

IPM-1306

# Home Garden Vegetables



Disease and Nematode Control Recommendations for 2013

## DISEASE CONTROL

The abundant selection of pesticides on the market for disease control in home vegetable gardens makes it difficult to recommend specific products by the manufacturers' trade names. Many products have the same active ingredient, making any one of them appropriate for a specific problem. However, different brands will vary in the percentage of active ingredient contained, so the user must consult the label for the amount of product to actually mix with water. Not all brands of a single fungicide are labeled for the same vegetables or the same diseases, which is why the user must consult the label to determine if the crop or disease is listed. Follow the label and follow all safety precautions. Also, new products may be added to the selection throughout the year. In addition, EPA restrictions and precautions are subject to change at any time, according to current research results.

For these reasons, the recommendations in Table 1 list only the common name (the active ingredient) of the pesticides suggested for each disease problem. Table 2 lists the various trade names available (at the time of publication) for each active ingredient. The trade name is the most prominent name on the package.

To use these recommendations, (1) look in Table 1 for the name of the vegetable and then the disease that you need to treat. There you will find the common names of recommended

products and comments specific to those products. (2) Look in Table 2 for the common name (or names) that were given in Table 1 for your problem. There you will find the trade name (or names) to shop for. When you shop, you may find other products available with the same active ingredient that are not listed in Table 2 because they have come on the market since the publication of this guide.

*It is very important that you carefully read and follow all directions, restrictions, and precautionary statements on the manufacturer's label before using any pesticide product.* The comments in Table 1 do not cover all the information needed for safe and effective use of the fungicides. You may also find information helpful in selecting the product you prefer to use.

Current insecticide, miticide, and disease control recommendations for commercial vegetable crops in Alabama can be found in the Southeastern U.S. Vegetable Crop Handbook, which is directed towards commercial vegetable farmers. Home gardeners may find its contents informative as well. Copies of this handbook can be downloaded by going to the following link: <http://www.thegrower.com/south-east-vegetable-guide/>

You will need Adobe Reader to download the different sections.

**Table 1. Home Garden Vegetables Fungicide Recommendations**

Disease	Fungicide Active Ingredient (Common Name)	Comments
<b>ASPARAGUS</b>		
<b>Cercospora Leaf Spot, Rust</b>		
	chlorothalonil	Spray ferns after harvest at first sign of disease. See label.
	mancozeb	
<b>Rust</b>		
	chlorothalonil	See label.
	wettable sulfur	
<b>BROCCOLI, BRUSSELS SPROUTS, CABBAGE, CAULIFLOWER</b>		
<b>Alternaria, Downy Mildew</b>		
	chlorothalonil	Apply at first sign of disease. Apply at 7-day intervals until disease is no longer a problem. See label.
	copper	
	mancozeb	
<b>Black Rot</b>		
	copper	Plant injury may occur. See label.

**Table 1. Home Garden Vegetables Fungicide Recommendations (cont.)**

Disease	Fungicide Active Ingredient (Common Name)	Comments
<b>BROCCOLI, BRUSSELS SPROUTS, CABBAGE, CAULIFLOWER (cont.)</b>		
<b>Powdery Mildew</b>		
liquid sulfur		Apply at first sign of disease. Repeat at 10-day intervals until disease is controlled. See label.
wettable sulfur		
<b>Yellows (Fusarium Wilt)</b>		
See Comments.		Use resistant varieties.
<b>CANTALOUPE</b>		
<b>Anthracnose, Downy Mildew, Gummy Stem</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. See label. Use resistant varieties.
mancozeb		
<b>Bacterial Wilt</b>		
See Comments.		This disease is spread by cucumber beetles.
<b>Powdery Mildew</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is controlled. Sulfur may injure plant tissue. See label.
sulfur		
<b>COLLARDS</b>		
<b>Black Rot</b>		
copper		Plant injury may occur. See label.
<b>Powdery Mildew</b>		
sulfur		<b>DO NOT</b> apply sulfur if temperatures are likely to exceed 90 °F. Plant injury may occur. See label.
<b>CUCUMBERS</b>		
<b>Anthracnose, Downy Mildew, Gummy Stem</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. Use resistant varieties.
mancozeb		
<b>Bacterial Wilt</b>		
See Comments.		This disease is spread by cucumber beetles.
<b>Powdery Mildew</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is controlled. Sulfur may injure plant tissue. See label.
sulfur dust		
<b>EGGPLANT</b>		
<b>Fruit Rots, Leaf Spots</b>		
copper		Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. See label.
mancozeb		
<b>IRISH POTATOES</b>		
<b>Early Blight, Late Blight</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 7- to 10-day intervals. Maintain adequate N, P, and K fertility levels.
copper		
mancozeb		
maneb		
<b>Scab</b>		
See Comments.		Use 2- to 3-year rotations and resistant or tolerant varieties. Maintaining soil pH at less than 5.6 will reduce all but acid scab on susceptible varieties.
<b>KALE</b>		
<b>Alternaria Leaf Spot, Downy Mildew</b>		
copper		Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. See label.

