

# Commercial Crop Production: Vegetables

## Integrated Vegetable Disease Management

Successful management of vegetable diseases requires a disease management program that integrates the use of resistant varieties, balanced soil fertility, irrigation water management, use of good cultural practices, weed and insect control, biocontrol and chemical control. Development and implementation of a disease management plan and good record keeping will increase the overall yield and success of the vegetable crop.

**Start with clean seed and/or certified disease-free transplants.** Many vegetable disease problems originate with seeds or transplants. Seeds should be purchased from reputable commercial seed companies, and if seeds have not been previously treated, these should be treated following the seed treatment recommendations provided in the Vegetable Seed Treatment section of this guide.

**Select resistant varieties.** The use of resistant varieties is one of the best management strategies in an integrated pest management program because they are inexpensive compared to the cost of fungicides and bactericides, and they provide seasonal management. Select resistant varieties based on the disease profile for your production region and soil.

**Use good cultural practices.** Cultural practices are defined as a broad set of techniques that are used to manipulate the environment to improve crop production. Examples of cultural practices that should be considered in an integrated disease management plan follow:

- **Select land suitable for vegetable production.** Start by selecting a site that is well-drained, has good air movement, gets at least six hours of sunlight each day and does not have a history of problems with soilborne diseases. Avoid land surrounded by large established trees. Tree roots that extend well beyond the extent of the limbs can exhaust water and nutrient resources that would otherwise be available to the vegetable crop. Some tree roots also produce a toxin (juglone) that causes toxicity in toxin-sensitive vegetables such as tomatoes, peppers, eggplant, potatoes, asparagus, cabbage and broccoli.
- **Have your soil tested.** Many pathogens that cause disease on plants live and survive for long periods of time in the soil. Soil temperature, moisture, pH and fertility all influence a pathogen's ability to survive and colonize plants. Have your soil tested annually to determine the pH, salts, nutrients and organic matter levels and water-holding capacity. For more information on how to sample, test and assess the quality of your soil contact the LSU AgCenter Soil Testing & Plant Analysis Laboratory. Tests are also available that can determine the population levels of some pathogens in the soil. Contact the LSU AgCenter Plant Diagnostic Center for more information on available pathogen tests.
- **Use high quality water for irrigation and other agricultural uses.** Untreated surface waters can harbor both plant and human pathogens. If practical, and economical, potable water should be used to irrigate vegetable crops, especially when crops are irrigated using overhead (sprinkler) irrigation systems. Water treatment and filtration practices should be adopted if surface water is the primary source of irrigation water. The timing and frequency of irrigation should also be considered to minimize the risk of disease development. Avoid overwatering and overhead irrigation. Water early in the day so that plants have an adequate amount of time to dry. Consider raised beds to reduce the amount of standing water in the rows.
- **Develop a four-year crop rotation cycle.** Crop rotations are an important component of an IPM program because they interrupt the life cycle of pathogens by placing the pathogens in a nonhost environment. Through this interruption the pathogens are unable to accumulate to levels that could cause significant levels of disease and crop losses. Over a four-year period, plant plants from a different plant family.

### Plant Diagnostic Center

LSU AgCenter  
Department of Plant Pathology & Crop Physiology  
302 Life Sciences Bldg.  
LSU Campus  
Baton Rouge, Louisiana 70803

**Phone:** 225-578-4562

**Fax:** 225-578-1415

**Website:** [www.lsuagcenter.com/plantdiagnostics](http://www.lsuagcenter.com/plantdiagnostics)

### Soil Test and Plant Analysis Lab

LSU AgCenter  
School of Plant, Environmental and Soil Sciences  
Baton Rouge, Louisiana 70803

**Phone:** 225-578-2110

**Fax:** 225-578-1403

**Website:** [www.lsuagcenter.com/soiltest](http://www.lsuagcenter.com/soiltest)

- **Use plastic and organic mulch.** Mulch serves as a barrier between the soil and plant tissue and reduces the amount of pathogen that can be splashed onto leaves, stems and fruit. Light-reflective plastic mulches can deter insects that transmit important viral diseases from landing on plants. Do not reuse plastic mulches. Organic mulches help to retain moisture in the soil and improve soil quality.
- **Use good sanitation practices.** By putting a strong emphasis on sanitation practices disease development can be significantly reduced resulting in less disease and ultimately less chemical usage. A good sanitation practice is any technique that eliminates a desirable place for the pathogen to survive and spread. Removal and destruction of crop debris, weeds and infected plants, and cleaning and disinfection of production tools and equipment are examples of good sanitation practices.

**Use registered biorational products.** Biorational products (products composed of beneficial microorganisms or their products) are viable alternatives to synthetic chemicals for managing diseases in many vegetable production systems. As with chemical pesticides, biorational products can't be used if they are not registered with the Environmental Protection Agency (EPA). Always read the label and follow all safety precautions provided in the label. Do not use biorationals on a nonlabeled crop. A list of biopesticides and fungicide alternatives for vegetables is provided in Table 5.

**Use registered chemicals.** Fungicides, bactericides and nematicides are important tools for managing diseases and their efficacy and efficiency can be enhanced when incorporated into an integrated disease management program. Pesticides should be used in a manner that minimizes the risk of a pathogen becoming resistant to a pesticide. Always applying mixtures of pesticides or alternate fungicides that have different modes of action to help reduce pesticide resistance development by the pathogen. More information on pesticide-resistance management strategies is provided in Section IV-ii of this guide. A list of fungicide mode of actions for fungicide resistance management in vegetables is provided in Table 6. Always read the label and follow all safety precautions provided in the label. Do not use pesticides on a nonlabeled crop. A list of selected pesticides with known efficacy to various pathogens that can cause disease on vegetables in Louisiana can be found in the tables on the following pages.

## Recommended pesticides, rates and pesticide use restrictions for selected vegetable crops.

The symbol <sup>OG</sup> indicates a pesticide that has been listed by the Organic Materials Review Institute (OMRI) as approved for use in organic production.

