonide) in water to the soil surface two to three weeks before planting, using a watering can or a simple proportioner attached to a garden hose. Read label for correct dosages and specific application procedures.
12. Stay out of the garden when plants are wet to avoid spreading diseases. Water during the day and not at night.
13. At the first sign of disease, use a good fungicide for control. Read the label on the pesticide container to determine which crop diseases it will control, how much to use, and how and when to apply. Contact your County Extension office if you do not know what disease is causing your problems, or consult U.S. Department of Agriculture Home and Garden Bulletin No. 46, "Insects and Diseases of Vegetables in the Home Garden," available from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

## Insect Control

The management of insect pests in the home garden is a multifaceted process. We will describe it in the following step-by-step approach that can increase gardening efficiency (and enjoyment) and decrease control costs by dealing with specific pests only as the need arises. This allows for increased activity by the natural enemies of pests—predators, parasites and pathogens.

**STEP 1. Know Your Crops and Their Pests.** Familiarize yourself with insect pests known to be associated with the crops you intend to grow. Pay special attention to when damage is most likely to occur. Refer to Table 1 for a list of helpful resource aids.

**STEP 2. Monitor Your Crops.** Check your crops at regular intervals (at least once or twice a week), preferably at different times of the day. This is helpful because pests are active at different times of the day (or night) according to their habits and environmental conditions. Look for wilting, missing foliage, damaged fruits and the like—these are possible signs of insect activity. Determine what pests are present and how much damage they are doing. This process will, of course, be much easier if you have prepared in advance (Step 1). Don't assign guilt on the basis of presence alone—many incidental and beneficial insects may occur in the home garden. Have questionable insects identified by an expert (See Table 1). Store insect specimens in a solution of 1 part isopropyl (rubbing) alcohol and 1 part water. This keeps the insect specimen from deteriorating and aids identification.

**STEP 3. Decide on Controls.** First, decide if control is actually necessary; second, decide what type of control option(s) might be applicable. Control options include:

**BIOLOGICAL CONTROL**—Natural enemies of pests found in the typical home garden include predators, parasites and pathogens. Common predators include lady beetles (both larvae and adults), lacewing larvae ("aphid

lions"), spiders, ground beetles (small to medium blackish beetles and their larvae) and praying mantids.

Most parasites go about their activity unnoticed. However, the following signs will tip you off to the presence and activity of some parasites: brownish, dried-up, empty, aphid skins ("aphid mummies"); larger insects, especially caterpillars, with small white eggs or larger white cocoons attached to their backs; or pest bodies stuffed full of grub-like parasite larvae. All these are signs of beneficial natural enemies at work. Protect them by protecting parasitized pests.

Insect pests also suffer the ravages of fatal diseases caused by various pathogens. The following signs will tip you off to the presence of pathogens: dark-brown, shriveled, mushy caterpillar corpses (viruses and bacteria); flies, such as root maggot adults, suspended by a thread of saliva from any object 2 or 3 feet off the ground, and the body bloated with white fungal spores (fungal disease). Do not remove these individuals from the garden—they will provide inoculum to infect other pest individuals. (NOTE: these pathogens are host specific to insects and will not infect plants or other animals or humans.)

**MECHANICAL CONTROL**—Several mechanical control techniques have proven effective in the home garden. Hand picking larger pests—especially hornworms and other caterpillars, and potato beetles—often provides effective control. Many small insects, such as aphids, can be washed from the foliage with a forceful spray of water. Borers, such as squash vine borer, can be killed in the stem with a needle or sharp knife, often with a minimum of damage to the plant. Barriers, such as soup cans sunk 1 inch into the soil around transplants, are effective in preventing damage by cutworms.

**CULTURAL CONTROL**—A considerable amount of insect control can be achieved through garden planning and maintenance. Some plant varieties may be resistant to insect damage. Check the package, or experiment with several varieties. Rotate your crops. Don't plant the same crops, or similar crops (such as tomatoes-peppers or



radishes-turnips) in the same spot in the garden year after year. Corn rootworm can be effectively controlled by rotation because the eggs are laid in the fall and the larvae, which hatch in the spring, must have corn roots to feed upon. Adjusting planting time may control certain pests. For example, a late planting of summer squash will mature after squash vine borer is gone for the season. Trap crops can be useful. Plant a small area of highly susceptible crop "for the bugs." These areas can then be destroyed, sprayed or allowed to be destroyed by the pests. Proper cleanup of crop residues after harvest helps to control many pests. Several pests, such as root maggots, cabbage aphids and European corn borer, have additional generations on, or overwinter in, crop residue and weeds.

**CHEMICAL CONTROLS**—Recommended insecticides for the various crops are listed in detail in the following sections of this bulletin. Dust formulations are not as highly recommended as the sprayable formulations listed here, because dusts are much more difficult to apply evenly and do not adhere as well to the plant foliage.

Some insecticides are naturally occurring toxicants extracted from plants (rotenone and pyrethrum). *Bacillus thuringiensis* ("B.T."), marketed under the names Dipel® and Thuricide®, is a bacterial disease specific to caterpillars. It is not toxic to predators, parasites or mammals, including humans.

If you decide to use an insecticide, **READ THE LABEL** before purchasing, to be certain it is suitable for your needs, and **USE WITH CAUTION**, following all label instructions.

Insecticides available for use in the home garden are not highly toxic, and they are safe when used according to label instructions. Most accidents are the result of improper storage and handling. Store all insecticides out of the reach of children, preferably in a locked cabinet. Always store insecticides in their original containers so everyone knows what they are. Do not reuse containers for any other purpose, and destroy them promptly after they are empty.

When mixing and using insecticides, follow any precautions given on the label about wearing protective clothing. Mix small amounts of insecticides—it is better to mix two or three batches than to have surplus mixture. **DO NOT** pour leftover insecticides into drains or sewers.

**STEP 4. Apply the Selected Control**—Put the selected control(s) into practice. Combinations of biological, cultural, mechanical and/or chemical controls may be most effective.

**STEP 5. Continue Monitoring**—It is necessary to continue monitoring your garden to determine the effectiveness of the controls and to detect continued or additional pest activity. Additional decision making and controls might be necessary.

The success of this garden pest management program depends in great part on early detection of pest problems, followed by prompt action. In cases where insect pests are known to be severely damaging, it is often necessary to anticipate serious damage and begin a series of regular insecticide applications as "insurance." This is especially true in the case of root maggots, European corn borer in peppers or sweet corn, and squash vine borer.

## Weed Control

Before planting a garden, it is essential to kill all perennial weeds present. Perennials are usually not controlled by pre-emergence herbicides, so they come up and compete with crop plants each year unless they are killed. Some common perennial weeds causing problems in gardens are dandelion, quackgrass, milkweed, poison ivy, bindweed (morning glory) and plantain.

The simplest way to control perennials in the home garden is to apply a translocated-type herbicide at the most susceptible stage for each weed. Though several herbicides are available for general vegetation control, the safest herbicide with no residual activity is Kleenup (Roundup). For most perennial weeds, best control is achieved when the weeds are near or at flowering. Do not till the soil until the weeds are at their most susceptible stage. Then spray, wait a week and then till the soil. For instance, quackgrass is most susceptible to Kleenup

when it is 8-10 inches high, just before seed heads appear. This occurs about mid-May or later in most parts of Michigan.

Weed control will be improved by clean culture and crop rotation. Removing weeds each year before they go to seed reduces the amount of seed in the soil. Rotating to crops on which other herbicides can be used will avoid the buildup of certain weeds. Unfortunately, only a few pre-emergence herbicides are readily available to home gardeners, and all of them control about the same weeds.

Herbicides can be classified in several ways. The most common classification is by time of application. The majority of herbicides are pre-emergence herbicides—that is, they are applied before weeds emerge and either keep weed seeds from germinating or kill the small seedlings as they come up. Some pre-emergence herbicides must be incorporated (mixed into the soil) to be effective. They are



usually applied and incorporated before the crop is planted, but in some cases they can be applied and incorporated between rows of the crop after it is up. Other pre-emergence herbicides are applied to the surface of the soil after the crop is planted. A small amount of rainfall is usually needed to move the herbicide into the soil.

Postemergence herbicides are applied to existing weeds. They either kill on contact or are translocated in the plants and kill the growing point or reproductive organs. Some kill only grasses, some kill only broad-leaved weeds, and some kill virtually any plant. Post-emergence herbicides available to home gardeners are for weed control in turf or non-crop areas and should not be used on or near vegetable plants.

The pre-emergence herbicides listed in this bulletin contain either Dacthal or Treflan (trifluralin). Both keep weed seeds from germinating or emerging. Both are primarily grass herbicides, but they give some control of certain broadleaved weeds. Both will give approximately three to four weeks of weed control, with resistant weeds germinating earlier. In some cases, herbicides can be reapplied later in the season to extend weed control.

Dacthal should be applied to weed-free soil after seeding or transplanting; trifluralin should be incorporated after application. Neither will control emerged weeds.

Soil type affects activity of herbicides. Generally, the coarser the soil, the lower the rate of herbicide needed and the sooner herbicide activity is lost. Thus lower rates of herbicide are used on sands and sandy loams, and higher rates on clay and organic soils. Also, high organic matter level in soil reduces the activity of some herbicides. Dacthal and trifluralin are not very effective on organic soils.

Postemergence lawn herbicides should not be used on vegetable gardens, because they will kill most vegetable crops. Many of them also leave a residue in the soil that can affect crops the following year. They also leave toxic residues in the sprayer, which are often sufficient to injure or kill vegetables sprayed later with the same equipment.

No herbicide will give complete, season-long control of all weeds in all crops. Good weed control is achieved through a combination of practices: clean culture, hand hoeing and weeding, mulching and herbicide application. There is no substitute for some hard work.



**TABLE 1. Resource Aids for the Home Gardener**

	Who/What	How to Find
EXPERTS	Experienced gardeners	Check with neighbors, garden center, local garden club or graduate of a Master Gardener Program.
	Extension agents	Consult the phone book for the county Cooperative Extension Service office nearest you.
EXTENSION BULLETINS	A large variety of extension bulletins dealing with insect control, disease control and variety recommendations are available.	Check with your county Extension office  <i>or write:</i>  MSU Bulletin Office P.O. Box 231 East Lansing, MI 48823-0231  (Single copies of up to 10 different titles are free, except for sale only bulletins.)
OTHER	NCR126 Diseases of Radishes in the U.S. (75 cents, for sale only) WREP15 How to reduce bee poisoning from pesticides	
BOOKS and PERIODICALS	A wide range of information is available.	Check at your local public library or bookstore.



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Asparagus</b>	Asparagus beetles	PYRETHRIN				
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0	Treat with recommended pesticides as needed to minimize egg laying on the spears during picking or serious defoliation during the summer.	
		Tomato and Vegetable Insect Killer	Ortho	0		
		ROTENONE				
		Garden Guard	Acme	1		
		Rotenone Dust or Spray	Ortho	1		
	Rotenone 5 Organic Insecticide	Bonide	1			
	Rust	SULFUR				
		Wettable Dusting Sulfur	Acme	0	When disease appears; apply every 7 to 10 days.	
	Weeds	TREFLAN				
	Preen Flower and Garden Weed Preventer	Lebanon			Apply before spears emerge in the spring, mix into top 1 inch of soil. Apply again after harvest, mix or soak into soil.	
	Weed Preventer Granules	Acme			Same as above.	
<b>Beans</b>	Aphids	CARBARYL				
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3	Apply recommended pesticides if aphid numbers are high (exceed 5 per leaflet). Try to get good coverage on the undersides of the leaves.	
		Vegetable-Floral Dust or Spray	Bonide	1		
		DIAZINON				
		Diazinon Dust 4%	Bonide	7		
		Diazinon Insect Dust	Acme	7		
		Diazinon Insect Spray	Ortho	7		
		Diazinon Soil and Foliage Dust	Ortho	7		
		Diazinon Spray	Acme	14		
		Fruit and Vegetable Insect Control	Ortho	7		
		DI-SYSTON				
		Systemic Granules 1%	Bonide	*		
		MALATHION				
		Malathion 50 Insect Spray	Ortho	0		
		Malathion 50%E	Bonide	1		
Malathion 50% Spray	Acme	3				
METHOXYCHLOR						
Tomato Vegetable Dust	Ortho	3				