**Table 1. Home Garden Vegetables Fungicide Recommendations (cont.)**

Disease	Fungicide Active Ingredient (Common Name)	Comments
<b>LIMA BEANS, SNAP BEANS</b>		
<b>Anthracnose, Downy Mildew</b>		
	chlorothalonil	Apply at first sign of disease. Repeat at 7-day intervals until disease is no longer a problem. See label.
	copper	
	mancozeb	
	maneb	
<b>Bacterial Blight, Cercospora Leaf Spot</b>		
	copper	See label.
<b>Botrytis (Gray Mold)</b>		
	chlorothalonil	See label.
	thiophanate-methyl	<b>DO NOT</b> apply after full bloom. See label.
<b>Rust</b>		
	chlorothalonil	See label.
	sulfur	
	mancozeb	Apply at first sign of disease. Apply at 7-day intervals until disease is no longer a problem. See label.
<b>Powdery Mildew, Rust</b>		
	liquid sulfur	Apply at first sign of disease. Repeat at 10-day intervals. For mildew, repeat at 14-day intervals. See label.
	sulfur dust	
<b>Seedling Disease, Stem Rot (<i>Rhizoctonia</i>)</b>		
	PCNB (pentachloronitobenzene)	See label.
<b>White Mold (<i>Sclerotinia</i>)</b>		
	PCNB (pentachloronitobenzene)	See label.
	thiophanate-methyl	See label.
<b>MUSTARD GREENS</b>		
<b>Alternaria Leaf Spot, Black Rot, Downy Mildew</b>		
	copper	Plant injury may occur. See label.
<b>Powdery Mildew</b>		
	sulfur	<b>DO NOT</b> apply sulfur if temperatures are likely to exceed 90°F. Plant injury may occur. See label.
<b>OKRA</b>		
<b>Leaf Spots</b>		
	chlorothalonil	See label.
	copper	
<b>PEPPERS</b>		
<b>Anthracnose, Cercospora</b>		
	chlorothalonil	Apply at first sign of disease. Repeat at 10-day intervals. See label.
<b>Bacterial Spot</b>		
	copper	Tank-mix copper with maneb for best possible control. Spray more frequently under wet conditions. See label.
	copper + maneb	
<b>Powdery Mildew</b>		
	wettable sulfur	Apply at first sign of disease. <b>DO NOT</b> apply sulfur if temperatures are likely to exceed 90°F. Plant injury may occur. See label.
<b>Southern Blight</b>		
	PCNB (pentachloronitobenzene)	See label. Remove infected plants from garden and discard them as soon as disease is positively identified.