### Asparagus

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group (FRAC) <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Cercospora leaf spot or blight ( <i>Cercospora asparagi</i> )	chlorothalonil (various products)	M	2-4 lb	190	12 pt
Cercospora leaf spot or blight ( <i>Cercospora asparagi</i> )	mancozeb (various products)	M	See label	See label	See label
Cercospora leaf spot or blight ( <i>Cercospora asparagi</i> )	Dexter MAX	M3, 11	2-2.2 lb	180	See label
Crown and spear rot ( <i>Phytophthora</i> spp.)	chlorothalonil (various products)	M	2-4 pt	190	12 pt
Crown and spear rot ( <i>Phytophthora</i> spp.)	Ridomil Gold SL	4	1 pt	7	4 app
Crown and spear rot ( <i>Phytophthora</i> spp.)	Fosphite	33	3-4 qt	2	12 fl oz
Crown and spear rot ( <i>Phytophthora</i> spp.)	Phostrol	33	2.5-5.0 pt	0	7 app
Purple spot ( <i>Stemphylium</i> spp., <i>Pleospora</i> spp.)	azoxystrobin (various products)	11	6.0-15.5 fl oz	100	92 fl oz
Purple spot ( <i>Stemphylium</i> spp., <i>Pleospora</i> spp.)	chlorothalonil (various products)	M	2-4 pt	190	12 pt
Purple spot ( <i>Stemphylium</i> spp., <i>Pleospora</i> spp.)	Flint Extra	11	3-3.8 fl oz	180	3 app
Purple spot ( <i>Stemphylium</i> spp., <i>Pleospora</i> spp.)	Dexter MAX	M3, 11	2-2.2 lb	180	See label
Rust ( <i>Puccinia</i> spp.)	Rally 40W	3	5 oz	180	6 app
Rust ( <i>Puccinia</i> spp.)	mancozeb (various products)	3	See label	See label	See label
Rust ( <i>Puccinia</i> spp.)	Chlorothalonil 720SC	M	2-4 pt	90	12 pt
Rust ( <i>Puccinia</i> spp.)	sulfur <sup>OG</sup> 80%	M	20 lb	0	See label
Rust ( <i>Puccinia</i> spp.)	sulfur <sup>OG</sup> 90%	M	15 lb	0	See label
Rust ( <i>Puccinia</i> spp.)	sulfur <sup>OG</sup> 98%	M	45 lb	0	See label

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

## Basil

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora belbahrii</i> )	Adron	43	4 fl oz	1	12 fl oz
Downy mildew ( <i>Peronospora belbahrii</i> )	Ranman 400SC	21	2.75-3.0 fl oz	0	27 fl oz
Downy mildew ( <i>Peronospora belbahrii</i> )	Regalia <sup>OG</sup>	P5	0.5-1 qt	0	See Label
Downy mildew ( <i>Peronospora belbahrii</i> )	Confine Extra	33	1 to 3 qt/20 to 100 gal	0	See Label
Downy mildew ( <i>Peronospora belbahrii</i> )	K-Phite	33	1-3 qt/100 gal	0	See Label
Downy mildew ( <i>Peronospora belbahrii</i> )	Fosphite	33	3-4 pt/100 gal	0	See Label
Downy mildew ( <i>Peronospora belbahrii</i> )	ProPhyt	33	4 fl oz	0	See Label
Downy mildew ( <i>Peronospora belbahrii</i> )	Presidio	43	8 fl oz	1	12 fl oz
Downy mildew ( <i>Peronospora belbahrii</i> )	Revus	40	3-12 oz	1	32 fl oz
Downy mildew ( <i>Peronospora belbahrii</i> )	Actinovate AG <sup>OG</sup>	See Label	See Label	0	See Label
Leaf spots ( <i>Alternaria</i> spp., <i>Botrytis</i> spp., <i>Fusarium</i> spp.)	Luna Privilege	7	6.84 fl oz	14	13.7 fl oz
Leaf spots ( <i>Alternaria</i> spp., <i>Botrytis</i> spp., <i>Fusarium</i> spp.)	Luna Sensation	7, 11	5-7.6 fl oz	7	15.3 fl oz
Leaf spots ( <i>Alternaria</i> spp., <i>Botrytis</i> spp., <i>Fusarium</i> spp.)	Switch 62.5WG	9, 12	11-14 oz	7	56 fl oz
Fusarium wilt and Pythium and Rhizoctonia root rots	Confine Extra	33	1 to 3 qt/20 to 100 gal	0	See Label
Fusarium wilt and Pythium and Rhizoctonia root rots	K-Phite	33	2 to 3 qt/20 to 100 gal	0	See Label
Fusarium wilt and Pythium and Rhizoctonia root rots	Fosphite	33	1-3 qt/100 gal	0	See Label
Fusarium wilt and Pythium and Rhizoctonia root rots	ProPhyt	33	3-4 pt/100 gal	0	See Label

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

**Beans (Snap and Dry)**

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Inspire Super <sup>5</sup>	3, 9	16-20 fl oz	14	80 fl oz
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Quilt	11, 3	14 fl oz	7	3 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Quilt Xcel	11, 37	10.5-14 fl oz	7	3 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Priaxor Xenium	11	4-8 fl oz	7	2 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Fontelis	7	14-30 oz	0	72 fl oz
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Quadris Flowable	11	6.2-15.4 fl oz	0	92 fl oz
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Headline 2.09	11	6-9 fl oz	7	2 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Actinovate AG <sup>OG</sup>	NA	3-12 oz	0	NA
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Inspire Super <sup>5</sup>	11	16-20 fl oz	14	80 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Aproach <sup>5</sup>	11	6-12 fl oz	7	24 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Bravo Ultrex	M	1.25-1.8 lb	7	7.3 lb
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Bravo WeatherStix	M	1.375-2 pt	7	8 pt
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Topsin M 70WP	1	1.5-2 lb	14	4 lb
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Incognito 4.5F	1	30-40 fl oz	14	80 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	85WDG <sup>5</sup>	1	0.8-1.6 lb	28	3.2 lb
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	85WDG <sup>6</sup>	1	0.8-1.6 lb	14	3.2 lb
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Quilt	11, 3	14 fl oz	7	42 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Quilt Xcel	11, 3	10.5-14 fl oz	7	42 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Priaxor Xenium	7, 11	4-8 fl oz	7	2 apps
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Fontelis	7	14-30 fl oz	7	72 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Quadris Flowable	11	6-15.5 fl oz	0	4 app
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Quadris Opti <sup>5</sup>	11, M	1.6-2.4 pt	0	4 app
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Headline 2.09 <sup>5</sup>	11	6-9 fl oz	21	2 app
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Headline 2.09 <sup>6</sup>	11	6-9 fl oz	7	2 app
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Tilt	3	4 fl oz	7	12 fl oz
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Cueva <sup>OG</sup>	M	0.2-2 gal	NA	NA
Anthracoze ( <i>Colletotrichum lindemuthianum</i> )	Nordox 75WG <sup>OG</sup>	M	0.66-2.5 lb	NA	NA