\*Apply prior to planting

Continued p. 7



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Beans cont.	Aphids, <i>continued</i>	PYRETHRIN				
		Garden Dust	Bonide	1	See page 6.	
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		
		Tomato and Vegetable Insect Spray	Ortho	1		
		ROTENONE				
		Rotenone-Copper Dust for Potato-Tomato-Vegetable	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
	Cutworms	CARBARYL				
		Liquid Sevin Dura-Spray	Acme	*		
		Sevin Garden Dust	Ortho	0		
		Sevin 50W	Bonide	0		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Tomato-Vegetable Dust	Bonide	0		
		DIAZINON				
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Insect Spray	Ortho	7		
		Diazinon Soil & Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
Garden Soil Insecticide	Bonide	*				
Vegetable Guard Soil Insect Killer	Ortho	*				
Leafhoppers	CARBARYL				Apply recommended pesticides if numbers exceed 1 per trifoliate leaf or when leaf cupping first appears.	
	Liquid Sevin Dura-Spray	Acme	0			
	Old Pro Vegetable and Fruit Tree Spray	Bonide	3			
	Sevin 5% Dura-Dust	Acme	0			
	Sevin 5% Dust	Bonide	0			
	Sevin 50W	Bonide	0			
	Sevin 50W Insecticide	Acme	0			
	Sevin 2 Flowable Insecticide	Bonide	0			
	Tomato-Vegetable Dust	Bonide	0			
	Vegetable-Floral Dust or Spray	Bonide	1			

\*Apply prior to planting

Continued p. 8



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply			
<b>Beans,</b> cont.	Leafhoppers, <i>continued</i>	<b>DIAZINON</b>						
		Diazinon Dust 4%	Bonide	7	See page 7.			
		Diazinon Insect Dust	Acme	7				
		Diazinon Insect Spray	Ortho	7				
		Fruit and Vegetable Insect Control	Ortho	7				
		<b>DI-SYSTON</b>						
		Systemic Granules 1%	Bonide	*				
		<b>MALATHION</b>						
		Malathion 50 Insect Spray	Ortho	0				
		Malathion 50% Spray	Acme	3				
		<b>METHOXYCHLOR</b>						
		Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	3				
		Methoxychlor 25% E Insecticide	Bonide	3				
		Tomato Vegetable Dust	Ortho	3				
		<b>PYRETHRIN</b>						
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0				
		Tomato and Vegetable Insect Killer	Ortho	0				
		Tomato and Vegetable Insect Spray	Ortho	1				
		<b>ROTENONE</b>						
		Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide	1				
		Rotenone 5 Organic Insecticide	Bonide	1				
			<b>Mexican Bean Beetle</b>	<b>CARBARYL</b>				Treat with recommended pesticide if more than 20 to 25 percent of the foliage is lost.
				Old Pro Vegetable and Fruit Tree Spray		Bonide	3	
		Sevin 50W	Bonide	0				
		Sevin 50W Insecticide	Acme	0				
		Sevin 5% Dura-Dust	Acme	0				
		Sevin 5% Dust	Bonide	0				
		Sevin Garden Dust	Ortho	0				
		Sevin 2 Flowable Insecticide	Bonide	0				
		Tomato-Vegetable Dust	Bonide	0				
		Vegetable-Floral Dust or Spray	Bonide	1				
		<b>DIAZINON</b>						
		Diazinon Dust 4%	Bonide	7				
		Diazinon Insect Spray	Ortho	7				
		Diazinon Spray	Acme	14				
		Fruit and Vegetable Insect Control	Ortho	7				

\*Apply prior to planting

Continued p. 9



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Beans</b> cont.	Mexican Bean Beetle, <i>continued</i>	MALATHION				
		Malathion 50%E	Bonide	1	See page 8.	
		Malathion 50% Spray	Acme	3		
		METHOXYCHLOR				
		Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	3		
		Methoxychlor 25%E Insecticide	Bonide	3		
		Tomato Vegetable Dust	Ortho	3		
		PYRETHRIN				
		Garden Dust	Bonide	1		
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		
		Tomato and Vegetable Insect Spray	Ortho	1		
		ROTENONE				
		Blue Death Garden Dust	Bonide	1		
		Garden Guard	Acme	1		
		1% Rotenone	Bonide	1		
		Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		Rotosyn Insect Dust	Bonide	1		
		Seed Corn Maggot	DIAZINON			
	Diazinon Insect Dust	Acme	*	Apply at planting.		
Tarnished Plant Bug		CARBARYL				
		Liquid Sevin Dura-Spray	Acme	0	Treat with recommended pesticide if numbers exceed 1 per plant.	
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin Garden Dust	Ortho	0		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Tomato-Vegetable Dust	Bonide	0		
		Vegetable-Floral Dust or Spray	Bonide	1		
		PYRETHRIN				
		Tomato and Vegetable Insect Killer	Ortho	0		
		ROTENONE				
		Rotenone-Copper Dust for Potatoes, Tomatoes and Vegetables	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Beans</b> cont.	Anthracnose	CAPTAN Captan 50% WP	Bonide	0	When disease appears; apply every 7 to 10 days.
		CHLOROTHALONIL** Vegetable Disease Control	Ortho	14	
		COPPER Garden Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
		Rotenone-Copper Dust for Potato-Tomato and Vegetable Gardens	Bonide	1	Every 7 to 10 days after flowering.
		SULFUR Tomato and Vegetable Dust	Acme	7	When disease appears; apply every 7 to 10 days.
		ZINEB All Round Dust	Acme	14	Every 7 days after disease appearance.
		Red River Vegetable Spray	Acme	7	When disease appears; apply every 5 to 7 days.
	Bacterial Blight	COPPER Liquid Copper 4E	Bonide	0	Every 7 days after disease appears.
		Rotenone-Copper Dust for Potato-Tomato- Vegetable Gardens	Bonide	1	When disease appears; apply every 7 to 10 days.
	Gray Mold	CAPTAN Captan 50% WP	Bonide	0	When disease appears; apply every 7 to 10 days.
		CHLOROTHALONIL** Vegetable Disease Control	Ortho	14	When disease appears; apply every 7 to 10 days.
		COPPER Garden Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
		SULFUR Tomato and Vegetable Dust	Acme	7	When disease appears; apply every 7 to 10 days.
	Powdery Mildew	COPPER Garden Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
		Rotenone-Copper Dust for Potato-Tomato Vegetable Gardens	Bonide	1	When disease appears; apply every 7 to 10 days.

\*\*Chemical that has demonstrated best control

Continued p. 11



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Beans</b>	Powdery Mildew, <i>continued</i>	SULFUR Flotox Garden Sulfur	Ortho	0	When disease appears; apply every 7 to 10 days.	
		Tomato and Vegetable Dust	Acme	7		
	Rust	CAPTAN Captan 50% WP	Bonide	0	When disease appears; apply every 7 to 10 days.	
		Tomato Vegetable Dust	Ortho	1	When disease appears; apply every 7 to 10 days.	
		CHLOROTHALONIL** Vegetable Disease Control	Ortho	14	When disease appears; apply every 7 to 10 days.	
		MANEB Maneb Tomato and Vegetable Dust	Acme	4	Every 7 days after disease appears.	
		SULFUR Tomato and Vegetable Dust	Acme	7	When disease appears; apply every 7 to 10 days.	
		Wettable Dusting Sulphur	Acme	0	When disease appears; apply every 7 to 10 days.	
		ZINEB Red River Vegetable Spray	Acme	7	When disease appears; apply every 5 to 7 days.	
		White Mold	CHLOROTHALONIL Vegetable Disease Control	Ortho	14	When disease appears; apply every 7 to 10 days.
	COPPER Garden Dust		Bonide	1	When disease appears; apply every 7 to 10 days.	
	SULFUR Tomato and Vegetable Dust		Acme	7	When disease appears; apply every 7 to 10 days.	
	Weeds	DACTHAL Garden Turf and Ornamental Herbicide 5G	Bonide		Apply immediately after sowing.	
		Garden Weed Preventer	Ortho		As above.	
		Garden Weed Preventer Spray	Acme		As above.	
		TREFLAN Preen Flower and Garden Weed Preventer	Lebanon		Apply before sowing; mix into top 2 inches of soil.	
		Weed Preventer Granules	Acme		As above.	
		<b>Beets</b>	Aphids	DIAZINON Diazinon Insect Dust	Acme	14
	ROTENONE Rotenone 5 Organic Insecticide			Bonide	1	

\*\*Chemical that has demonstrated best control



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Beets</b> cont.	Cutworms	DIAZINON Diazinon Spray	Acme	*	Apply if cut-off seedlings are observed.	
	Flea Beetle	CARBARYL Liquid Sevin Dura-Spray	Acme	3 (for roots) 14 (for tops)	Treat with recommended pesticide if leaves show numerous "shot holes" from adult feeding.	
		Sevin 2 Flowable Insecticide	Bonide	3		
		ROTENONE Rotenone 5 Organic Insecticide	Bonide	1		
	Cercospora Leaf Spot	ZINEB All Round Dust	Acme	14	Every 7 days after disease appears.	
		Zineb 75W (also kale, mustard, and Swiss chard)	Acme	7	When disease appears; apply every 7 to 10 days.	
	Downy Mildew	ZINEB Zineb 75W (also kale, mustard and Swiss chard)	Acme	7	When disease appears; apply every 7 to 10 days.	
	<b>Carrots</b>	Aphids	DIAZINON Diazinon Insect Dust	Acme	10	Apply recommended pesticide if aphid numbers are very high and leaves are curling from damage.
			Diazinon Insect Spray	Ortho	10	
			Diazinon Soil and Foliage Dust	Ortho	10	
Diazinon Spray			Acme	14		
Fruit and Vegetable Insect Control			Ortho	10		
ROTENONE Rotenone 5 Organic Insecticide			Bonide	1		
Cutworms			CARBARYL Liquid Sevin Dura-spray	Acme	0	
		DIAZINON Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Spray	Acme	*		
		Leafhoppers	CARBARYL Liquid Sevin Dura-Spray	Acme	0	Control aster leafhopper with recommended pesticide to reduce aster yellows disease.
Sevin 5% Dust			Bonide	0		
Sevin 5% Dura-Dust			Acme	0		
Sevin Garden Dust			Ortho	3		
Sevin 2 Flowable Insecticide			Bonide	0		
Tomato-Vegetable Dust	Bonide		0			
DIAZINON Diazinon Insect Spray	Ortho		10			
Fruit and Vegetable Insect Control	Ortho		10			

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Carrots</b> cont.	Wireworms	DIAZINON			Treat soil prior to planting if wireworms are observed during cultivation.	
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Soil & Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
		Garden Soil Insecticide	Bonide	*		
		Vegetable Guard Soil Insect Killer	Ortho	*		
	Alternaria Leaf Spot	CAPTAN				When disease appears; apply every 7 to 10 days.
		Captan 50% WP	Bonide	0		
		Tomato Vegetable Dust	Ortho	0		
		ZINEB All Round Dust	Acme	7		
		Zineb 75W	Acme	7 (if top used)		
	Cercospora Leaf Spot	CAPTAN				When disease appears; apply every 7 to 10 days.
		Captan 50% WP	Bonide	0		
		COPPER Copper Spray or Dust	Bonide			
		Liquid Copper 4E	Bonide	0		
		MANEB Maneb Tomato and Vegetable Fungicide	Acme			
		Tomato-Vegetable Dust	Bonide	0		
	ZINEB Zineb 75W		Acme			When plants are 6 weeks old or at disease appearance. Apply at 7- to 10-day intervals.
Weeds	TREFLAN				Before sowing, mix into top 2 inches of soil.	
	Preen Flower and Garden Weed Preventer	Lebanon				
	Weed Preventer Granules	Acme				
<b>Celery</b>	Aphids	DIAZINON			Treat with recommended pesticide if high numbers are occurring on new growth.	
		Fruit and Vegetable Insect Control	Ortho	10		
		PYRETHRIN Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Celery</b> cont.	Cutworms	DIAZINON			Treat, as needed, in spring to prevent cut-off plants and in July to control larvae feeding inside the plant.	
		Diazinon Soil & Turf Insect Control	Ortho	0		
		Garden Soil Insecticide	Bonide	*		
		Vegetable Guard Soil Insect Killer	Ortho	0		
	Loopers	<i>BACILLUS THURINGIENSIS</i>				Treat with recommended pesticide if numbers exceed 1 per 10 plants.
		<i>B. thuringiensis</i> Moth Larvae Control	Bonide	0		
		Dipel 0.86% WP	Bonide	0		
		METHOXYCHLOR				
		Methoxychlor 25% E Insecticide	Bonide	0		
		PYRETHRIN				
	Damping Off	Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0	Apply to seed bed after germination.	
		Captan 50% WP	Bonide	0		
	Early Blight, Late Blight	COPPER				When disease appears; apply every 7 to 10 days.
		Copper Spray or Dust	Bonide	0		
Liquid Copper 4E		Bonide	0			
	CHLOROTHALONIL** Vegetable Disease Control	Ortho	7		When disease appears; apply every 7 to 10 days.	
<b>Cole Crops</b> (broccoli, Brussels sprouts, cabbage, cauliflower)	Aphids	CARBARYL			Apply recommended pesticide if colonies build up and leaf cupping occurs.	
		Old Pro Vegetable and Fruit Tree Spray	Bonide	7		
		DIAZINON				
		Diazinon Dust 4%	Bonide	7 (cab.), 5 (broc. & caul.)		
		Diazinon Insect Dust	Acme	7 (cab.), 5 (broc. & caul.)		
		Diazinon Insect Spray	Ortho	7		
		Diazinon Soil and Foliage Dust	Ortho	7 (cab.), 5 (broc. & caul.)		
		Diazinon Spray	Acme	14		
		Fruit and Vegetable Insect Control	Ortho	7 (cab.), 5 (broc. & caul.)		
		DI-SYSTON				
		Systemic Granules 1%	Bonide	*		
		MALATHION				
		Malathion 50% Spray	Acme	7		
		PYRETHRIN				
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
ROTENONE						
Rotenone 5 Organic Insecticide	Bonide	1				