**Table 1. Home Garden Vegetables Fungicide Recommendations (cont.)**

Disease	Fungicide Active Ingredient (Common Name)	Comments
<b>PUMPKIN</b>		
<b>Anthracnose, Cercospora, Downy Mildew, Gummy Stem</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 7- to 10-day intervals. See label.
<b>Powdery Mildew</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is controlled. Sulfur may injure plant tissue. See label.
sulfur dust		
<b>Viruses</b>		
See Comments.		Viruses are spread by insects, usually aphids. Plant earlier in the season to avoid high insect populations. Row covers provide early-season protection. Plant resistant varieties when available.
<b>SOUTHERN PEAS</b>		
<b>Anthracnose, Cercospora, Downy Mildew, Rust, Scab</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. See label.
<b>Powdery Mildew, Rust</b>		
sulfur dust		Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. See label.
<b>Root Rots</b>		
See Comments.		Avoid fields with low spots that remain excessively wet. Plant early-maturing varieties.
<b>SQUASH</b>		
<b>Anthracnose, Cercospora, Downy Mildew, Gummy Stem, Scab</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 7- to 10-day intervals. See label.
mancozeb		
<b>Powdery Mildew</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 10-day intervals until disease is controlled. Sulfur may injure plant tissue. See label.
sulfur dust		
<b>Viruses</b>		
See Comments.		Viruses are spread by insects, usually aphids and cucumber beetles on squash. Plant earlier in the season to avoid high insect populations. Row covers provide early-season protection. Plant resistant varieties when available.
<b>SWEET POTATOES</b>		
<b>Black Rot, Scurf, Stem Rot</b>		
See Comments.		Use disease-free seed roots.
<b>TOMATOES</b>		
<b>Bacterial Canker, Bacterial Speck, Bacterial Spot</b>		
copper		Tank-mix copper with mancozeb for best possible control of bacterial diseases. Spray more frequently under wet conditions. See label.
copper + mancozeb		
<b>Early Blight, Late Blight, Septoria Leaf Spot</b>		
chlorothalonil		Apply at first sign of disease. Repeat at 7- to 10-day intervals. Use mefenoxam + chlorothalonil for late blight <b>ONLY</b> See label. Maintain adequate N, P, and K fertility levels. Plant resistant varieties when available.
copper		
mancozeb		
<b>Fusarium Wilt, Root Knot Nematodes, Verticillium Wilt</b>		
See Comments.		Plant resistant (VFN) varieties.
<b>Southern Blight</b>		
PCNB (pentachloronitobenzene)		See label. Remove infected plants from garden and discard them as soon as disease is positively identified.

**Table 1. Home Garden Vegetables Fungicide Recommendations (cont.)**

Disease	Fungicide Active Ingredient (Common Name)	Comments
<b>TURNIP GREENS</b>		
<b>Alternaria Leaf Spot, Black Rot, Downy Mildew</b>		
	copper	Plant injury may occur. See label.
<b>Powdery Mildew</b>		
	sulfur dust	<b>DO NOT</b> apply sulfur if temperatures are likely to exceed 90°F. Plant injury may occur. See label.
<b>WATERMELON</b>		
<b>Anthracnose, Downy Mildew, Gummy Stem</b>		
	chlorothalonil	Apply at first sign of disease. Repeat at 10-day intervals until disease is no longer a problem. See label. Use resistant varieties.
	copper	
	mancozeb	
<b>Fusarium Wilt</b>		
	See Comments.	Plant resistant varieties. <b>DO NOT</b> plant watermelons in the same site more frequently than once every 5 years.
<b>ALL VEGETABLES</b>		
<b>Postharvest Rots</b>		
	sodium hypochlorite (6% commercial bleach)	Available as Clorox bleach or other commercial household brands.

**Table 2. Common Names (Active Ingredients) and Trade Names of Some Recommended Garden Fungicides**

Common Name	Trade Name (Product Manufacturer)
Chlorothalonil	Bonide Fungonil Fungicide (Bonide)
	Bonide Fungonil Multi-Purpose Fungicide (Bonide)
	Bravado Fungicide
	Daconil 2787 Plant Disease Control (Dragon)
	Daconil 2787 Multi-Purpose Fungicide (Ortho)
	Daconil Lawn, Vegetable and Flower Fungicide (Daconil)
	Daconil Lawn, Vegetable and Flower Fungicide (Hi-Yield)
	Fertilome Broad Spectrum Landscape and Garden Fungicide (Fertilome)
	Fertilome Broad Spectrum Lawn and Garden Fungicide (Fertilome)
	Fertilome Broad Spectrum Liquid Fungicide (Fertilome)
	Fertilome Liquid Fungicide (Fertilome)
	Fertilome Triple Action (Fertilome)
	Fruit Tree, Vegetable and Ornamental Fungicide
	Fungi-gard (Security)
	Fungonil Concentrate (Bonide)
	Fungonil RTU (Bonide)
	Garden Tech Daconil Fungicide
	Gordon's Multipurpose Fungicide (Gordon's)
	Green Charm Multipurpose Fungicide
	GroTec Pennington Multipurpose Fungicide (Pennington)
	Hi-Yield Daconil Lawn, Vegetable, and Flower Fungicide (Hi-Yield)
	Hi-Yield Home and Garden Fungicide (Hi-Yield)
	Hi-Yield Vegetable, Flower, Fruit, and Ornamental Fungicide (Hi-Yield)
	Lawn and Garden Fungicide (Green Thumb—True Value)
	Lawn and Garden Spray (Rigo's Best)
	Liquid Fungicide (Fertilome)
	Liquid Ornamental and Vegetable Fungicide (Southern Ag)
	Multi-Purpose Fungicide (Green Care)
	Multi-Purpose Fungicide (ProCare Premium)
	Multi-Purpose Fungicide (Remingtons Pride)
	Ortho Disease B Gon Garden Fungicide (Ortho)
	Ortho Garden Disease Control (Ortho)
	Ortho MAX Garden Disease Control (Ortho)
	Ortho Multi-Purpose Fungicide (Ortho)
	Pennington Maxide Concentrate Multipurpose Fungicide (Pennington)
	Southern Ag Ornamental and Vegetable Flowable Fungicide (Southern Ag)
	Tiger Brand Multipurpose Fungicide
	Vegetable Disease Control (Ortho)