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Kocide 3000	M	0.5-1.25 lb	0	15.8 lb
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Kocide 2000	M	0.75-2.25 lb	0	13.5 lb
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Champ WG <sup>OG</sup>	M	1.58 lb	7	9.48 lb
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Nu-Cop 50DF	M	1-1.5 lb	7	9 lb
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Badge SC	M	1-2 pt	7	16.6 pt
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Badge X2 <sup>OG</sup>	M	0.5-1.25 lb	7	2.65 lb
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Cuprofix-Ultra 40	M	0.75-2 lb	See Label	11.19 lb
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Cuproxat	M	1.5-3.9 pt	See Label	23.4 pt
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	NA	NA
Halo and common blight ( <i>Pseudomonas phaseolicola</i> , <i>Xanthomonas phaseoli</i> )	Nordox 75WG <sup>OG</sup>	M	0.6-2.5 lb	NA	NA
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Rovral 4 Flowable	2	1.5-2 pt	14	2 app
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Topsin M 70WP	1	1.5-2 lb	14	4 lb
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Incognito 4.5F	1	30-40 fl oz	14	80 fl oz
Botrytis gray mold ( <i>Botrytis cinerea</i> )	85WDG <sup>5</sup>	1	0.8-1.6 lb	28	3.2 lb
Botrytis gray mold ( <i>Botrytis cinerea</i> )	85WDG <sup>6</sup>	1	0.8-1.6 lb	14	3.2 lb
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Fontelis	7	14-30 oz	7	72 fl oz
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Endura	7	8-11 oz	7	2 app
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Cannonball 50WP	12	7 oz	7	28 oz
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Switch 62.5WG	12, 9	11-14 oz	2	56 oz
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Bravo Ultrex <sup>6</sup>	M	2.7 lb	7	10.9 lb
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Bravo WeatherStik <sup>6</sup>	M	3 lb	7	12 pt
Botrytis gray mold ( <i>Botrytis cinerea</i> )	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	NA	NA
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold PC GR	4, 14	0.75 lb/11	NA	1 app
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	0.5-1.0 pt/12	NA	1 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Damping-off ( <i>Pythium</i> spp.)	MetaStar 2E	4	2-4 pt12	NA	1 app
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	1-2 pt12	NA	1 app
Damping-off ( <i>Pythium</i> spp.)	Uniform	4, 11	0.34 fl. Oz11	NA	1 app
Damping-off ( <i>Rhizoctonia solani</i> )	Quadris 2.08F	11	0.4-0.8 fl oz11	NA	1 app
Damping-off ( <i>Rhizoctonia solani</i> )	Headline	11	0.1-0.8 fl oz11	NA	1 app
Damping-off ( <i>Rhizoctonia solani</i> )	Blocker 4F	14	2.2-3.3 pt11	NA	1 app
Damping-off ( <i>Rhizoctonia solani</i> )	Uniform	4, 14	0.34 fl oz11	NA	1 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Aproach <sup>5</sup>	11	6-12 fl oz	7	24 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Bravo Ultrex <sup>6</sup>	M	1.25-1.8 lb	7	7.3 lb
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Bravo WeatherStik <sup>6</sup>	M	1.375-2 pt	7	8 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Fontelis	7	14-30 fl oz	0	72 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	azoxystrobin	11	6.2-15.4 fl oz	0	4 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Quadris Opti <sup>5</sup>	11, M	1.6-2.4 pt	7	4 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Headline <sup>5</sup>	11	6-9 fl oz	21	2 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Headline <sup>6</sup>	11	6-9 fl oz	7	2 app
Rhizocontia web blight and Pod tip rot ( <i>Rhizoctonia solani</i> )	Rally 40WSP <sup>6,7</sup>	3	4-5 oz	0	20 oz
Rhizocontia web blight and Pod tip rot ( <i>Rhizoctonia solani</i> )	Tilt	3	4 fl oz	7	12 fl oz
Rhizocontia web blight and Pod tip rot ( <i>Rhizoctonia solani</i> )	azoxystrobin (various products)	11	6-15.5 fl oz	0	4 app
Rhizocontia web blight and Pod tip rot ( <i>Rhizoctonia solani</i> )	Quadris Opti <sup>5</sup>	11, M	1.6-2.4 fl oz	7	4 app
Rhizocontia web blight and Pod tip rot ( <i>Rhizoctonia solani</i> )	Quilt	11, 3	14 fl oz	7	42 fl oz
Rhizocontia web blight and Pod tip rot ( <i>Rhizoctonia solani</i> )	Quilt Xcel	11, 3	10.5-14 fl oz	7	42 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> )	Endura	7	8-11 oz	7	2 app
Powdery mildew ( <i>Erysiphe polygoni</i> )	Priaxor Xenium	7, 11	4-8 fl oz	7	2 app
Powdery mildew ( <i>Erysiphe polygoni</i> )	Fontelis	7	14-30 oz	0	72 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> )	Headline <sup>5</sup>	11	6-9 fl oz	21	2 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Erysiphe polygoni</i> )	Headline <sup>6</sup>	11	6-9 fl oz	7	2 app
Powdery mildew ( <i>Erysiphe polygoni</i> )	Fosphite	33	1-3 qt/100 gal	0	NA
Powdery mildew ( <i>Erysiphe polygoni</i> )	sulfur 80% <sup>OG</sup>	M	20 lb	0	NA
Powdery mildew ( <i>Erysiphe polygoni</i> )	sulfur 90% <sup>OG</sup>	M	15 lb	0	NA
Powdery mildew ( <i>Erysiphe polygoni</i> )	sulfur 98% <sup>OG</sup>	M	45 lb	0	NA
Powdery mildew ( <i>Erysiphe polygoni</i> )	Armcarb 100 <sup>OG</sup>	NA	2.5-5 lb	0	NA
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Aproach <sup>5</sup>	11	6-12 fl oz	7	24 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Proline 480SC <sup>5,8</sup>	3	5.7 fl oz	7	17 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Rally 40WSP	3	4-5 oz	0	20 oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Folicur 3.6F <sup>5</sup>	3	4-6 fl oz	7	12 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Folicur 3.6F <sup>6</sup>	3	4-6 fl oz	7	24 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Quilt 1.66SC	3, 11	14 fl oz	7	3 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Priaxor Xenium	7, 11	4-8 fl oz	7	2 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Fontelis	7	14-30 oz	0	72 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	azoxystrobin (various products)	11	6.2-15.4 fl oz	0	4 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Quadris Opti <sup>5</sup>	11, M	1.6-2.4 pt	7	4 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Headline <sup>5</sup>	11	6-9 fl oz	21	2 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Headline <sup>6</sup>	11	6-9 fl oz	7	2 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Bravo Ultrex <sup>5</sup>	M	1.25-1.8 lb	7	4 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Bravo WeatherStix <sup>5</sup>	M	1.375-2 pt	7	8pt
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Bravo Ultrex <sup>6</sup>	M	1.25-2.7 lb	7	10.9 lb
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces appendiculatis</i> )	Bravo WeatherStix <sup>6</sup>	M	1.375-3 pt	7	12 pt
White mold ( <i>Sclerotinia sclerotiorum</i> )	Botran 75W <sup>6</sup>	14	2.5-4 lb	2	5.3 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Cannonball WG	12	7 oz	7	28 oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Endura	7	6-9 oz	21	2 apps
White mold ( <i>Sclerotinia sclerotiorum</i> )	Fontelis	7	16-30 fl oz	0-14 <sup>10</sup>	72 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Iprodione 4L AG	2	1.5-2 pt	14	2 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Rovral 4F	2	1.5-2 pt	14	2 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Meteor	2	1.5-2 pt	14	2 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
White mold ( <i>Sclerotinia sclerotiorum</i> )	Nevado 4F	2	1.5-2 pt	14	2 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Omega 500SC <sup>9</sup>	29	0.5-0.9 pt	14	1.8 pt
White mold ( <i>Sclerotinia sclerotiorum</i> )	Omega 500SC <sup>5</sup>	29	0.5-0.9 pt	30	1.8 pt
White mold ( <i>Sclerotinia sclerotiorum</i> )	Priaxor Xenium <sup>5</sup>	7, 11	4-8 fl oz	21	16 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Priaxor Xenium <sup>9</sup>	7, 11	4-8 fl oz	7	16 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Proline 480SC <sup>5,8</sup>	3	5.7 fl oz	7	17.1 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Switch 62.5WG	9, 12	11-14 oz	7	56 oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	85WDG <sup>9</sup>	1	1.2-1.6 lb	14	3.2 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	85WDG <sup>5</sup>	1	1.2-1.6 lb	28	3.2 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Incognito 4.5F <sup>9</sup>	1	30-40 fl oz	14	80 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Incognito 4.5F <sup>5</sup>	1	30-40 fl oz	28	80 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Topsin M 70WDG <sup>9</sup>	1	1.5-2 lb	14	4 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Topsin M 70WDG <sup>5</sup>	1	1.5-2 lb	28	4 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Vertisan	7	16-20 fl oz	21	41 fl oz