\*Apply prior to planting

\*\*Chemical that has demonstrated best control



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply			
<b>Cole Crops</b> cont.	Cabbage Looper	<i>BACILLUS THURINGIENSIS</i>			Apply recommended pesticide as needed during July and August. Small larvae will be much easier to control.			
		<i>B. thuringiensis</i> Moth Larvae Control	Bonide	0				
		Dipel 0.86% WP	Bonide	0				
		Thuricide Microbial Insecticide	Acme	0				
		<i>CARBARYL</i>						
		Old Pro Vegetable and Fruit Tree Spray	Bonide	7				
		Sevin 50W	Bonide	3				
		Sevin 2 Flowable Insecticide	Bonide	3				
		Tomato-Vegetable Dust	Bonide	7				
		<i>ROTENONE</i>						
		Garden Guard	Acme	1				
		Rotenone 5 Organic Insecticide	Bonide	1				
		<i>PYRETHRIN</i>						
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0				
		Tomato and Vegetable Insect Killer	Ortho	0				
		Cabbage Worms		<i>BACILLUS THURINGIENSIS</i>				Apply recommended pesticide as needed to control damage (easier to control than loopers).
				<i>B. thuringiensis</i> Moth Larvae Control		Bonide	0	
				Dipel 150 Dust for Vegetables		Bonide	0	
Dipel 0.86% WP	Bonide			0				
Thuricide Microbial Insecticide	Acme			0				
<i>CARBARYL</i>								
Liquid Sevin Dura-Spray	Acme			3				
Old Pro Vegetable and Fruit Tree Spray	Bonide			7				
Sevin 50W Insecticide	Acme			3				
Sevin 5% Dust	Bonide			3				
Sevin 5% Dura-Dust	Acme			3				
Sevin Garden Dust	Ortho			3				
Sevin 2 Flowable Insecticide	Bonide			3				
Tomato-Vegetable Dust	Bonide			7				
<i>DIAZINON</i>								
Diazinon Dust 4%	Bonide			7 (cab.), 5 (broc. & caul.)				
Diazinon Insect Spray	Ortho			7				
Diazinon Soil and Foliage Dust	Ortho			7 (cab.), 5 (broc. & caul.)				
Diazinon Spray	Acme			7				
Fruit & Vegetable Insect Control	Ortho			7 (cab.), 5 (broc. & caul.)				

Continued p. 16



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Cole Crops</b> cont.	Cabbage Worms, <i>continued</i>	MALATHION				
		Malathion 50% Spray	Acme	7	See page 15.	
		METHOXYCHLOR				
		Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	7, 3 (caul.)		
		Methoxychlor 25% E Insecticide	Bonide	7 (caul.), 3 (cab.)		
		PYRETHRIN				
		Tomato and Vegetable Insect Killer	Ortho	0		
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		ROTENONE				
		Blue Death Garden Dust	Bonide	1		
		1% Rotenone	Bonide	1		
		Rotenone Dust or Spray	Ortho	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		Rotosyn Insect Dust	Bonide	1		
		Cutworms	DIAZINON			
	Diazinon Dust 4%	Bonide	*	Treat if needed to prevent cut-off of transplants or seedlings.		
	Diazinon Insect Dust	Acme	*			
	Diazinon Insect Spray	Ortho	7			
	Diazinon Soil and Turf Insect Control	Ortho	*			
	Diazinon Spray	Acme	*			
	Garden Soil Insecticide	Bonide	*			
	Vegetable Guard Soil Insect Killer	Ortho	*			
Flea Beetle	CARBARYL					
	Liquid Sevin Dura-Spray	Acme	3	Treat with recommended pesticide if needed to control adults.		
	Old Pro Vegetable and Fruit Tree Spray	Bonide	7			
	Sevin 50 W Insecticide	Acme	3			
	Sevin 5% Dura-Dust	Acme	3			
	Sevin Garden Dust	Ortho	3			
	Tomato-Vegetable Dust	Bonide	7			
	DIAZINON					
	Diazinon Soil and Foliage Dust	Ortho	7			
	Fruit and Vegetable Insect Control	Ortho	7			
	PYRETHRIN					
	Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0			
	Tomato and Vegetable Insect Killer	Ortho	0			

\*Apply prior to planting

Continued p. 17



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Cole Crops</b> cont.	Flea Beetle, <i>continued</i>	ROTENONE			See page 16.	
		Blue Death Garden Dust	Bonide	1		
		Rotenone Dust or Spray	Ortho	1		
	Root Maggots	DIAZINON				Apply to the soil around the base of the plants after transplanting or planting evergreens.
		Diazinon Soil and Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
	Thrips	Vegetable Guard Soil Insect Killer	Bonide		7	
		DIAZINON			7	
		Diazinon Insect Spray	Ortho		7 (cab.), 3 (broc. & caul.)	
		Fruit and Vegetable Insect Control	Ortho		7 (cab. & Brus. spts.), 5 (broc. & caul.)	
	Alternaria Leaf Spot	MALATHION				
		Malathion 50 Insect Spray	Ortho		7 (cab. & Brus. spts.), 5 (broc. & caul.)	
		COPPER				
		Copper Spray or Dust	Bonide		1	When disease appears; apply every 7 to 10 days.
		MANEB				
		Maneb Tomato and Vegetable Fungicide	Acme		10	Every 7 days after disease appears.
		Tomato-Vegetable Dust	Bonide		3 (7 days for cabbage)	When disease appears; apply every 7 to 10 days.
		SULFUR				
	Tomato and Vegetable Dust	Acme		7	When disease appears; apply every 7 to 10 days.	
	Downy Mildew	ZINEB				
All Round Dust		Acme		14	Every 7 days after disease appears.	
Red River Vegetable Spray		Acme		10	When disease appears; apply every 5 to 7 days.	
CAPTAN						
Tomato Vegetable Dust		Ortho		3 (7 days for cabbage)	When disease appears; apply every 7 to 10 days.	
CHLOROTHALONIL						
Vegetable Disease Control		Ortho		0	When disease appears; apply every 7 to 10 days.	
COPPER	Copper Spray or Dust	Bonide		1	When disease appears; apply every 7 to 10 days.	
	MANEB					
	Maneb Tomato and Vegetable Fungicide	Acme		10	When disease threatens; then weekly.	
	ZINEB					
	Red River Vegetable Spray	Acme		10	When disease appears; apply every 5 to 7 days.	

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Cole Crops</b> cont.	Weeds	DACTHAL Garden Turf and Ornamental Herbicide 5G	Bonide		Immediately after sowing or transplanting.	
		Garden Weed Preventer	Ortho		As above.	
		Garden Weed Preventer Spray	Acme		As above.	
		TREFLAN Preen Flower and Garden Weed Preventer	Lebanon		Before sowing or trans- planting, mix into top 2 inches of soil.	
		Weed Preventer Granules	Acme		As above.	
<b>Cucurbits</b>	Aphids	DIAZINON Diazinon Dust 4%	Bonide	7 (summer squash), 3 (melon, winter squash)	Treat with recom- mended pesticide if numbers exceed 1 per 10 leaves in virus- susceptible plants, 10 per leaf in virus- resistant varieties.	
		Diazinon Insect Dust	Acme	7 (cuke, summer squash), 3 (melon, winter squash)		
		Diazinon Insect Spray	Ortho	7 (cucumber), 3 (cantaloupe)		
		Diazinon Soil and Foliage Dust	Ortho	7 (cuke, squash), 3 (melon)		
		Diazinon Spray	Acme	14		
		Fruit and Vegetable Insect Control	Ortho	7 (summer squash) 3 (cantaloupe, melon, winter squash)		
		MALATHION Flower-Vegetable 4-in-1 Spray	Bonide	7		
		Malathion 50 Insect Spray	Ortho	7		
		Malathion 50% E	Bonide	1		
		METHOXYCHLOR Tomato-Vegetable Dust	Ortho	7		
		PYRETHRIN Garden Dust	Bonide	1		
		Tomato and Vegetable Insect Spray	Ortho	1		
		ROTENONE Cuke and Melon Dust	Bonide	1		
		Rotenone-Copper Dust for Potato-Tomato- Vegetable Gardens	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		THIODAN Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	5		



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply		
<b>Cucurbits</b> cont.	Cucumber Beetles	CARBARYL					
		Liquid Sevin	Acme	0	Control beetles with recommended pesticide to minimize leaf damage and prevent spread of bacterial wilt disease.		
		Dura-Spray					
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3			
		Sevin 50W	Bonide	0			
		Sevin 50W Insecticide	Acme	0			
		Sevin 5% Dura-Dust	Acme	0			
		Sevin 5% Dust	Bonide	0			
		Sevin Garden Dust	Ortho	0			
		Tomato-Vegetable Dust	Bonide	1			
		DIAZINON					
		Diazinon Insect Spray	Ortho	7 (cucumber), 3 (cantaloupe)			
		Diazinon Soil and Foliage Dust	Ortho	7 (cuke & squash), 3 (melon)			
		Diazinon Spray	Acme	14			
		Fruit and Vegetable Insect Control	Ortho	7 (summer squash) 3 (cantaloupe, melon, winter squash)			
		MALATHION					
		Flower-Vegetable 4-in-1 Spray	Bonide	7			
		Malathion 50% E	Bonide	1			
		METHOXYCHLOR					
		Tomato-Vegetable Dust	Ortho	7			
		PYRETHRIN					
		Garden Dust	Bonide	1			
		Tomato and Vegetable Insect Spray	Ortho	1			
		ROTENONE					
		Blue Death Garden Dust	Bonide	1			
		Cuke and Melon Dust	Bonide	1			
		Garden Guard	Acme	1			
		1% Rotenone	Bonide	1			
		Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide	1			
		Rotenone 5 Organic Insecticide	Bonide	1			
		Cutworms	DIAZINON				Treat as needed to prevent cut-off seedlings or transplants.
			Diazinon Dust 4%	Bonide	*		
			Diazinon Insect Dust	Acme	*		
			Diazinon Insect Spray	Ortho	7 (cuke), 3 (cantaloupe)		
			Diazinon Soil and Turf Insect Control	Ortho	*		
Garden Soil Insecticide	Bonide		*				
Vegetable Guard Soil Insect Killer	Ortho		*				
Seed Corn Maggot	DIAZINON				Apply at planting if soil is high in organic material and cold.		
	Diazinon Insect Dust	Acme	*				

\*Apply prior to planting



## Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Cucurbits</b> cont.	Squash Bug	CARBARYL				
		Liquid Sevin	Acme	0	Begin treatment with recommended pesticide when black bugs are first seen. Repeat as needed.	
		Dura-Spray				
		Sevin 50W	Bonide	0		
		Sevin 50W Insecticide	Acme	0		
		Sevin 5% Dura-Dust	Acme	0		
		Sevin 5% Dust	Bonide	0		
		Sevin Garden Dust	Ortho	0		
		Tomato-Vegetable Dust	Bonide	1		
		METHOXYCHLOR				
	Tomato-Vegetable Dust	Ortho	7			
	ROTENONE					
	Rotenone 5 Organic Insecticide	Bonide	1			
	Squash Vine Borer	MALATHION				Begin weekly applications with recommended pesticide as vines start to run, or when wasp-like adult moths are seen. If vine wilts, slit stem with knife and remove the borer, heap earth over stem joints to start new roots. Second planting will mature after borer feeding. Destroy vines after harvest.
		Flower-Vegetable 4-in-1 Spray	Bonide	7		
		Malathion 50% E	Bonide	1		
		METHOXYCHLOR				
		Tomato-Vegetable Dust	Ortho	7		
		PYRETHRIN				
		Garden Dust	Bonide	1		
	ROTENONE					
	Garden Guard	Acme	1			
	Alternaria Blight	SULFUR				When disease appears; apply every 7 to 10 days.
		Tomato and Vegetable Dust	Acme	5		
		ZINEB				
		Red River Vegetable Spray	Acme	5		
	Angular Leaf Spot	Zineb 75W	Acme	5	When disease appears; apply every 7 to 10 days.	
CAPTAN					When disease appears; apply every 7 to 10 days. Every 7 days after disease appears.	
Captan 50% WP		Bonide	0			
Orthocide Garden Fungicide	Ortho	0				
Angular Leaf Spot	COPPER				When disease appears; apply every 7 to 10 days. When disease appears; apply every 7 to 10 days.	
	Copper Spray or Dust	Bonide	1			
	Liquid Copper 4E	Bonide	0			