continued

**Table 2. Common Names (Active Ingredients) and Trade Names of Some Recommended Garden Fungicides (cont.)**

Common Name	Trade Name (Product Manufacturer)
Copper	Acme Bordeaux Mixture (Acme)
Copper is effective against bacteria, powdery mildew, and downy mildew. Against other fungal diseases copper is less effective than other fungicides. Copper products are listed for some of these diseases for gardeners wishing to follow an organic program.	Acme Copper Fungicide (Acme)
	Blackleaf Bordeaux Powder (Blackleaf)
	Bonide Copper Spray or Dust (Bonide)
	Bonide Liquid Copper Fungicide (Bonide)
	Copper Count RTU (Bonide)
	Copper Dragon Tomato and Vegetable Dust (Dragon)
	Copper Fungicide (Dragon)
	Concern Copper Soap Fungicide (Safer)
	Cueva Copper Soap Fungicide (Lilly Miller)
	Dragon Copper Fungicide (Dragon)
	Gordon's Bordeaux Mixture (Gordon's)
	Hi-Yield Bordeaux Mix Fungicide (Hi-Yield)
	Hi-Yield Copper Fungicide (Hi-Yield)
	Kocide 101 (Griffin)
	Kocide DF (Griffin)
	Kop-R-Spray (Lilly Miller)
	Liqui-Cop (Monteray)
	Liquide Copper Concentrate (Bonide)
	Liquid Copper Fungicide (Southern Ag. Insecticides, Inc.)
	Murphy Traditional Copper Fungicide (Murphy)
	Ortho Copper Fungicide (Ortho)
	Ortho Disease B Gon Copper Fungicide (Ortho)
	SA-50 Southern Ag Liquid Copper Fungicide (Southern Ag)
Southern Ag Neutral Copper Fungicide (Southern Ag)	
Southern Ag Tomato Dust (Southern Ag)	
Southern Ag Liquid Copper Fungicide (Southern Ag)	
Mancozeb	Acme Tomato, Fruit and Vegetable Fungicide (Acme)
	Bonide Mancozeb Flowable with Zinc (Bonide)
	Bonide Mancozeb Pint (Bonide)
	Bonide Mancozeb Plant Fungicide (Bonide)
	Bonide Manzate Flowable (Bonide)
	Dithane 945 (Bio)
	Dithane M-45 (Southern Ag)
	Dragon Mancozeb Disease Control (Dragon)
	Fore Fungicide (Fore)
	Green Light Maneb Plus (Green Light)
	Lawn And Vegetable Disease Control (Dragon)
	Mancozeb Disease Control (Dragon)
	Mancozeb Flowable with Zinc Concentrate (Bonide)
	Mancozeb Fungicide (Bonide)
	Southern Ag Dithane M-45 (Southern Ag)
Maneb	Acme Maneb Tomato and Vegetable Fungicide (Acme)
	Earl May Tomato Blight Control (Earl May)
	Earl May Tomato and Vegetable Dust (Earl May)
	Gordon's Maneb Tomato and Vegetable Fungicide (Gordon's)
	Hi-Yield Maneb Garden Fungicide (Hi-Yield)
	Hi-Yield Maneb Lawn and Garden Fungicide (Hi-Yield)
	Maneb Lawn And Garden Fungicide (Hi-Yield)
PCNB pentachloronitobenzene	SA-50 Terraclor 75% WP (Southern Ag)
	Terraclor (Uniroyal)
	Terraclor 75% WP Soil Fungicide (Olin)