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Dry Beans Only

<sup>6</sup> Snap beans

<sup>7</sup> Pod tip rot

<sup>8</sup> White Mold

<sup>9</sup> Succulent

<sup>10</sup> For head and stem applications the postharvest interval (PHI) is 0 days. For leafy greens the PHI is 14 days.

<sup>11</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

<sup>12</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

## Cole Crops (Broccoli, Brussels sprouts, Cabbage, Cauliflower, Chinese Cabbage and Kohlrabi)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Cabrio	11	12-16 oz	0	64 oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Bravo Ultrex	M	1.4 lb	7	14.5 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Bravo WeatherStix	M	1.5 pt	7	11.7 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Kocide 3000	M	0.5-1.25 lb	0	15.8 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Kocide 2000	M	0.75-2.25 lb	0	13.5 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Champ WG <sup>OG</sup>	M	1.58 lb	7	9.48 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Nu-Cop 50DF	M	1 lb	7	5 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Badge SC	M	1-2 pt	7	16.6 pt
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Badge X2 <sup>OG</sup>	M	0.5-1.25 lb	7	2.65 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Cuprofix-Ultra 40	M	0.75-2 lb	NA	11.19 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Cuproxat	M	1.5-3.9 pt	NA	23.4 pt
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	NA	NA
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Nordox 75WG <sup>OG</sup>	M	0.6-2.5 lb	NA	NA
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Endura	7	6-9 oz	0	2 app
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Fontelis	7	14-30 fl oz	0	72 fl oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Inspire SuperLuna Privilege	3, 97	16-20 fl oz	7	2 app
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Luna Sensation	7, 11	4-6.8 fl oz	0	13.7 fl oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	ManKocide	M	5.0-7.6 fl oz	0	15.3 fl oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Manzate Pro-Stik <sup>5</sup>	M	1-3 lb	7	80 fl oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Milstop <sup>OG</sup>	M	1.6-2.1 lb	7	12.8 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Procure 480SC	3	2-5 lb/100 gal	7	8.8 lb
Alternaria leaf spot ( <i>Alternaria</i> spp.)	azoxystrobin (various products)	11	6-8 fl oz	3	2 app
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Quadris Top	3, 11	12-14 fl oz	1	56 fl oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Reason 500SC	11	5.5-8.2 fl oz	2	24.6 fl oz
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Serenade ASO <sup>OG</sup>	44	2-4 qt	NA	NA
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Serenade Max <sup>OG</sup>	44	1-3 lb	NA	NA
Alternaria leaf spot ( <i>Alternaria</i> spp.)	Switch 62.5WG	9, 12	11-14 oz	7-10	2 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Basal stem rot, Phytophthora root rot ( <i>Phytophthora</i> spp.) and Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1-2 pt <sup>6</sup>	See Label	1 app
Basal stem rot, Phytophthora root rot ( <i>Phytophthora</i> spp.) and Damping-off ( <i>Pythium</i> spp.)	Presidio 4F	43	3-4 fl oz	2	4 app
Basal stem rot, Phytophthora root rot ( <i>Phytophthora</i> spp.) and Damping-off ( <i>Pythium</i> spp.)	MetaStar 2E	4	4-8 pt <sup>6</sup>	See Label	1 app
Basal stem rot, Phytophthora root rot ( <i>Phytophthora</i> spp.) and Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	2-4 pt <sup>6</sup>	See Label	1 app
Black leg ( <i>Phoma lingam</i> )	Cabrio	11	12-16 oz	0	64 oz
Black leg ( <i>Phoma lingam</i> )	Rovral 4F	2	2 pt	0	2 app
Black leg ( <i>Phoma lingam</i> )	Priaxor Xenium	7, 11	6-8.2 fl oz	3	24.6 fl oz
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Actigard 50WG	P1	0.5-1.0 oz	7	4 apps
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Kocide 3000	M	0.5-1.25 lb	0	15.8 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Kocide 2000	M	0.75-2.25 lb	0	13.5 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Champ WG <sup>OG</sup>	M	1.58 lb	7	9.48 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Nu-Cop 50DF	M	1 lb	7	5 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Badge SC	M	1-2 pt	7	16.6 pt
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Badge X2 <sup>OG</sup>	M	0.5-1.25 lb	7	2.65 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Cuprofix-Ultra 40	M	0.75-1.25 lb	See Label	6.6 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Cuproxat	M	1.5-2.5 pt	See Label	13.1 pt
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	See Label	See Label
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Nordox 75WG <sup>OG</sup>	M	0.6-2.5 lb	See Label	See Label
Cercospora leaf spot ( <i>Cercospora brassicicola</i> )	Cease Biofungicide <sup>OG</sup>	44	3-6 qt/100 gal	0	See Label
Cercospora leaf spot ( <i>Cercospora brassicicola</i> )	Inspire Super	9	16-20 fl oz	7	80 fl oz
Cercospora leaf spot ( <i>Cercospora brassicicola</i> )	Luna Sensation	7, 11	7.6 fl oz	0	15.3 fl oz
Cercospora leaf spot ( <i>Cercospora brassicicola</i> )	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Cercospora leaf spot ( <i>Cercospora brassicicola</i> )	Switch 62.5WG	9, 12	11-14 oz	7	56 oz
Clubroot ( <i>Plasmodiophora brassicae</i> )	Omega 500F	29	2.6 pt <sup>6</sup>	See Label	1 app
Clubroot ( <i>Plasmodiophora brassicae</i> )	Blocker 4F	14	5.62 gal <sup>6</sup>	See Label	22.5 lbs
Clubroot ( <i>Plasmodiophora brassicae</i> )	Ranman	21	13-25.8 fl oz <sup>6</sup>	See Label	1 app
Damping-off, Wire stem ( <i>Rhizoctonia solani</i> )	Blocker 4F	14	2.8-3.75 gal <sup>6</sup>	See Label	1 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Damping-off, Wire stem ( <i>Rhizoctonia solani</i> )	Uniform	4, 11	0.34 fl. Oz <sup>7</sup>	See Label	1 app
Damping-off, Wire stem ( <i>Rhizoctonia solani</i> )	Quadris Flowable	11	0.4-0.8 fl oz <sup>7</sup>	See Label	1 app
Downy mildew ( <i>Peronospora parasitica</i> )	Aliette 80WDG	33	2-5 lb	3	7 app
Downy mildew ( <i>Peronospora parasitica</i> )	Forum	40	6 fl oz	0	3 app
Downy mildew ( <i>Peronospora parasitica</i> )	Ultra Flourish	4	0.25-0.5 pt	7	2 pt
Downy mildew ( <i>Peronospora parasitica</i> )	Ranman 400SC	21	2.75 fl oz	0	5 app
Downy mildew ( <i>Peronospora parasitica</i> )	Presidio 4SC	43	3-4 fl oz	2	12 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	potassium phosphite (various formulations)	33	2-4 pt	0	See Label
Downy mildew ( <i>Peronospora parasitica</i> )	Orondis ultra	U15, 40	5.5-8 fl oz	1	32 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Quadris 2.08F	11	6-15.5 fl oz	0	92.3 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Revus 2.08SC	40	8. fl oz	1	32 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Zampro	45, 40	14 fl oz	0	42 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Cabrio EG	11	12-16 oz	0-3 <sup>8</sup>	64 oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Cease Biofungicide <sup>OG</sup>	44	3-6 qt/100 gal	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Endura 70WP	7	6-9 oz	0-14 <sup>9</sup>	18 oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Fontelis	7	14-30 fl oz	0	72 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Inspire Super	3, 9	16-20 fl oz	7	80 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Potassium bicarbonate	33	1-3 qt	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Armcarb 100	33	2.5-5 lb/100 gal	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Milstop <sup>OG</sup>	33	2-5 lb/100 gal	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Kaligreen Fungicide	33	2.5-3 lb	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Luna Privilege	7	3.2-6.84 fl oz	0	13.7 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Luna Sensation	7, 11	5.0-7.6 fl oz	0	15.3 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Procure 480SC	3	6-8 fl oz	1	18 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Serenade ASO <sup>OG</sup>	44	2-6 qt	See Label	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Serenade Max <sup>OG</sup>	44	1-3 lb	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Microfine Sulfur	M	6-25 lb	0	See Label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Microthiol Disperss <sup>OG</sup>	M	3-10 lb	See Label	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Yellow Jacket Wettable	M	6-25 lb	See Label	See Label
Powdery mildew ( <i>Erysiphe polygoni</i> , <i>E. cruciferarum</i> )	Switch 62.5WG	9, 12	10-12 oz	7	56 oz
Rhizoctonia bottom rot	Endura 70WP	7	6-9 fl oz	0	2 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Endura 70WP	7	6-9 oz	0-14 <sup>9</sup>	2 apps
White mold ( <i>Sclerotinia sclerotiorum</i> )	Fontelis	7	16-30 fl oz	3	72 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Luna Sensation	7, 11	7.6 fl oz	0	15.3 fl oz
White rust ( <i>Albugo candida</i> )	Cabrio EG	11	12-16 oz	0-3 <sup>8</sup>	64 oz
White rust ( <i>Albugo candida</i> )	Reason 500SC	11	8.2 fl oz	2	24.6 fl oz