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply		
<b>Cucurbits</b> cont.	Anthracnose	CAPTAN Captan 50% WP	Bonide	0	When disease appears; apply every 7 to 10 days.		
		Orthocide Garden Fungicide	Ortho	0	When disease appears; apply every 7 to 10 days.		
		Tomato-Vegetable Dust	Ortho	7	When disease appears; apply every 7 to 10 days.		
		CHLOROTHALONIL** Vegetable Disease Control	Ortho	0	When disease appears; apply every 7 to 10 days.		
		COPPER Copper Spray or Dust	Bonide	1	When disease appears; apply every 7 to 10 days.		
		Cuke and Melon Dust	Bonide	1	Apply when plants are above ground.		
		Garden Dust	Bonide	1	When disease appears; apply every 7 to 10 days.		
		MANEB Maneb Tomato and Vegetable Fungicide	Acme	5	Begin when runners form, then daily.		
		Tomato-Vegetable Dust	Bonide	1	When disease appears; apply every 7 to 10 days.		
		SULFUR Tomato and Vegetable Dust	Acme	5	When disease appears; apply every 7 to 10 days.		
		ZINEB All Round Dust	Acme	7	Every 7 days after disease appears.		
		Red River Vegetable Spray	Acme	5	When disease appears; apply every 5 to 7 days.		
		Zineb 75W	Acme	5	When disease appears; apply every 7 to 10 days.		
		Bacterial Wilt (Must control cucumber beetles to avoid this disease. See insect control section.)					
		Gummy Stem Blight		COPPER Copper Spray or Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
CHLOROTHALONIL** Vegetable Disease Control	Ortho			0	When disease appears; apply every 7 to 10 days.		
MANEB Tomato-Vegetable Dust	Bonide			1	When disease appears; apply every 7 to 10 days.		
ZINEB Red River Vegetable Spray	Acme			5	When disease appears; apply every 5 to 7 days.		
Zineb 75 W	Acme			5	When disease appears; apply every 7 to 10 days.		
Powdery Mildew		CHLOROTHALONIL Vegetable Disease Control	Ortho	0	When disease appears; apply every 7 to 10 days.		

\*\*Chemical that has demonstrated best control

Continued p. 22



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Cucurbits</b> cont.	Powdery Mildew, <i>continued</i>	COPPER Copper Spray or Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
		Cuke and Melon Dust	Bonide	1	When disease appears; apply every 5 to 7 days.
		Garden Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
		Liquid Copper 4E Fungicide	Bonide	0	When disease appears; apply every 7 to 10 days.
		MALATHION Flower-Vegetable 4-in-1 Spray	Bonide	7	When disease appears; apply every 7 to 10 days.
		SULFUR Tomato and Vegetable Dust	Acme	5	When disease appears; apply every 7 to 10 days.
		Pythium Fruit Rot	MANEB Maneb Tomato and Vegetable Fungicide	Acme	5
	Rhizoctonia Fruit Rot	CHLOROTHALONIL Vegetable Disease Control	Ortho	0	Every 7 days after disease appears.
	Scab	CHLOROTHALONIL Vegetable Disease Control	Ortho	0	When disease appears; apply every 7 to 10 days.
		COPPER Copper Spray or Dust	Bonide	1	When disease appears; apply every 7 to 10 days.
		Cuke and Melon Dust	Bonide	1	When disease appears; apply every 5 to 7 days.
		ROTENONE Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide	1	When disease appears; apply every 7 to 10 days.
	Weeds	DACTHAL Garden, Turf & Ornamental Herbicide 5G	Bonide		Apply to weed-free soil when plants have 4 to 5 leaves.
		Garden Weed Preventer	Ortho		As above.
		Garden Weed Preventer Spray	Acme		As above.
TREFLAN Preen Flower and Garden Weed Preventer		Lebanon		When crop plants have 3 to 4 leaves, mix into top 2 inches of soil.	
Weed Preventer Granules		Acme			
<b>Eggplant</b>	Aphids	CARBARYL Old Pro Vegetable and Fruit Tree Spray	Bonide	3	Apply recommended pesticide if numbers exceed 5 to 10 per leaf.
		METHOXYCHLOR Tomato-Vegetable Dust	Ortho	7	

Continued p. 23



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Eggplant</b> cont.	Aphids, <i>continued</i>	PYRETHRIN				
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		
		Tomato and Vegetable Insect Spray	Ortho	1		
		ROTENONE				
		Rotenone 5 Organic Insecticide	Bonide	1		
		Colorado Potato Beetle	CARBARYL			Treat with recommended pesticide if numbers exceed 1 to 2 adults or larvae per plant or if greater than 10 percent foliage loss occurs.
		Liquid Sevin Dura-Spray	Acme	0		
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Tomato-Vegetable Dust	Bonide	1		
		PYRETHRIN				
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		
		Tomato and Vegetable Insect Spray	Ortho	1		
		ROTENONE				
		1% Rotenone	Bonide	1		
		Rotenone-Copper Dust for Potato-Tomato-Vegetable Garden	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		Rotosyn Insect Dust	Bonide	1		
		Cutworms	CARBARYL			Treat as needed to prevent cut-off transplants.
		Liquid Sevin Dura-Spray	Acme	0		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Flea Beetle	CARBARYL			Treat with recommended pesticide if numbers exceed 2 per 10 leaves.
		Liquid Sevin Dura-Spray	Acme	0		
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin 50W	Bonide	0		
	Sevin 50W Insecticide	Acme	1			
	Sevin 2 Flowable Insecticide	Bonide	0			
	Tomato-Vegetable Dust	Bonide	1			

Continued p. 24



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply			
<b>Eggplant</b> cont.	Flea Beetle, <i>continued</i>	METHOXYCHLOR				See page 23.		
		Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	1				
		Methoxychlor 25% E Insecticide	Bonide	1				
		Tomato-Vegetable Dust	Ortho	7				
		PYRETHRIN						
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0				
		Tomato and Vegetable Insect Killer	Ortho	0				
		Tomato and Vegetable Insect Spray	Ortho	1				
		ROTENONE						
		Blue Death Garden Dust	Bonide	1				
		Garden Guard	Acme	1				
		1% Rotenone	Bonide	1				
		Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide	1				
		Rotenone 5 Organic Insecticide	Bonide	1				
		Rotosyn Insect Dust	Bonide	1				
		Anthracnose	COPPER	Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide		1	When disease appears; apply every 7 to 10 days.
				MANEB				
				Maneb Tomato and Vegetable Fungicide	Acme		0	
SULFUR								
Tomato and Vegetable Dust	Acme			5	When disease appears; apply every 7 to 10 days.			
ZINEB	Red River Vegetable Spray	Acme	5	When disease appears; apply every 5 to 7 days.				
	Fruit Rot	MANEB						
Maneb Tomato and Vegetable Fungicide		Acme	0	As fruit forms; then weekly.				
<b>Garden Greens</b> (collards, kale, mustard, Swiss chard)	Aphids	MALATHION			Apply recommended pesticide as needed to minimize foliar damage.			
		Malathion 50% Spray	Acme	7				
		PYRETHRIN						
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0				



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply		
<b>Garden Greens</b> cont.	Cabbage Worm	<i>BACILLUS THURINGIENSIS</i>			Apply recommended pesticide as needed to minimize foliar damage.		
		<i>B. Thuringiensis</i> Moth Larvae Control	Bonide	0			
		Dipel 150 Dust for Vegetables	Bonide	0			
		Dipel 0.86% WP	Bonide	0			
		Thuricide Microbial Insecticide	Acme	0			
		CARBARYL Liquid Sevin Dura-Spray	Ortho	14			
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0			
		Sevin 2 Flowable Insecticide	Bonide	14			
		MALATHION Malathion 50% Spray	Acme	7			
		ROTENONE Rotenone 5 Organic Insecticide	Bonide	1			
		Flea Beetle	CARBARYL Liquid Sevin Dura-Spray	Acme		14	Apply as needed to minimize foliar damage.
			Sevin 2 Flowable Insecticide	Bonide		14	
			ROTENONE Rotenone 5 Organic Insecticide	Bonide		1	
	ROTENONE Rotenone 5 Organic Insecticide		Bonide	1			
	Weeds	DACTHAL Garden, Turf & Ornamental Herbicide 5G	Bonide		Apply immediately after sowing.		
		Garden Weed Preventer	Ortho		As above.		
		Garden Weed Preventer Spray	Acme		As above.		
		TREFLAN Preen Flower and Garden Weed Preventer	Lebanon		Apply before sowing and mix into top 2 inches of soil.		
		Weed Preventer Granules	Acme		As above.		
		Aphids	DIAZINON Fruit and Vegetable Insect Control	Ortho	10	Apply recommended pesticide weekly as needed.	
DI-SYSTON Systemic Granules 1%			Bonide				
PYRETHRIN Organic Greenhouse, Houseplant and Vegetable Spray	Bonide		0				
Tomato and Vegetable Insect Killer	Ortho						
<b>Lettuce and Endive</b>	DIAZINON Fruit and Vegetable Insect Control	Ortho	10	Apply recommended pesticide weekly as needed.			
	DI-SYSTON Systemic Granules 1%	Bonide					
	PYRETHRIN Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0				
	Tomato and Vegetable Insect Killer	Ortho					



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Lettuce and Endive cont.	Cabbage Looper	BACILLUS THURINGIENSIS			Apply recommended pesticide if necessary to minimize foliar damage.	
		<i>B. Thuringiensis</i> Moth Larvae Control	Bonide	0		
		Dipel 0.86% WP	Bonide	0		
		Thuricide Microbial Insecticide	Acme	0		
		CARBARYL				
		Sevin Garden Dust	Ortho	3 (head), 14 (leaf)		
		Sevin 2 Flowable Insecticide	Bonide	14		
		PYRETHRIN				
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		
	Cabbage Worms	ROTENONE				
		Rotenone 5 Organic Insecticide	Bonide	1		
	Cutworms	DIAZINON				Apply to soil surface around base of plant.
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Soil and Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
		Garden Soil Insecticide	Bonide	*		
		Vegetable Guard Soil Insect Killer	Ortho	*		
	Leafhoppers	CARBARYL				Apply recommended pesticide weekly if numbers exceed 1 to 2 per 10 plants to reduce aster yellows disease.
		Liquid Sevin Dura-Spray	Acme	3 (head), 14 (leaf)		
		Sevin 5% Dura-Dust	Acme	3 (head), 14 (leaf)		
		Sevin 5% Dust	Bonide	3		
Sevin 2 Flowable Insecticide		Bonide	14			
Tomato-Vegetable Dust		Bonide				
DI-SYSTON						
Systemic Granules 1% PYRETHRIN		Bonide				
Tomato and Vegetable Insect Killer		Bonide	0			
ROTENONE						
Rotenone 5 Organic Insecticide	Bonide	1				
Downy Mildew	COPPER				When disease appears; apply every 7 to 10 days.	
	Liquid Copper 4E	Bonide	0			
	MANEB				When disease appears; apply every 7 to 10 days.	
	Maneb Tomato and Vegetable Fungicide	Acme	10			
Tomato-Vegetable Dust	Bonide	14	When disease appears; apply every 7 to 10 days.			

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Lettuce and Endive</b> cont.	Downy Mildew, <i>continued</i>	SULFUR Tomato and Vegetable Dust	Acme	10	When disease appears; apply every 7 to 10 days.
		ZINEB Zineb 75 W	Acme	10	When disease appears; apply every 7 to 10 days.
<b>Onions</b>	Cutworms	DIAZINON Diazinon Dust 4%	Bonide	*	Apply if needed to prevent cut-off plants.
		Diazinon Insect Dust	Acme	*	
	Onion Maggot	DIAZINON Diazinon Insect Dust	Acme	*	Apply at planting to reduce damage to roots and stand loss.
		Diazinon Soil and Turf Insect Control	Ortho	*	
		Garden Soil Insecticide	Bonide	*	
		Vegetable Guard Soil Insect Killer	Ortho	*	
	Thrips	DIAZINON Diazinon Dust 4%	Bonide	10	Apply recommended pesticide if numbers exceed 30 to 35 per plant.
		Diazinon Insect Dust	Acme	10	
		Diazinon Insect Spray	Ortho	10	
		Diazinon Soil and Foliage Dust	Ortho	10	
Fruit and Vegetable Insect Control		Ortho	10		
ROTENONE Rotenone 5 Organic Insecticide		Bonide	1 (also leeks, garlic & shallots)		
Botrytis Leaf Blight and Other Fungal spots	ZINEB Zineb 75 W	Acme	5	When disease appears; apply every 7 to 10 days.	
Downy Mildew	COPPER Liquid Copper 4E	Bonide	0	When disease appears; apply every 7 to 10 days.	
	MANEB Maneb Tomato and Vegetable Fungicide	Acme	0	Every 7 days after disease appears.	
	ZINEB Zineb 75 W	Acme	7	When disease appears; apply every 7 to 10 days.	
Weeds	DACTHAL Garden, Turf and Ornamental Herbicide 5G	Bonide		Apply immediately after sowing.	
	Garden Weed Preventer	Ortho		As above.	
	Garden Weed Preventer Spray	Acme		As above.	