continued

**Table 2. Common Names (Active Ingredients) and Trade Names of Some Recommended Garden Fungicides (cont.)**

Common Name	Trade Name (Product Manufacturer)
Sulfur	Bonide Liquid Sulfur (Bonide)
	Bonide Sulfur Plant Fungicide (Bonide)
	Dusting Wettable Sulfur (Hi-Yield)
	Fert-i-Lome Dusting Sulfur (Ferti-lome)
	Green Light Wettable Dusting Sulfur (Green Light)
	Green Sulphur 225G
	Hi-Yield Dusting Wettable Sulfur (Hi-Yield)
	Lilly Miller Sulfur Dust (Lilly Miller)
	Microthiol Disperss (Elf-Atochem)
	Rose Flower and Vegetable Dust (Ferti-lome)
	Safer Brand Garden Fungicide (Safer)
	Safer Garden Fungicide (Safer)
	Southern Ag Wettable or Dusting Sulfur (Southern AG)
	Sulfur Dust (Bonide)
	Tiger Brand Sulfur
	Tomato Vegetable Dust (KGRO—K-Mart)
Wettable or Dusting Garden Sulfur (Dragon)	
Wettable or Dusting Sulfur (Southern Ag)	
Thiophanate-methyl	Topsin-M (Elf-Atochem)

**Table 3. Selected Manufacturers' Web Sites**

Product	Web site
Bonide products	<a href="http://www.bonideproducts.com">www.bonideproducts.com</a>
Southern Ag	<a href="http://www.southernag.com">www.southernag.com</a>
Fert-i-lome and Hi-Yield	<a href="http://www.fertilome.com">www.fertilome.com</a> or <a href="http://www.v-p-g.com">www.v-p-g.com</a>
Monterey Lawn and Garden	<a href="http://www.montereylawnandgarden.com">www.montereylawnandgarden.com</a>
Safer Brand	<a href="http://www.saferbrand.com">www.saferbrand.com</a>



## NEMATODE CONTROL

All vegetables can be affected by nematodes. Root-knot nematode is the most common plant pathogenic nematode found in the home garden in Alabama.

Use root-knot resistant varieties when available; root-knot resistant varieties are most common for tomato. For nematode control use Chitin (Hi-Yield Nem-A-Cide Nematode Control).

**Table 4. Growth Habit and Disease Resistance of Tomato Varieties**

Variety	Growth Habit	Disease Resistance
Atkinson	I	F, N
Early Girl (4-6 oz.)	I	V, F
Better Boy (12-16 oz.)	I	V, F, N, AS, St
Celebrity (7-8 oz.)	D	V, F <sub>1,2</sub> , N, TMV, AS, St
Park's Whopper	I	V, F, N, TMV
Park's Whopper Improved (12 oz.)	I	V, F <sub>1,2</sub> , N, TMV
Big Beef (10-12 oz.)	I	AS, F <sub>1,2</sub> , L, N, TMV, V, St
BHN-444 (8 oz.)	D	F <sub>1,2</sub> , V, TSWV, TMV
BHN-640	D	TSWV, V, F <sub>1,2</sub> , N, TMV, AS, St
Amelia (7-8 oz.)	D	TSWV, F <sub>1,2,3</sub> , V, N, St
Floralina	D	F <sub>1,2,3</sub> , V <sub>1</sub> , AS, St
Florida 47 (8 oz.) heat set	D	AS, V <sub>1</sub> , F <sub>1,2</sub> , St
Florida 91 (8 oz.) heat set	D	AS, St, V, F <sub>1,2</sub>
Mountain Fresh Plus	D	F <sub>1,2,3</sub> , N, TMV, V <sub>1,2</sub> , EB
Mountain Spring (9 oz.)	D	V, F <sub>1,2</sub> , St
Mountain Crest (10-12 oz.)	D	V, F <sub>1,2</sub>
Quincy	D	F <sub>1,2</sub> , V, TSWV
Crista	D	V <sub>1</sub> , F <sub>1,2,3</sub> , TSWV, N
Beefmaster (12-16 oz.)	I	V, F, N, AS, St
First Lady II (5-6 oz.)	I	AS, F <sub>1,2</sub> , N, TMV, V
Sun Leaper (8-10 oz.) heat set	D	F <sub>1,2</sub> , St, V
Burpee's Big Boy (12-16 oz.)	I	—
Patio (4 oz.) containers	D	F <sub>1</sub> , AS, St
Solar Fire (8-10 oz.) heat set	D	V, F <sub>1,2,3</sub> , St
Quick Pick (6-8 oz.)	I	V, F <sub>1,2</sub> , N, TMV
Estiva	I	F <sub>1,2</sub> , TMV, V
<b>CHERRY TYPE</b>		
Cherry Grande	D	F <sub>1</sub> , V, ASC, St
Sun Gold (orange)	I	F, TMV
Super Sweet 100 (1 oz.)	I	V, F <sub>1</sub>
New Pearl	I	F <sub>1</sub>
Summer Sweet	I	TMV, F <sub>1</sub>
<b>GRAPE TYPE</b>		
Cupid (0.5-1 oz.)	I	F <sub>1</sub> , AS, St, BKS
Jolly Elf (0.5-0.75 oz.)	D	V, F <sub>2</sub>
Juliet (1 oz.)	I	F <sub>1</sub>