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Broccoli and cabbage are covered under a supplemental label (EPA Reg. No. 70506-234).

<sup>6</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

<sup>7</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

<sup>8</sup> For head and stem applications the postharvest interval (PHI) is 0 days. For leafy greens the PHI is 3 days.

<sup>9</sup> For head and stem applications the postharvest interval (PHI) is 0 days. For leafy greens the PHI is 14 days.

## Cucurbits (Cantaloupe, Cucumbers, Pumpkins, Squash, Watermelons and Zucchini)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Actigard 50 WP	P1	0.5-1.0 oz	0	8 oz
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Kocide 3000	M	0.5-1.3 lb	0	17.5 lb
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Kocide 2000	M	1-2.3 lb	0	15 lb
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Champ WG <sup>06</sup>	M	1.5-2 lb	0	10.5 lb
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Nu-Cop 50DF <sup>06</sup>	M	1.5-2 lb	0	18.6 pt
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Badge SC <sup>5</sup>	M	1-2.5 pt	0	5.3 lb Cu
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Badge X2 <sup>06,5</sup>	M	0.5-1.3 lb	0	See Label
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Cuprofix-Ultra 40	M	1-2 lb	0	13 lb
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Cueva <sup>06</sup>	M	0.5-2 gal/100 gal	0	See Label
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	Nordox 75WG <sup>06</sup>	M	1.5-2 lb	0	See Label
Angular leaf spot ( <i>Pseudomonas syringae</i> pv. <i>lachrymans</i> ) and Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>cucurbitae</i> )	ManKocide	M	2-3 lb	5	8 app
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Actinovate	See Label	3-12 oz	0	See Label
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Cabrio 20WG	11	12-16 oz	0	64 oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Catamaran	M, 33	4-6 pt	0	50 pt
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Bravo Ultrex	M	1.4-2.7 lb	0	19.1 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Bravo WeatherStik	M	1.5-3 pt	0	21 pt
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Bravo Zn	M	2.3-4.3 pt	0	30 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Chlorothalonil 720SC	M	1.5-3 pt	0	21 pt
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Kocide 3000	M	0.5-1.3 lb	0	17.5 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Kocide 2000	M	1-2.3 lb	0	15 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Champ WG <sup>OG</sup>	M	1.5-2 lb	0	10.5 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Nu-Cop 50DF <sup>OG</sup>	M	1.5-2 lb	0	18.6 pt
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Badge SC <sup>5</sup>	M	1-2.5 pt	0	5.3 lb Cu
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Badge X2 <sup>OG, 5</sup>	M	0.5-1.3 lb	0	See Label
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Cuprofix-Ultra 40	M	1-2 lb	0	13 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	0	See Label
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Nordox 75WG <sup>OG</sup>	M	1.5-2 lb		See Label
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Luna Privilege	7	6.84 fl oz	0	13.7 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Luna Sensation	7, 11	7.6 fl oz	0	4 app
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Evito 480SC	11	3-5.7 fl oz	1	22.8 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Gavel 75DF	M, 22	1.5-2 lb	1	8 app
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Inspire Super	3, 9	16-20 fl oz	7	80 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	mancozeb Dry formulations	M	2-3 lb	5	25.6 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	mancozeb Liquid Formulations	M	1.6-2.4 qt	5	19.2 qt
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	ManKocide	M	2-3 lb	5	24 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Merivon 500 EC	7, 11	4-5.5 fl oz	7	24 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Monsoon 3.6 F (gummy stem blight only)	3	8 fl oz	See Label	See Label
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Pristine 38WG	7, 11	12.5-18.5 oz	0	16.5 oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Proline 480SC (gummy stem blight only)	3	5.7 fl oz	7	17.1 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Quadris 2.08F	11	11-15.5 fl oz	0	74 oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Quadris Opti	11, M	3.2 pt	1	92.3 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Quadris Top 1.67SC	11, 3	12-14 fl oz	1	4 app
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Ridomil Gold Bravo SC	4, M	2.5-3.3 pt	1	56 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Satori	11	11-15.5 fl oz	0	4 app
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Tanos 50WP	11, 27	8 oz	1	92.3 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Thiophanate-methyl 85WDG	1	0.4 lb	3	4 app
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Topsin 4.5FL	1	10 fl oz	1	2.5 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Topsin M 70WP	1	0.5 lb	1	60 fl oz
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Topsin M WSB	1	0.5 lb	1	3 lb
Leaf spots ( <i>Alternaria</i> , <i>Cercospora</i> ), Anthracnose ( <i>Colletotrichum</i> ), Gummy stem blight ( <i>Didymella</i> ), Target spot ( <i>Corynespora</i> )	Trilogy <sup>OG</sup>	See Label	1%	See Label	See Label
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrulli</i> )	Actigard 50WG	P1	0.5-1.0 oz	0	8 oz
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrulli</i> )	Kocide 3000	M	0.5-1.3 lb	0	17.5 lb
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrulli</i> )	Kocide 2000	M	1-2.3 lb	0	15 lb
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrulli</i> )	Champ WG <sup>OG</sup>	M	1.5-2 lb	0	10.5 lb
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrulli</i> )	Nu-Cop 50DF <sup>OG</sup>	M	1.5-2 lb	1	10.5 lb
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrulli</i> )	Badge SC <sup>5</sup>	M	1-2.5 pt	0	18.6 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrullii</i> )	Badge X2 <sup>OG,5</sup>	M	0.5-1.3 lb	0	5.3 lb Cu
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrullii</i> )	Cuprofix-Ultra 40	M	1-2 lb	0	13 lb