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Peas	Aphids	DIAZINON				
		Diazinon Dust 4%	Bonide	0†	Treat with recommended pesticide if numbers exceed 5 per 100 leaves to reduce virus disease transmission.	
		Diazinon Insect Dust	Acme	0		
		Fruit and Vegetable Insect Control	Ortho	1		
		DI-SYSTON				
		Systemic Granules 1%	Bonide	*		
		MALATHION				
		Malathion 50 Insect Spray	Ortho	3		
		Malathion 50% Spray	Acme	3 (do not use vines for forage)		
	ROTENONE					
	Rotenone 5 Organic Insecticide	Bonide	1			
	Cutworms	CARBARYL				Treat with recommended pesticide as needed to prevent cut-off seedlings.
		Liquid Sevin Dura-Spray	Acme	0		
		DIAZINON				
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Soil and Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
		Garden Soil Insecticide	Bonide	*		
		Vegetable Guard Soil Insect Killer	Ortho	*		
	Leafhoppers	CARBARYL				Treat with recommended pesticide if numbers exceed 1 per trifoliate leaf or if leaf cupping appears.
		Liquid Sevin Dura-Spray	Acme	0		
		Sevin 50W Insecticide	Acme	1		
		DIAZINON				
		Diazinon Insect Dust	Acme	0		
		MALATHION				
		Malathion 50 Insect Spray	Ortho	3		
		ROTENONE				
	Rotenone 5 Organic Insecticide	Bonide	1			
	Tarnished Plant Bugs	CARBARYL				Treat with recommended pesticide if numbers exceed 1 per plant.
		Liquid Sevin Dura-Spray	Acme	0		
		MALATHION				
Malathion 50 Insect Spray	Ortho	3				
Powdery Mildew	SULFUR				When disease appears, apply every 7-10 days.	
	Flotox Garden Sulfur	Ortho	0			
	Wettable Dusting Sulfur	Acme	0			

\*Apply prior to planting

†If used as dust, do not feed fodder to livestock for 10 days following last application.



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply			
<b>Peas</b> cont.	Weeds	TREFLAN						
		Preen Flower and Garden Weed Preventer	Lebanon		Before sowing, mix into top 2 inches of soil.			
		Weed Preventer Granules	Acme		As above.			
<b>Peppers</b>	Aphids	CARBARYL						
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3	Treat with recommended pesticide if numbers exceed 1 per 20 leaves to reduce virus disease transmission.			
		DIAZINON						
		Diazinon Insect Spray	Ortho	5				
		Diazinon Soil and Foliage Dust	Ortho	5				
		Diazinon Spray	Acme	14				
		Fruit and Vegetable Insect Control	Ortho	5				
		METHOXYCHLOR						
		Tomato-Vegetable Dust	Ortho	7				
		PYRETHRIN						
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0				
		Tomato and Vegetable Insect Killer	Ortho	0				
		Tomato and Vegetable Insect Spray	Ortho	1				
		ROTENONE						
		Rotenone 5 Organic Insecticide	Bonide	1				
		THIODAN						
		Tomato-Potato-Vegetable Insecticide/Fungicide Dust	Bonide	1				
		Colorado Potato Beetle	CARBARYL					Treat with recommended pesticide if more than 10 percent foliage loss occurs.
			Liquid Sevin	Acme		0		
			Dura-Spray					
Old Pro Vegetable and Fruit Tree Spray	Bonide		3					
Sevin Garden Dust	Ortho		0					
Sevin 2 Flowable Insecticide	Bonide		0					
Tomato-Vegetable Dust	Bonide		1					
DIAZINON								
Fruit and Vegetable Insect Control	Ortho		5					
METHOXYCHLOR								
Tomato-Vegetable Dust	Ortho		7					
PYRETHRIN								
Tomato and Vegetable Insect Killer	Ortho		0					
Tomato and Vegetable Insect Spray	Ortho		1					
ROTENONE								
Rotenone 5 Organic Insecticide	Bonide	1						



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Peppers</b> cont.	Corn Borer	CARBARYL			Apply every 3 to 5 days during fruiting if more than 1 egg mass per plant is found.
		Liquid Sevin	Ortho	0	
		Liquid Sevin Dura-Spray	Acme	0	
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3	
		Sevin 50 W	Bonide	0	
		Sevin Garden Dust	Ortho	0	
		Sevin Garden Spray	Ortho	0	
		Tomato-Vegetable Dust	Bonide	1	
		Cutworms	CARBARYL		
	Liquid Sevin Dura-Spray		Acme	0	
	DIAZINON				
	Diazinon Dust 4%		Bonide	*	
	Diazinon Insect Dust		Acme	*	
	Diazinon Insect Spray		Ortho	5	
	Diazinon Soil and Turf Insect Control		Ortho	*	
	Garden Soil Insecticide		Bonide	*	
	Vegetable Guard Soil Insect Killer		Ortho	*	
	Anthracnose		MANEB		
		Maneb Tomato and Vegetable Fungicide	Acme	0	
		Tomato-Potato-Vegetable Insecticide/Fungicide	Bonide	1	
		SULFUR			
		Tomato and Vegetable Dust	Acme	5	
		ZINEB			
		All Round Dust	Acme	7	
	Red River Vegetable Spray	Acme	5		
	Phytophthora Root Rot	ZINEB			When disease appears; apply every 5 to 7 days.
		Red River Vegetable Spray	Acme	5	
	Weeds	DACTHAL			Apply to weed-free soil 4 to 6 weeks after transplanting. As above. As above.
		Garden, Turf and Ornamental Herbicide 5G	Bonide		
		Garden Weed Preventer	Ortho		
		Garden Weed Preventer Spray	Acme		

\*Apply prior to planting

Continued p. 31



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Peppers</b> cont.	Weeds, <i>continued</i>	TREFLAN			
		Preen Flower and Garden Weed Preventer	Lebanon		Before transplanting, mix into top 2 inches of soil.
		Weed Preventer Granules	Acme		As above.
<b>Potatoes</b>	Aphids	CARBARYL			
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3	Treat with recommended pesticide if more than 30 aphids per leaf are present to prevent foliar damage and reduce disease transmission.
		Vegetable-Floral Dust or Spray	Bonide	1	
		DIAZINON			
		Diazinon Dust 4%	Bonide	35	
		Diazinon Insect Dust	Acme	35	
		Diazinon Insect Spray	Ortho	35	
		Diazinon Soil and Foliage Dust	Ortho	35	
		Diazinon Spray	Acme	35	
		Fruit and Vegetable Insect Control	Ortho	35	
		DI-SYSTON			
		Systemic Granules 1%	Bonide	*	
		MALATHION			
		Malathion 50 Insect Spray	Ortho	0	
		Malathion 50% Spray	Acme	3	
		METHOXYCHLOR			
		Tomato-Vegetable Dust	Ortho	1	
		PYRETHRIN			
		Garden Dust	Bonide	1	
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0	
		Tomato and Vegetable Insect Killer	Ortho	0	
		Tomato and Vegetable Insect Spray	Ortho	1	
		ROTENONE			
		Rotenone 5 Organic Insecticide	Bonide	1	
		THIODAN			
		Tomato-Potato-Vegetable Insecticide/Fungicide Dust	Bonide	0	
	Blister Beetle	METHOXYCHLOR			
		Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	1	
		Methoxychlor 25% E Insecticide	Bonide	1	
		Tomato-Vegetable Dust	Ortho	1	

\*Apply prior to planting



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Potatoes cont.	Blister Beetle, <i>continued</i>	PYRETHRIN Garden Dust	Bonide	1	See page 31.	
		Tomato and Vegetable Insect Killer	Ortho	0		
		Tomato and Vegetable Insect Spray	Ortho	1		
		Cabbage Looper		PYRETHRIN Tomato and Vegetable Insect Killer		Ortho
	Colorado Potato Beetle		CARBARYL Liquid Sevin Dura-Spray	Acme	0	Treat with recom- mended pesticide if numbers exceed 1 to 2 per plant or if foliar damage is greater than 10 percent.
			Old Pro Vegetable and Fruit Tree Spray	Bonide	0	
			Sevin 50W Insecticide	Acme		
			Sevin 5% Dura-Dust	Acme		
			Sevin 5% Dust	Bonide		
			Sevin Garden Dust	Ortho		
			Sevin 2 Flowable Insecticide	Bonide		
			Tomato-Vegetable Dust	Bonide		
			Vegetable-Floral Dust or Spray	Bonide		
			DIAZINON Fruit and Vegetable Insect Control	Ortho	35	
			METHOXYCHLOR Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	1	
			Methoxychlor 25% E Insecticide	Bonide	1	
			Tomato-Vegetable Dust	Ortho		
			PYRETHRIN Garden Dust	Bonide	1	
			Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	1	
			Tomato and Vegetable Insect Killer	Ortho		
			Tomato and Vegetable Insect Spray	Ortho		
			ROTENONE Garden Guard	Acme	1	
			1% Rotenone	Bonide	1	
			Rotenone-Copper Dust for Potato-Tomato- Vegetable Garden	Bonide		
	Rotenone 5 Organic Insecticide	Bonide				
	Rotosyn Insect Dust	Bonide				



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Potatoes cont.	Colorado Potato Beetle, <i>continued</i>	THIODAN				
		Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide		See page 32.	
	Cutworms	CARBARYL				Treat, if needed, to prevent cut-off plants in the spring or severe defoliation (greater than 10 percent) during the summer.
		Liquid Sevin	Acme	0		
		Dura-Spray				
		Sevin 2 Flowable Insecticide	Bonide	0		
		DIAZINON				
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Insect Spray	Ortho	35		
		Diazinon Soil and Turf Insect Control	Ortho	*		
		Garden Soil Insecticide	Bonide	*		
		Vegetable Guard Soil Insect Killer	Ortho	*		
	Flea Beetle	CARBARYL				Treat with recom- mended pesticide if numbers exceed 2 per 10 leaves or defoliation is greater than 10 percent.
		Liquid Sevin	Ortho	0		
		Dura-Spray				
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin 50W Insecticide	Acme	0		
		Sevin 5% Dura-Dust	Acme	0		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Tomato-Vegetable Dust	Bonide	1		
		Vegetable-Floral Dust or Spray	Bonide	1		
		DIAZINON				
		Diazinon Insect Spray	Ortho	35		
		Diazinon Soil and Foliage Dust	Ortho	35		
		Fruit and Vegetable Insect Control	Ortho	35		
		DI-SYSTON				
		Systemic Granules 1%	Bonide	*		
		METHOXYCHLOR				
		Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	1		
		Methoxychlor 25% E Insecticide	Bonide	1		
		Tomato-Vegetable Dust	Ortho	1		
		PYRETHRIN				
Garden Dust		Bonide	1			
Tomato and Vegetable Insect Killer	Ortho	0				
Tomato and Vegetable Insect Spray	Ortho	1				

\*Apply prior to planting

Continued p. 34



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Potatoes</b> cont.	Flea Beetle, <i>continued</i>	ROTENONE				See page 33.
		Garden Guard	Acme	1		
		1% Rotenone	Bonide	1		
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Rotenone-Copper Dust for Potato-Tomato- Vegetable Garden	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		Rotosyn Insect Dust	Bonide	1		
		THIODAN				
		Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	0		
	Hornworms	CARBARYL				Treat with recom- mended pesticide if foliage loss is greater than 10 percent.
		Liquid Sevin Dura-Spray	Acme	0		
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin Garden Dust	Ortho	0		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Tomato-Vegetable Dust	Bonide	1		
		PYRETHRIN				
		Tomato and Vegetable Insect Spray	Ortho	1		
		ROTENONE				
	Rotenone 5 Organic Insecticide	Bonide	1			
	Leafhoppers	CARBARYL				Apply recommended pesticide if numbers exceed 30 per 100 leaves or at first signs of leaf cupping.
		Liquid Sevin Dura-Spray	Acme	0		
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin 50W Insecticide	Acme	0		
		Sevin 5% Dura-Dust	Acme	0		
		Sevin 5% Dust	Bonide	0		
		Sevin 2 Flowable Insecticide	Bonide	0		
		Tomato-Vegetable Dust	Bonide	1		
		DIAZINON				
		Diazinon Dust 4%	Bonide	35		
		Diazinon Insect Dust	Acme	35		
Diazinon Insect Spray		Ortho	35			
Diazinon Soil and Foliage Dust		Ortho	35			
Fruit and Vegetable Insect Control		Ortho	35			
Vegetable-Floral Dust or Spray		Bonide	1			