continued

**Table 4. Growth Habit and Disease Resistance of Tomato Varieties (cont.)**

Variety	Growth Habit	Disease Resistance
<b>VARIETIES WITH COLORED FRUIT</b>		
Lemon Boy (yellow) (7 oz.)	I	V, F, N, AS, ST
Carolina Gold (golden yellow) (8 oz.)	D	F <sub>1,2,3</sub>
Jubilee (golden) (8 oz.)	I	AS
<b>PASTE TOMATOES</b>		
Roma	D	V, F, N, AS
Plum Dandy	D	EB, F
Muriel (4 oz.)	D	V, F <sub>1,2</sub> , N, AS, BKS, TSWV
BHN-685 (4-5 oz.)	D	F <sub>1,2,3</sub> , TSWV
BHN-410	D	BKS, V, F <sub>1,2</sub>
Viva Italia	D	V, F, N, BKS, St

**Disease and Pest Resistance Key**

F or F <sub>1</sub> =Fusarium Wilt Race 1	N=Nematodes
F <sub>2</sub> =Fusarium Wilt Race 2	TMV=Tobacco Mosaic Virus
F <sub>3</sub> =Fusarium Wilt Race 3	TSWV=Tomato Spotted Wilt Virus
V=Verticillium Wilt	AS=Alternaria Stem Canker
St=Stemphylium (gray leaf spot)	BKS=Bacterial Speck
EB=Early Blight	

**Growth Habit**

I=Indeterminate (climbing, fruit ripens over an extended period of time)

D=Determinate (bush type, fruit ripens in a concentrated time period)

Originally prepared by Tony Glover; updated by Chip East

Home Garden Vegetables: Disease and Nematode Control prepared by Edward Sikora, *Extension Plant Pathologist*, Professor, Entomology and Plant Pathology, Auburn University.

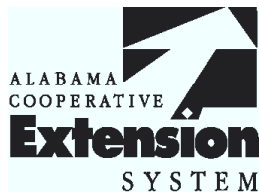
For more information on pesticides, pesticide safety, or submitting samples for analysis, see the following publications in the IPM series:

**IPM 1293, "Safety."** Safety contact information; worker protection standards; the safe use, handling, and storage of pesticides

**IPM 1294, "Submitting Samples."** Procedures for submitting samples for diagnosis, analysis, and identification

**IPM 1295, "General Pesticide Information."** Federal and state restricted use pesticide lists; pesticides and water quality





### 2013 IPM-1306

**For more information**, contact your county Extension office. Visit [www.aces.edu/counties](http://www.aces.edu/counties) or look in your telephone directory under your county's name to find contact information.

---

Use pesticides **only** according to the directions on the label. Follow all directions, precautions, and restrictions that are listed. Do not use pesticides on plants that are not listed on the label

---

The pesticide rates in this publication are recommended **only** if they are registered with the Environmental Protection Agency or the Alabama Department of Agriculture and Industries. If a registration is changed or canceled, the rate listed here is no longer recommended. Before you apply **any** pesticide, check with your county Extension agent for the latest information.

---

Trade names are used **only** to give specific information. The Alabama Cooperative Extension System does not endorse or guarantee any product and does not recommend one product instead of another that might be similar.

---

Published by the Alabama Cooperative Extension System (Alabama A&M University and Auburn University), an equal opportunity educator and employer.