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrullii</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrullii</i> )	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	0	See Label
Bacterial fruit blotch ( <i>Acidovorax avena</i> subsp. <i>citrullii</i> )	Nordox 75WG <sup>OG</sup>	M	1.5-2 lb	1	See Label
Bacterial wilt ( <i>Erwinia tracheiphilia</i> )	No bactericides available. Control of the cucumber beetle prior to flowering is the only recommended practice. See Louisiana Insect Pest Management Guide.	NA	NA	NA	NA
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Aprovia top	3, 7	10.5-13.5 fl oz	0	53.6 fl oz
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Evito 480SC	11	3-5.7 fl oz	1	22.8 fl oz
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Quadris	11	11-15.5 fl oz	1	92.3 fl oz
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Quadris Opti	11, M	3.2 pt	1	4 app
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Quadris Top 1.67SC	11, 3	12-14 fl oz	1	56 fl oz
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Satori	11	0.4-0.8 fl oz <sup>6</sup>	1	1 app
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Thiophanate-methyl 85WDG	1	0.4 lb	1	2.5 lb
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Topsin 4.5FL	1	10 fl oz	1	60 fl oz
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Topsin M 70WP	1	0.5 lb	1	3 lb
Belly (fruit) rot ( <i>Rhizoctonia solani</i> )	Topsin M WSB	1	0.5 lb	1	4 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Actigard 50WG	21	0.5-1.0 oz	0	8 oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Actinovate AG <sup>OG</sup>		3-12 oz	0	See Label
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Aliette WDG	33	2-5 lb	0.5	7 app
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Alude	33	1.3 qt	See Label	6 app
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Cabrio 20WG	11	8-12 oz	0	64 oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Catamaran	M, 33	4 pt	0	50 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Bravo Ultrex	M	1.4-1.8 lb	0	19.1 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Bravo WeatherStik	M	1.5-2 pt	0	21 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Bravo Zn	M	2.3-2.8 pt	0	30 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Chlorothalonil 720SC	M	1.5-2 pt	0	21 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Kocide 3000	M	0.5-1.3 lb	0	17.5 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Kocide 2000	M	1-2.3 lb	0	15 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Champ WG <sup>OG</sup>	M	1.5-2 lb	0	10.5 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Nu-Cop 50DF <sup>OG</sup>	M	1.5-2 lb	0	10.5 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Badge SC <sup>5</sup>	M	1-2.5 pt	1	18.6 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Badge X2 <sup>OG, 5</sup>	M	0.5-1.3 lb	0	5.3 lb Cu
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Cuprofix-Ultra 40	M	1-2 lb	0	13 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Cueva <sup>OG</sup>	M	0.5-2 gal/100 gal	0	See Label
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Nordox 75WG <sup>OG</sup>	M	1.5-2 lb	0	See Label
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Curzate 60DF	M	3.2 oz	1	See Label
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Elumin 4SC	22	8 fl oz	3	16 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Evito 480SC	27	3-5.7 fl oz	2	30 oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Flint 50WDG	11	4 oz	1	22.8 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Forum	11	6 fl oz <sup>7</sup>	0	16 oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Gavel 75DF	40	1.5-2 lb	0	30 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	mancozeb Dry formulations	M	1.6-2.4 qt	5	25.6 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	mancozeb Liquid Formulations	M	2-3 lb	5	19.2 qt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	ManKocide	M	2-5 lb/100 gal	5	24 lb
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Milstop <sup>OG</sup>	See Label	3-4 fl oz <sup>7</sup>	See Label	See Label
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Orondis Ultra (Premix)	40, U15	5.5-8 fl oz	5	32 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Presidio 4F	43	50 fl oz/100 gal	0	12 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Previcur Flex 6F	28	1.2 pt	2	6 pt
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Pristine 38WG	7, 11	12.5-18.5 oz	2	74 oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Quadris 2.08SC	11	11-15.5 fl oz	0	92.3 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Quadris Opti	11, M	3.2 pt	1	4 app
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Ranman 400SC	21	2.1-2.3 fl oz	1	16.5 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Reason 500SC	11	5.5 fl oz	0	22 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Revus 2.08F	40	8 fl oz <sup>7</sup>	14	32 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Satori	11	11-15.5 fl oz	0	92.3 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Zampro 4.38SC	40, 45	14 fl oz	1	42 fl oz
Downy mildew ( <i>Pseudoperonospora cubensis</i> )	Zing	22, M	36 fl oz	0	8 app
Fusarium wilt ( <i>Fusarium oxysporum</i> )	No fungicides labeled	NA	NA	NA	NA
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Cabrio 20WG	11	12-16 oz	0	64 fl oz
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Dithane F-45 Rainshield	M	1.6-2.4 qt	5	19.2 qt
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Dithane M-45	M	2-3 lb	5	24 lb
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Evito 480SC	11	3-5.7 fl oz	1	22.8 fl oz
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Flint 50WDG	11	1.5-2 oz	0	16 fl oz
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Merivon 500SC	7, 11	5.5 fl oz	0	16.5 fl oz
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Quadris Top 1.67SC	11, 3	12-14 fl oz	1	56 fl oz
Plectorsporium blight ( <i>Plectosporium tabacinum</i> )	Roper DF Rainshield	M	2-3 lb	5	25.6 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Actigard 50WG	P1	0.5-1.0 oz	0	8 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Actinovate AG <sup>06</sup>	See Label	3-12 oz	0	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Cabrio 20WG	11	8-12 oz	0	64 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Bravo Ultrex	M	1.4-1.8 lb	0	19.1 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Bravo WeatherStik	M	1.5-2 pt	0	21 pt