Continued p. 35



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply		
<b>Potatoes</b> cont.	Leafhoppers, <i>continued</i>	DI-SYSTON Systemic Granules 1%	Bonide	*	See page 34.		
		MALATHION Malathion 50 Insect Spray	Ortho	0			
		METHOXYCHLOR Gypsy Moth, Japanese Beetle and Mosquito Spray	Bonide	1			
		Methoxychlor 25% E Insecticide	Bonide	1			
		Tomato-Vegetable Dust PYRETHRIN	Ortho	1			
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0			
		Tomato and Vegetable Insect Killer	Ortho	0			
		Tomato and Vegetable Insect Spray	Ortho	1			
		ROTENONE Rotenone-Copper Dust for Potato-Tomato- Vegetable Garden	Bonide	1			
		Rotenone 5 Organic Insecticide	Bonide	1			
		THIODAN Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	0			
		Wireworms	DIAZINON Diazinon Dust 4% Diazinon Insect Dust Diazinon Soil and Turf Insect Control Vegetable Guard Soil Insect Killer	Bonide Acme Ortho Ortho		* * * *	Treat soil at planting if larvae are present in the soil.
		Botrytis Vine Rot	CHLOROTHALONIL Vegetable Disease Control	Ortho		0	When disease appears; apply every 7 to 10 days.
		Damping off and seed rot	Captan 50% WP	Bonide		0	Pre-plant dip.
		Early Blight	CAPTAN Captan 50% WP	Bonide		0	When disease appears; apply every 7 to 10 days.
			Orthocide Garden Fungicide	Ortho		0	
			CHLOROTHALONIL** Vegetable Disease Control	Ortho		0	When disease appears; apply every 7 to 10 days.

\*Apply prior to planting

\*\*Chemical that has demonstrated best control

*Continued p. 36*



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Potatoes</b> cont.	Early Blight, <i>continued</i>	COPPER Bordeaux Mixture	Acme	0	When disease appears; apply every 10 to 14 days.	
		Copper Spray or Dust	Acme	0	When disease appears; apply every 7 to 10 days.	
		Rotenone-Copper Dust for Potato-Tomato- Vegetable Garden	Bonide	1	When disease appears; apply every 7 to 10 days.	
		MANEB Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	0	When disease appears; apply every 7 to 10 days.	
	Late Blight	CAPTAN Captan 50% WP	Bonide	0	When disease appears; apply every 7 to 10 days.	
		Orthocide Garden Fungicide	Ortho	0	When disease appears; apply every 7 to 10 days.	
		Tomato-Vegetable Dust	Ortho		When disease appears; apply every 7 to 10 days.	
		CHLOROTHALONIL Vegetable Disease Control	Ortho	0	When disease appears; apply every 7 to 10 days.	
		COPPER Bordeaux Mixture	Acme	0	When disease appears; apply every 7 to 10 days.	
		Copper Spray or Dust	Bonide	1	When disease appears; apply every 7 to 10 days.	
		ROTENONE Rotenone-Copper Dust for Potato-Tomato Vegetable Garden	Bonide	1	When disease appears; apply every 7 to 10 days.	
		Weeds	DACTHAL Garden, Turf, and Ornamental Herbicide 5G	Bonide		Apply to soil surface at planting or up to 9 weeks after planting.
	Garden Weed Preventer		Ortho		As above.	
	Garden Weed Preventer Spray		Acme		As above.	
	<b>Radishes and Turnips</b>	Aphids	DIAZINON Diazinon Dust 4% (turnips)	Bonide	0	Apply recommended pesticide if numbers exceed 30 per 100 leaves or at first signs of leaf cupping.
			Diazinon Insect Dust	Acme	10	
			Fruit and Vegetable Insect Control	Ortho	10	
			MALATHION Malathion 50 Insect Spray	Ortho	7	
Malathion 50% Spray			Acme	3		



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply		
Radishes and Turnips cont.	Aphids, <i>continued</i>	PYRETHRIN Organic Greenhouse, Houseplant and Vegetable Spray (radish)	Bonide	0	Apply recommended pesticide if numbers exceed 30 per 100 leaves or at first signs of leaf cupping.		
		Tomato and Vegetable Insect Killer	Ortho	0			
		ROTENONE Rotenone 5 Organic Insecticide	Bonide	1			
	Cabbage Looper	<i>BACILLUS THURINGIENSIS</i> Thuricide Microbial Insecticide	Acme	0	Treat with recommended pesticide if more than 10 percent foliar damage occurs.		
		CARBARYL Liquid Sevin Dura-Spray	Acme	3			
		Sevin 2 Flowable Insecticide	Bonide	3			
		Tomato-Vegetable Dust (turnip)	Bonide				
		MALATHION Malathion 50% Spray	Acme	3			
		PYRETHRIN Tomato and Vegetable Insect Killer	Ortho	0			
		ROTENONE Rotenone 5 Organic Insecticide (turnip)	Bonide	1			
		Cutworms	Diazinon Spray	Acme		*	Apply to bases of plants to prevent cut-off plants.
		Flea Beetle	CARBARYL Liquid Sevin Dura-Spray	Acme		3	Treat with recommended pesticide if foliar damage exceeds 10 percent.
	Sevin 2 Flowable Insecticide		Bonide	3			
	Tomato-Vegetable Dust		Bonide	0			
	DIAZINON Fruit and Vegetable Insect Control		Ortho	10			
	PYRETHRIN Organic Greenhouse, Houseplant and Vegetable Spray (radish)		Bonide	0			
	Tomato and Vegetable Insect Killer		Ortho	0			
	ROTENONE Rotenone 5 Organic Insecticide		Bonide	1			

\*Apply prior to planting.



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Radishes and Turnips</b> cont.	Root Maggot	DIAZINON			Treat at planting to minimize root injury.	
		Diazinon Insect Dust	Acme	*		
		Diazinon Soil and Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
		Garden Soil Insecticide	Bonide	*		
	Vegetable Guard Soil Insect Killer	Ortho	*			
	Downy Mildew	ZINEB				When disease appears; apply every 7 to 10 days.
		Zineb 75 W	Acme	10		
	Leaf Spot	ZINEB				When disease appears; apply every 7 to 10 days.
		All Round Dust	Acme	7		
		Zineb 75 W	Acme	10	When disease appears; apply every 7 to 10 days.	
<b>Spinach</b>	Aphids	DIAZINON			Treat with recommended pesticide as needed to prevent damage to new growth and contamination.	
		Fruit and Vegetable Insect Control	Ortho	10		
		DI-SYSTON				
		Systemic Granules 1% PYRETHRIN	Bonide	*		
	Organic Greenhouse, Houseplant and Vegetable Control	Bonide	0			
	Tomato and Vegetable Insect Killer	Ortho	0			
	Cutworms	DIAZINON				Treat with recommended pesticide as needed to prevent damage to new growth and contamination.
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Soil and Turf Insect Control	Ortho	*		
Garden Soil Insecticide		Bonide	*			
Vegetable Guard Soil Insect Killer	Ortho	*				
Flea Beetle	CARBARYL				Treat with recommended pesticide as needed to prevent damage to new growth and contamination.	
	Liquid Sevin Dura-Spray	Acme	14			
		DIAZINON			Treat with recommended pesticide as needed to prevent damage to new growth and contamination.	
		Fruit and Vegetable Insect Control	Ortho	10		

\*Apply prior to planting

Continued p. 39



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Spinach</b> cont.	Flea Beetle, <i>continued</i>	DI-SYSTON Systemic Granules 1%	Bonide	*	Treat with recommended pesticide as needed to prevent damage to new growth and contamination.
		ROTENONE Rotenone 5 Organic Insecticide	Bonide	1	
	Leaf Miner	DIAZINON Fruit and Vegetable Insect Control	Ortho	10	Apply as soon as leaf mines are visible. Remove and destroy infested foliage.
		DI-SYSTON Systemic Granules 1%	Bonide	*	
	Loopers	<i>BACILLUS THURINGIENSIS</i> <i>B. thuringiensis</i> Moth Larvae Control	Bonide	0	Treat with recommended pesticide as needed to control foliar damage.
		Dipel 0.86 WP	Bonide	0	
		PYRETHRIN Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0	
		ROTENONE Rotenone 5 Organic Insecticide	Bonide	1	
	Downy Mildew, Anthracnose, Cercospora, Red Spot	ZINEB Zineb 75 W	Acme	10	When disease appears; apply every 7 to 10 days.
	<b>Strawberries</b>	Leafhoppers	DIAZINON Diazinon Insect Spray	Ortho	5
Fruit and Vegetable Insect Control			Ortho	5	
METHOXYCHLOR Tomato-Vegetable Dust			Ortho	7	Apply when leafhoppers first appear.
Mites		CARBARYL Old Pro Vegetable and Fruit Tree Spray	Bonide	3	When 2 to 5 mites per leaf can be observed. Repeat as needed.
		DIAZINON Diazinon Dust 4%	Bonide	5	When 2 to 5 mites per leaf can be observed. Repeat as needed.
		Diazinon Insect Dust	Acme	5	As above.
		Diazinon Insect Spray	Ortho	5	After bloom, repeat every 10 to 14 days.
Diazinon Soil and Foliage Dust	Ortho	5	When 2 to 5 mites per leaf can be observed. Repeat as needed.		

\*Apply prior to planting

Continued p. 40



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Strawberries cont.	Mites, <i>continued</i>	Diazinon Spray	Acme	21	After bloom, repeat every 10 to 14 days. When 2 to 5 mites per leaf can be observed. Repeat as needed.	
		Fruit and Vegetable Insect Control	Ortho	5		
		ROTENONE Rotenone 5 Organic Insecticide	Bonide	1		Before and after bloom.
	Mole Crickets	DIAZINON Diazinon Soil and Turf Insect Control	Ortho			Before planting.
		Garden Soil Insecticide	Bonide			Before planting.
		Vegetable Guard Soil Insect Killer	Ortho			Before planting.
	Omnivorous Leaf tiers	METHOXYCHLOR Tomato-Vegetable Dust	Ortho	7	Apply when one leaf tier per plant is observed.	
	Spittlebugs	CARBARYL Old Pro Vegetable and Fruit Tree Spray	Bonide	3	Apply recommended pesticide when one spittle mass per plant is observed.	
		Sevin 50W Insecticide	Acme	1		
		Sevin 5% Dura-Dust	Acme	1		
Sevin 5% Dust		Bonide	1			
Sevin Garden Dust		Ortho	1			
DIAZINON Diazinon Soil and Foliage Dust		Ortho	5			
METHOXYCHLOR Tomato-Vegetable Dust		Ortho	7			
ROTENONE Rotenone 5 Organic Insecticide		Bonide	1			
Strawberry Leafroller		CARBARYL Old Pro Vegetable and Fruit Tree Spray	Bonide	1		Apply recommended pesticide when leaf rolling is observed and aphids are present in rolled leaf. Note that aphids are often controlled by lady beetle larvae in the rolled leaf.
		Sevin 50W Insecticide	Acme	1		
	Sevin 5% Dura-Dust	Acme	1			
	Sevin 5% Dust	Bonide	1			
	Sevin Garden Dust	Ortho	1			
	DIAZINON Diazinon Dust 4%	Bonide	5			
	Diazinon Spray	Acme	21			
	Fruit and Vegetable Insect Control	Ortho	5			
	ROTENONE Rotenone 5 Organic Insecticide	Bonide	1			
	Strawberry Weevil	CARBARYL Sevin 5% Dura-Dust	Acme	1	Apply when weevils first appear. Look for cut fruit clusters. This insect usually appears during	
Sevin 5% Dust		Bonide	1			
Sevin Garden Dust		Ortho	1			