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Bravo Zn	M	2.3-2.8 pt	0	30 pt
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Chlorothalonil 720SC	M	1.5-2 pt	0	21 pt
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Kocide 3000	M	0.5-1.3 lb	0	17.5 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Kocide 2000	M	1-2.3 lb	0	15 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Champ WG <sup>06</sup>	M	1.5-2 lb	0	10.5 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Badge SC <sup>5</sup>	M	1-2.5 pt	0	18.6 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Badge X2 <sup>OG,5</sup>	M	0.5-1.3 lb	0	5.3 lb Cu
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Cuprofix-Ultra 40	M	1-2 lb	0	13 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Nordox 75WG <sup>OG</sup>	M	1.5-2 lb	1	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Endura	7	6.5 oz	0	26 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Evito 480SC	11	3-5.7 fl oz	1	22.8 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Flint	11	1.5-2 oz	0	16 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Fontelis	7	12-16 fl oz	1	67 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Gatten	U13	6-8 fl oz	0	5 app
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	ManKocide	M	2-3 lb	5	24 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Milstop <sup>OG</sup>	See Label	2-5 lb/100 gal	See Label	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Merivon 500SC	7, 11	4-5.5 fl oz	0	16.5 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Prev-AM	7, 11	50 fl oz/100 gal	See Label	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Pristine	7, 11	12.5-18.5 oz	0	74 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Procure 50WS	3	4-8 oz	0	40 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Quadris	11	11-15.5 fl oz	1	92.3 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Quadris Opti	11, M	3.2 pt	1	4 app
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Quintec 2.08SC (not on cucumber or summer squash)	13	4-6 fl oz	3	24 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Rally 40WSP	3	2.5-5 oz	0	1.5 lb a.i.
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Satori	11	11-15.5 fl oz	1	92.3 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Sovran	11	3.2-4.8 oz	0	19.2 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Microthiol Disperss <sup>OG</sup> Cucumbers only Melons, squash, or pumpkins	M2	2-4 lb	See Label	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Surround WP <sup>OG</sup>	See Label	25-50 lb	See Label	See Label
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Switch 62.5WG	9, 12	11-14 oz	1	56 oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Torino 0.85SC	U6	3.4 oz	0	2 app
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	tebuconazole (various formulations)	3	4-6 fl oz	7	24 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Thiophanate-methyl 85WG	1	0.2-0.4 lb	1	2.5 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Topsin 4.5FL	1	10 fl oz	1	60 fl oz
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Topsin M 70WP	1	0.5 lb	1	3 lb
Powdery mildew ( <i>Sphaerotheca fuliginea</i> , <i>Erysiphe cichoracearum</i> )	Topsin M WSB	1	0.5 lb	1	3 lb
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Elumin	22	8 fl oz	2	16 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Forum 4.17SC	40	6 fl oz <sup>7</sup>	0	30 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Omega 500F	29	1.5 pt	See label	See label
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Orondis Gold 200	49, 4	4.8-9.6 fl oz	0	19.2 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Orondis Ultra (Premix)	49, 40	5.5-8 fl oz	0	32 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Presidio 4F	43	3-4 fl oz	2	12 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Ranman 400SC	21	2.8 fl oz	0	16.f fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Revus 2.08F	40	8 fl oz	0	32 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Zampro 4.38SC	40, 45	14 fl oz	0	42 fl oz
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Actinovate AG <sup>0G</sup>	See label	3-12 oz	See label	See label
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Bio-Tam <sup>0G</sup>	See label	1.5-3 oz <sup>6</sup>	See label	1 app
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Confine Extra	33	1-4 qt	0	See label
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	0	See label
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	0	6 app
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Fungi-phite	33	1-5 qt	0	7 app
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Previcur Flex	28	1.2 pt	2	6 pt
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1-2 pt <sup>8</sup>	See label	1 app
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	MetaStar 2EC AG	4	4-8 pt <sup>8</sup>	See label	1 app
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Serenade Soil <sup>0G</sup>	44	2-6 qt <sup>8</sup>	See label	See label
Damping-off, Root rot and Cottony leak ( <i>Pythium</i> spp.)	Ultra Flourish	4	2-4 pt <sup>8</sup>	5	4 pt
Scab ( <i>Cladosporium cucumerinum</i> )	Actigard 50WP	P1	0.5-1.0 oz		8 oz
Scab ( <i>Cladosporium cucumerinum</i> )	Catamaran 5.27SC	M, 33	6 pt	0	50 pt
Scab ( <i>Cladosporium cucumerinum</i> )	Bravo Ultrex	M	1.4-1.8 lb	0	19.1 lb
Scab ( <i>Cladosporium cucumerinum</i> )	Bravo WeatherStik	M	1.5-2 pt	0	21 pt
Scab ( <i>Cladosporium cucumerinum</i> )	Bravo Zn	M	2.3-2.8 pt	0	30 pt
Scab ( <i>Cladosporium cucumerinum</i> )	Chlorothalonil 720SC	M	1.5-2 pt	0	21 pt
Scab ( <i>Cladosporium cucumerinum</i> )	mancozeb Dry formulations	M	2-3 lb	5	25.6 lb
Scab ( <i>Cladosporium cucumerinum</i> )	mancozeb Liquid Formulations	M	1.6-2.4 qt	5	19.2 qt
Scab ( <i>Cladosporium cucumerinum</i> )	ManKocide	M	2-3 lb	5	24 lb
Scab ( <i>Cladosporium cucumerinum</i> )	Ridomil Gold Bravo SC	4, M	2.5-3.3 pt	0	15.8 lb a.i.
Scab ( <i>Cladosporium cucumerinum</i> )	Trilogy <sup>0G</sup>	See label	1%	See label	See label