Continued p. 41



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Strawberries</b> cont.	Strawberry Weevil, <i>continued</i>	ROTENONE Rotenone 5 Organic Insecticide	Bonide	1	bloom, but no insecticide sprays can be applied or pollinators (bees) will be killed.
	Botrytis Rot	CAPTAN Orthocide Garden Fungicide	Ortho	0	Apply as fruit forms; repeat every 7 days. Apply as fruit forms; repeat every 7 days.
		Tomato-Vegetable Dust	Ortho	7	
		Leaf Blight	COPPER Copper Spray or Dust	Bonide	
	Leaf Spot	COPPER Bordeaux Mixture	Acme	0	When disease appears; apply every 7 to 10 days. Prior to leaf formation; repeat at 10-day intervals.
		Copper Spray or Dust	Bonide	1	
		ZINEB Zineb 75 W	Acme		When disease appears; apply every 7 to 10 days.
	Weeds	DACTHAL Garden, Turf and Ornamental Herbicide 5G	Bonide		Apply immediately after transplanting. On established plants, apply in early fall and early spring.
		Garden Weed Preventer	Ortho		As above.
		Garden Weed Preventer Spray	Acme		As above.
<b>Sweet Corn</b>	Aphids	DIAZINON Fruit and Vegetable Insect Control	Ortho	1	Apply recommended pesticide as needed to control honeydew and sooty mold on ears.
		PYRETHRIN Tomato and Vegetable Insect Spray	Ortho	1	
	Corn Earworm Larvae	CARBARYL Liquid Sevin Dura-Spray	Acme	0	Begin treatments of recommended pesticide to silks when silks first appear. Continue treatment every 3 to 5 days.
		Old Pro Vegetable and Fruit Tree Spray	Bonide	5	
		Sevin 50 W	Bonide	0	
		Sevin 50W Insecticide	Acme	0	
		Sevin 5% Dura-Dust	Acme	0	
		Sevin 5% Dust	Bonide	0	
		Sevin Garden Dust	Ortho	0	
		DIAZINON Diazinon Dust 4%	Bonide	2	



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
<b>Sweet Corn</b> cont.	Corn Rootworms	DIAZINON				
		Diazinon Soil and Turf Insect Control	Ortho	*	Apply to soil at planting to control larvae if corn was in same area the previous year.	
		Garden Soil Insecticide	Bonide	8		
	Vegetable Guard Soil Insect Killer	Ortho	*			
	Corn Rootworm Adults	CARBARYL				Treat as needed to control adults and minimize damage to silk.
		Liquid Sevin Dura-Spray	Acme	0		
		Sevin Garden Dust	Ortho	0		
	Cutworms	CARBARYL				Treat with recommended pesticide as needed to minimize cut-off plants.
		Liquid Sevin Dura-Spray	Acme	0		
		DIAZINON				
		Diazinon Dust 4%	Bonide	*		
		Diazinon Insect Dust	Acme	*		
		Diazinon Soil and Turf Insect Control	Ortho	*		
		Diazinon Spray	Acme	*		
		Garden Soil Insecticide	Bonide	0†		
		Vegetable Guard Soil Insect Killer	Ortho	0†		
	European Corn Borer	CARBARYL				Apply recommended pesticide every 3 to 7 days beginning at tasseling or first silk.
		Liquid Sevin Dura-Spray	Acme	0		
		Sevin 50 W	Bonide	0		
		Sevin 50W Insecticide	Acme	0††		
		Sevin Garden Dust	Ortho	0		
		DIAZINON				
		Diazinon Soil and Turf Insect Control	Ortho	0†		
		Vegetable Guard Soil Insect Killer	Ortho	0†		
		ROTENONE				
	Rotenone Dust or Spray	Ortho	1			
	Flea Beetle	CARBARYL				Apply recommended pesticide when plants emerge, as needed. Repeat 2 to 3 times at 5-day intervals if necessary.
		Old Pro Vegetable and Fruit Tree Spray	Bonide	5		
Liquid Sevin Dura-Spray		Acme	0			
Sevin Garden Dust		Ortho	0			
DIAZINON						
Fruit and Vegetable Insect Control		Ortho	1			
PYRETHRIN						
Tomato and Vegetable Insect Spray	Ortho	1				

\*Apply prior to planting

†If used as dust, do not feed fodder to livestock for 10 days following last application.

††Do not feed treated fodder to animals.



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
<b>Sweet Corn</b> cont.	Sap Beetle	CARBARYL			
		Old Pro Vegetable and Fruit Tree Spray	Bonide	0	Treat as needed. Also, check for primary cause of damage.
		Sevin 50 W	Bonide	0	
	Sevin Garden Dust	Ortho	0		
	Seed Corn Maggot	DIAZINON Diazinon Insect Dust	Acme	*	Treat at planting if soil is high in organic matter and cold.
	Helminthosporium Leaf Blight and Rust	CHLOROTHALONIL Vegetable Disease Control	Ortho	14	When disease appears; apply every 7 to 10 days.
		MANEB Maneb Tomato and Vegetable Fungicide	Acme	0	When fruit first forms; apply on 7- to 10-day intervals.
		SULFUR Tomato and Vegetable Dust	Ortho	0	When disease appears; apply every 7 to 10 days.
	<b>Tomatoes</b>	Aphids	CARBARYL		
Old Pro Vegetable and Fruit Tree Spray			Bonide	3	Apply recommended pesticide if numbers exceed 5 to 10 per leaf.
Vegetable-Floral Dust or Spray			Bonide	1	
DIAZINON					
Diazinon Insect Dust			Acme	3	
Diazinon Insect Spray			Ortho	1	
Diazinon Soil and Foliage Dust			Ortho	3	
Diazinon Spray			Acme	1	
Fruit and Vegetable Insect Control			Ortho	3	
DI-SYSTON					
2% Systemic Granules			Acme	*	
MALATHION					
Malathion 50% E			Ortho	1	
Malathion 50 E Insect Spray			Ortho	7	
Malathion 50% Spray			Acme	3	
METHOXYCHLOR					
Tomato-Vegetable Dust			Ortho	7	
PYRETHRIN					
Garden Dust			Bonide	1	
Organic Greenhouse, Houseplant and Vegetable Spray			Bonide	0	
Tomato and Vegetable Insect Killer	Ortho	0			
Tomato and Vegetable Insect Spray	Ortho	1			
ROTENONE					
Rotenone 5 Organic Insecticide	Bonide	1			

\*Apply prior to planting

Continued p. 44



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Tomatoes cont.	Aphids, <i>continued</i>	THIODAN Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	5		
		Cabbage Loopers	<i>BACILLUS THURINGIENSIS</i> <i>B. thuringiensis</i> Moth Larvae Control	Bonide	0	Treat with recommended pesticide if foliage damage exceeds 10 percent.
		Dipel 0.86% WP	Bonide	0		
		Thuricide Microbial Insecticide	Acme	0		
		DIAZINON Diazinon Spray	Acme	1		
		PYRETHRIN Tomato and Vegetable Insect Killer	Ortho	0		
		Colorado Potato Beetle	CARBARYL Liquid Sevin Dura-Spray	Acme	0	Apply recommended pesticide if numbers reach 1 per plant or if damage exceeds 10 percent foliage loss. (Note: if foliage is very sparse, earlier treatment may be needed to avoid fruit damage by larvae.)
		Old Pro Vegetable and Fruit Tree Spray	Bonide	3		
		Sevin 2 Flowable Insecticide	Bonide	0		
		DIAZINON Fruit and Vegetable Insect Control	Ortho	1		
		METHOXYCHLOR Tomato-Vegetable Dust	Ortho	7		
		Vegetable-Floral Dust or Spray	Bonide	1		
		PYRETHRIN Garden Dust	Bonide	1		
		Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0		
		Tomato and Vegetable Insect Killer	Ortho	0		
		Tomato and Vegetable Insect Spray	Ortho	1		
		Tomato-Vegetable Dust	Bonide	1		
		ROTENONE 1% Rotenone	Bonide	1		
		Rotenone-Copper Dust for PTV	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		Rotosyn Insect Dust	Bonide	1		
		THIODAN Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	5		



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply			
Tomatoes cont.	Cutworms	CARBARYL						
		Liquid Sevin	Acme	0	Treat with recommended pesticide as needed to prevent cut-off transplants or damage to fruit.			
		Dura-Spray						
		Sevin 2 Flowable	Bonide	0				
		Insecticide						
		DIAZINON						
		Diazinon Dust 4%	Bonide	*				
		Diazinon Insect Dust	Acme	*				
		Diazinon Insect Spray	Ortho	1				
		Diazinon Soil and Turf Insect Control	Ortho	*				
		Diazinon Spray	Acme	*				
		Garden Soil Insecticide	Bonide	*				
		Vegetable Guard Soil Insect Killer	Ortho	*				
		Flea Beetle	CARBARYL					Apply recommended pesticide if damage exceeds 10 percent foliage loss.
			Liquid Sevin	Acme		0		
	Dura-Spray							
	Old Pro Vegetable and Fruit Tree Spray		Bonide	3				
	Sevin 50 W		Bonide	0				
	Sevin 50W Insecticide		Acme	1				
	Sevin 5% Dura-Dust		Acme	0				
	Sevin 5% Dust		Bonide	0				
	Sevin 2 Flowable Insecticide		Bonide	0				
	Sevin Garden Dust		Ortho	0				
	Tomato-Vegetable Dust		Bonide	1				
	DIAZINON							
	Diazinon Insect Spray		Ortho	1				
	Fruit and Vegetable Insect Control		Ortho	1				
	Vegetable-Floral Dust or Spray		Bonide	1				
	DI-SYSTON							
	Systemic Granules 1%		Bonide	*				
	2% Systemic Granules		Acme	*				
	METHOXYCHLOR							
	Gypsy Moth, Japanese Beetle, and Mosquito Spray	Bonide						
Methoxychlor 25% E Insecticide	Bonide	1						
Tomato-Vegetable Dust	Ortho	7						
PYRETHRIN								
Organic Greenhouse, Houseplant and Vegetable Spray	Bonide	0						
Tomato and Vegetable Insect Killer	Ortho	0						
Tomato and Vegetable Insect Spray	Ortho	1						
Garden Dust	Bonide	1						

\*Apply prior to planting

Continued p. 46



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply	
Tomatoes cont.	Flea Beetle, <i>continued</i>	ROTENONE				See page 45
		Blue Death Garden Dust	Bonide	1		
		Garden Guard	Acme	1		
		1% Rotenone	Bonide	1		
		Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Bonide	1		
		Rotenone 5 Organic Insecticide	Bonide	1		
		Rotosyn Insect Dust	Bonide	1		
		THIODAN				
		Tomato-Potato-Vegetable Insecticide/Fungicide Dust	Bonide	5		
		Hornworms	BACILLUS THURINGIENSIS			
	<i>B. thuringiensis</i> Moth Larvae Control		Bonide	0		
	Dipel 0.86% WP		Bonide	0		
	Thuricide Microbial Insecticide		Acme	0		
	CARBARYL					
	Liquid Sevin		Ortho	0		
	Liquid Sevin Dura-Spray		Acme	0		
	Sevin 50 W		Bonide	0		
	Sevin 5% Dura-Dust		Acme	0		
	Sevin 5% Dust		Bonide	0		
	Sevin Garden Dust		Ortho	0		
	Sevin Garden Spray		Ortho	0		
	Sevin 2 Flowable Insecticide		Bonide	0		
	Tomato-Vegetable Dust		Bonide	1		
	Old Pro Vegetable and Fruit Tree Spray		Bonide	3		
	PYRETHRIN					
	Tomato and Vegetable Insect Spray		Ortho	1		
	ROTENONE					
	Blue Death Garden Dust		Bonide	1		
	Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens		Bonide	1		
	Rotenone 5 Organic Insecticide	Bonide	1			
	Anthracnose Fruit Rot	CAPTAN				At flowering; apply at 7- to 10- day intervals. At flowering; apply at 7- to 10-day intervals. When disease appears; apply every 7 to 10 days.
		Captan 50% WP	Bonide	0		
		Orthocide Garden Fungicide	Ortho	0		
		Tomato-Vegetable Dust	Ortho	7		

Continued p. 47



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply		
Tomatoes cont.	Anthracnose, Fruit Rot, <i>continued</i>	CHLOROTHALONIL Vegetable Disease Control	Ortho	0	At flowering; apply at 7- to 10-day intervals.		
		COPPER Garden Dust	Bonide	1			
		MANEB Maneb Tomato and Vegetable Fungicide	Acme	5	When first fruit forms; apply at 7- to 10-day intervals.		
		SULFUR Tomato and Vegetable Dust	Acme	5	When disease appears; apply every 7 to 10 days.		
		ZINEB All Round Dust	Acme	14	After disease appears; apply every 7 days.		
		Red River Vegetable Spray	Acme	5	When disease appears; apply every 5 to 7 days.		
		Zineb 75 W	Acme	5	When disease appears; apply every 7 to 10 days.		
		Bacterial Leaf Spots	COPPER Copper Spray or Dust	Bonide	1	When disease appears; apply every 7 days.	
			Liquid Copper 4E Fungicide	Bonide	0	When disease appears; apply every 7 days.	
		Cladosporium Leaf Spot	ZINEB Zineb 75 W	Acme	5	Apply every 7 to 10 days after disease appears.	
		Early Blight		CAPTAN Captan 50% WP	Bonide	0	Apply every 7 to 10 days after disease appears.
				Orthocide Garden Fungicide	Ortho	0	Apply every 7 to 10 days after disease appears.
				CHLOROTHALONIL Vegetable Disease Control	Ortho	0	Apply every 7 to 10 days after disease appears.
				COPPER Bordeaux Mixture	Acme	0	Apply every 10 to 14 days after disease appears.
				Garden Dust MANEB	Bonide		
Maneb Tomato and Vegetable Fungicide	Acme			5	Apply every 7 days after disease appears.		
Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide			5	Apply every 7 days after disease appears.		
Tomato-Vegetable Dust	Bonide			7	Apply every 7 days after disease appears.		
SULFUR Tomato and Vegetable Dust	Acme			5	Apply every 7 days after disease appears.		

Continued p. 48



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply			
<b>Tomatoes</b> cont.	Early Blight	ZINEB Red River Vegetable Spray	Acme	5	When disease appears; apply every 5 to 7 days. When disease appears; apply every 7 to 10 days.			
		Zineb 75 W	Acme	5				
	Late Blight		CAPTAN Captan 50% WP	Bonide	0	Apply every 7 to 10 days after disease appears.		
			Orthocide Garden Fungicide	Ortho	0	Apply every 7 to 10 days after disease appears.		
			CHLOROTHALONIL** Vegetable Disease Control	Ortho	0	Apply every 7 to 10 days after disease appears.		
			COPPER Bordeaux Mixture	Acme	0	Apply every 10 to 14 days after disease appears.		
			Garden Dust MANEB	Bonide				
			Maneb Tomato and Vegetable Fungicide	Acme	5	Apply every 7 days after disease appears.		
			Tomato-Potato- Vegetable Insecticide/ Fungicide Dust	Bonide	5	Apply every 7 days after disease appears.		
			Tomato-Vegetable Dust	Bonide	7	Apply every 7 days after disease appears.		
			SULFUR Tomato and Vegetable Dust	Acme	5	Apply every 7 days after disease appears.		
			ZINEB Zineb 75 W	Acme	5	Apply every 7 to 10 days after disease appears.		
			Septoria Leaf Spot		CAPTAN Captan 50% WP	Bonide	0	Apply every 7 to 10 days after disease appears.
					Orthocide Garden Fungicide	Ortho	0	Apply every 7 to 10 days after disease appears.
					COPPER Garden Dust	Bonide	1	Apply every 7 to 10 days after disease appears.
	MANEB Maneb Tomato and Vegetable Fungicide	Acme			5	Apply every 7 to 10 days after disease appears.		
	SULFUR Tomato and Vegetable Dust	Acme			5	Apply every 7 to 10 days after disease appears.		
	ZINEB Zineb 75 W	Acme			5	Apply every 7 to 10 days after disease appears.		

\*\*Chemical that has demonstrated best control.



# Recommendations for disease, insect and weed control

Crop	Pest	Pesticide	Manufacturer	Days from Last Application to Harvest	When to Apply
Tomatoes, cont.	Weeds	DACTHAL Garden, Turf and Ornamental Herbicide 5G	Bonide		Apply to weed-free soil 4 to 6 weeks after transplanting. As above.
		Garden Weed Preventer	Ortho		
		Garden Weed Preventer Spray	Acme		As above.
		TREFLAN Preen Flower and Garden Weed Preventer	Lebanon		Before transplanting mix into top 2 inches of soil. As above.
		Weed Preventer Granules	Acme		

## Registered Herbicides

Trade Name	Common Name	Formulation	Rate of Application*	Manufacturer
Garden, Turf and Ornamental Herbicide 5G	Dacthal	5% granules	1 lb/250 sq ft	Bonide
Garden Weed Preventer	Dacthal	5% granules	1 lb/250 sq ft	Ortho
Garden Weed Preventer Spray	Dacthal	75% Wettable powder	3 T/250 sq ft	Acme
Kleenu	Roundup	5% liquid	1 c/gal/250 sq ft	Ortho
Preen Flower and Garden Weed Preventer	Treflan	1.47% granules	1.5 lb/250 sq ft	Lebanon
Weed Preventer Granules	Treflan	1.47% granules	1 to 2 c/300 sq ft	Acme
Vapam Soil Fumigant Solution	Metam Sodium	32.7	1 tsp/8 oz/sq ft	Bonide

NOTE: Chemicals which require dilution are mixed with water.



## Registered Insecticides

Trade Name	Common Name	Formulation (Percent Active Ingredient)	Rate of Application*	Manufacturer
Blue Death Garden Dust	Rotenone	.75	Cover surfaces or 3.2 oz/gal	Bonide
Cuke and Melon Dust	Rotenone	.35	Cover surfaces or 4 T/gal	Bonide
Diazinon Dust 4%	Diazinon	4	3.5 oz/100 sq ft for soil or 12 to 40 lb/A for foliage	Bonide
Diazinon Insect Dust	Diazinon	4	Cover surfaces	Acme
Diazinon Insect Spray	Diazinon	25	2 tsp/gal	Ortho
Diazinon Soil and Foliage Dust	Diazinon	4	2 lb/900 sq ft (soil) Cover surfaces (foliage)	Ortho
Diazinon Soil and Turf Insect Control	Diazinon	5	7 to 15 oz/500 sq ft	Ortho
Diazinon Spray	Diazinon	12.5	4 T/gal (foliage) 3 oz/100 sq ft (soil)	Acme
Dipel 150 Dust for Vegetables	<i>Bacillus thuringiensis</i>	.064	2.5 to 4 oz/435 sq ft	Bonide
Dipel 0.86%	<i>B. thuringiensis</i>	0.86	1 to 4 T/gal	Bonide
Flower-Vegetable 4-in-1 Spray	Malathion	9.4	3.5 T/gal	Bonide
Fruit and Vegetable Insect Control	Diazinon	25	2 tsp/gal	Ortho
Garden Dust	Pyrethrin Rotenone Copper Sulfur	0.03 0.5 25 5	Cover surfaces or 8 T/gal	Bonide
Garden Guard	Rotenone	1.0	Cover surfaces	Acme
Garden Soil Insecticide Diazinon 5% g	Diazinon	5	4 to 15 oz/500 sq ft	Bonide
Gypsy Moth, Japanese Beetle and Mosquito Spray	Methoxychlor	25	1.5 to 2 T/gal	Bonide
Liquid Sevin	Carbaryl	27	1 T/gal	Ortho
Liquid Sevin Dura-Spray	Carbaryl	50	2 T/gal	Acme
Malathion 50 Insect Spray	Malathion	50	1.5 tsp to 1 T/gal	Ortho
Malathion 50% E	Malathion	50	1.5 to 3 T/gal	Bonide
Malathion 50% Spray	Malathion	50	1 T/gal	Acme
Methoxychlor 25% E Insecticide	Methoxychlor	25	1.5 to 2 T/gal	Bonide
Old Pro Vegetable and Fruit Tree Spray	Carbaryl Malathion	13.5 13.5	2.5 T/gal	Bonide
1% Rotenone	none	1	10 to 30 lb/A or 3.2 oz/gal	Bonide
Organic Greenhouse, Houseplant and Vegetable Spray	Pyrethrin Pyperonyl butoxide	1 10	1 to 2 tsp/gal	Bonide

Continued p. 51



## Registered Insecticides, continued

Trade Name	Common Name	Formulation (Percent Active Ingredient)	Rate of Application*	Manufacturer
Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Rotenone	0.35	Cover surfaces or 4 T/gal	Bonide
Rotenone Dust or Spray	Rotenone	1	1 lb/1,000 sq ft or 6 to 8 T/gal	Ortho
Rotenone 5 Organic Insecticide	Rotenone	5	3 to 6.5 T/gal	Bonide
Rotosyn Insect Dust	Rotenone	0.35	Cover surfaces or 4 T/gal	Bonide
Sevin 50 W	Carbaryl	50	2 T/gal	Bonide
Sevin 5W Insecticide	Carbaryl	50	2 T/gal	Acme
Sevin 5% Dura-Dust	Carbaryl	5	Cover surfaces	Acme
Sevin 5% Dust	Carbaryl	5	Cover surfaces	Bonide
Sevin Garden Dust	Carbaryl	5	Cover surfaces	Ortho
Sevin Garden Spray	Carbaryl	50	2 T/gal	Ortho
Sevin 2 Flowable Insecticide	Carbaryl	22.5	4 to 16 tsp/gal	Bonide
Systemic Granules 1%	Di-Syston	1	6 to 12 oz/50 ft row	Bonide
Tomato and Vegetable Insect Killer	Pyrethrin	0.02	as labeled	Ortho
Tomato and Vegetable Insect Spray	Pyrethrin Rotenone	0.03 0.128	as labeled	Ortho
Tomato-Potato-Vegetable Insecticide/Fungicide Dust	Thiodan	5.6	Cover surfaces	Bonide
Tomato Vegetable Dust	Methoxychlor Rotenone	5 0.75	Cover surfaces	Ortho
Tomato-Vegetable Dust	Carbaryl	3.0	Cover surfaces or 8 T/gal	Bonide
Thuricide Microbial Insecticide	<i>B. thuringiensis</i>	0.8	1 T/gal	Acme
2% Systemic Granules	Di-Syston	2	1 tsp/row ft.	Acme
Vapam Soil Fumigant Solution	Metam Sodium	32.7	1 tsp in 8 oz/sq ft	Bonide
Vegetable-Floral Dust or Spray	Carbaryl Rotenone	1.25 0.50	Cover surfaces or 4 T/gal	Bonide
Vegetable Guard Soil Insect Killer	Diazinon	5	4 to 10 oz/500 sq ft	Ortho

\*Chemicals that require dilution are mixed with water.



## Registered Fungicides

Trade Name	Common Name	Formulation (Percent Active Ingredient)	Rate of Application*	Manufacturer
All Round Dust	Zineb	5.2	Cover surfaces	Acme
Bordeaux Mixture	Copper	12.75	2.5 oz/gal	Acme
Captan 50% WP	Captan	50	1.5 T/gal	Bonide
Copper Spray or Dust	Copper	7	2.25 to 2.75 oz/gal	Bonide
Cuke and Melon Dust	Copper	7	Cover surfaces or 4 T/gal	Bonide
Flotox Garden Sulfur	Sulfur	90	2.5 T/gal	Ortho
Flower-Vegetable 4-in-1 Spray	Dinocap (Karathane)	1.4	4 tsp/gal	Bonide
Garden Dust	Copper Sulfur	5 25	Cover surfaces or 8 T/gal Cover surfaces or 8 T/gal	Bonide
Liquid Copper Fungicide 4E	Copper	48	4 tsp/gal	Bonide
Maneb Tomato and Vegetable Fungicide	Maneb	80	1.5 to 2 T/gal	Acme
Orthocide Garden Fungicide	Captan	47.3	4 tsp/gal	Ortho
Red River Vegetable Spray	Zineb	38	2.5 T/gal	Acme
Rotenone-Copper Dust for Potato-Tomato-Vegetable Gardens	Copper	7	Cover surfaces or 4 T/gal	Bonide
Tomato and Vegetable Dust	Sulfur	20	1 lb/600 to 1,200 row ft.	Acme
Tomato-Potato-Vegetable Insecticide/Fungicide Dust	Maneb	5.6	30 to 33 lb/acre	Bonide
Tomato Vegetable Dust	Captan	4.7	Cover surfaces	Ortho
Tomato-Vegetable Dust	Maneb	4.8	Cover surfaces or 8 T/gal	Bonide
Vapam Soil Fumigant Solution	Metam Sodium	32.7	1 tsp/8 oz/sq ft	Bonide
Vegetable Disease Control	Chlorothalonil	29.6	2 tsp/gal	Ortho
Wettable Dusting Sulfur	Sulfur	95	Cover surfaces or 3 to 4 T/gal	Acme
Zineb 75 W	Zineb	75	1 T/gal	Acme

\*All chemicals that require dilution are mixed with water.

C = cup  
gal = gallon  
T = tablespoon  
tsp = teaspoon



MSU is an Affirmative Action/Equal Opportunity Institution. Cooperative Extension Service programs are open to all without regard to race, color, national origin, sex, or handicap.

Issued in furtherance of cooperative extension work in agriculture and home economics, acts of May 8, and June 30, 1914, in cooperation with the U.S. Department of Agriculture. Gordon E. Guyer, Director, Cooperative Extension Service, Michigan State University, E. Lansing, MI 48824.

This information is for educational purposes only. Reference to commercial products or trade names does not imply endorsement by the Cooperative Extension Service or bias against those not mentioned. This bulletin becomes public property upon publication and may be reprinted verbatim as a separate or within another publication with credit to MSU. Reprinting cannot be used to endorse or advertise a commercial product or company.

10:83—10M—Revision, destroy previous editions, TCM, MP, Price 80 cents. For sale only.  
File 27.34