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Broccoli and cabbage are covered under a supplemental label (EPA Reg. No. 70506-234).

<sup>6</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

<sup>7</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

<sup>8</sup> For head and stem applications the postharvest interval (PHI) is 0 days. For leafy greens the PHI is 3 days.

<sup>9</sup> For head and stem applications the postharvest interval (PHI) is 0 days. For leafy greens the PHI is 14 days.

## Eggplant

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Damping-off ( <i>Pythium</i> spp.)	MetaStar 2E	4	4-8 pt <sup>8</sup>	7	12 pt
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1 pt <sup>8</sup>	7	1.5 lb a.i.
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	2 pt <sup>8</sup>	7	6 pt
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Cabrio 20EG	11	8-12 oz	0	96 oz
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Kocide 3000	M	0.8-1.5 lb	0	26.3 lb
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Kocide 2000	M	1.5 lb	0	22.6 lb
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Champ WG <sup>OG</sup>	M	1.6 lb	7	15.8 lb
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Nu-Cop 50DF <sup>OG</sup>	M	1.5 lb	1	15 lb
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Badge SC <sup>5</sup>	M	1.5 pt	7	27.8 pt
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Badge X2 <sup>OG, 5</sup>	M	0.8 lb	7	7.9 lb Cu
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Cuprofix-Ultra 40	M	1.3 lb <sup>5</sup>	See label	19.8 lb
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Mastercop	M	0.5-1.5 pt	7	9 pt
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Nordox 75WG <sup>OG</sup>	M	2-4 lb	See label	22.8 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Aftershock OR Evito	11	2-5.7 fl oz	3	72 fl oz
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Fontelis	7	16-24 fl oz	0	See label
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Milstop <sup>OG</sup>	See label	2-5 lb/100 gal	See label	See label
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Priaxor 500 SC	7, 11	4-8 fl oz	0	24 fl oz
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Quadris Top 1.67SC	11, 3	8-14 fl oz	0	55.3 fl oz
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Reason 500SC	11	5.5-8.2 fl oz	14	24.6 fl oz
Leaf blights and spots ( <i>Alternaria</i> spp.) Anthracnose or fruit rot ( <i>Colletotrichum coccodes</i> ) and Phomopsis fruit rot ( <i>Phomopsis vexans</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Elumin 4 SC	22	8 fl oz	2	30 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Forum SC	40	6 fl oz <sup>7</sup>	0	30 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Micora 2.08F	40	8 fl oz <sup>7</sup>	1	32 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Omega 500F	29	1.5 pt	30	9 pt
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Orondis Gold 200	U15	4.8-9.6 fl oz	0	19.2 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Presidio 4SC	43	3-4 fl oz	2	12 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Ranman 400SC	21	2.8 fl oz	0	16.5 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Reason 500SC	11	8.2 fl oz	14	24.6 fl oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Revus 2.08F	40	8 fl oz	1	32 oz
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Ridomil Gold + Copper	4, M	2 lb	7	4 app
Phytophthora blight or crown rot ( <i>Phytophthora capsici</i> )	Zampro 525SC	40, 45	14 fl oz	0	42 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Ariston	M, 27	2-2.4 pt	3	18.1
Powdery mildew ( <i>Leveillula taurica</i> )	Cabrio 20EG	11	8-16 oz	0	96 oz
Powdery mildew ( <i>Leveillula taurica</i> )	Bravo Ultrex	M	1.4 lb	3	10.9 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Leveillula taurica</i> )	Bravo WeatherStik <sup>6</sup>	M	1.5 pt	3	12 pt
Powdery mildew ( <i>Leveillula taurica</i> )	phosphorous acid (various formulations)	33	See label	0	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Fontelis	7	16-24 fl oz	0	72 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Inspire Super	3, 9	16-20 fl oz	0	47 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Priaxor 500SC	7, 11	6-8 fl oz	0	24 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Quadris 2.08F	11	6-15.5 fl oz	0	61.5 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Quadris Top	11, 3	8-14 fl oz	0	55.3 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Satori	11	6-15.5 fl oz	0	61.5 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Microfine Sulfur <sup>OG</sup>	M	22-38 lb	See label	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Microthiol Dispers <sup>OG</sup>	M	4-6 lb	See label	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Yellow Jacket Wettable <sup>OG</sup>	M	22-38 lb	See label	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Switch 62.5WG	9, 12	11-14 oz	See label	See label
Powdery mildew ( <i>Leveillula taurica</i> )	Trilogy <sup>OG</sup>	See label	1%	0	46.2 fl oz
Powdery mildew ( <i>Leveillula taurica</i> )	Vivando	U8	15.4 fl oz	See label	See label
Southern blight ( <i>Sclerotium rolfsii</i> )	Cabrio 20EG	11	12-16 oz	0	96 oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Aftershock	11	2-5.7 fl oz	3	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Evito 280 SC	11	2-5.7 fl oz	3	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	OSO 5%	19	6.5-13 fl oz	0	4.2 oz a.i.
Southern blight ( <i>Agroathelia rolfsii</i> )	Priaxor 500SC	7, 11	4-8 fl oz	0	24 fl oz
Verticillium wilt ( <i>Verticillium</i> sp.)	OSO 5%	19	6.5-13 fl oz	0	4.2 oz a.i.

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<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Do not use in a spray solution with a pH less than 6.5.

<sup>6</sup> Other product choices that can be applied at the same rate include Echo 720, Equus 720SST and Chloronil 720.

<sup>7</sup> Do not apply alone. Must be applied as a tank mix with another fungicide with a different mode of action.

<sup>8</sup> Soil applications. Refer to individual labels for application directions.

## Greens (Collards, Kale, Mustard and Turnip)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Quadris	11	6-15.5 fl oz	0	46 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Satori	11	12-16 oz	3	64 oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Cabrio	11	6-9 oz	14	18 oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Endura	7	14-30 fl oz	0	72 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Fontelis	7	14-30 fl oz	0	72 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Kocide 3000	M	0.5-0.8 lb	0	8.8 lb
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Kocide 2000	M	0.8-1.5 lb	0	7.6 lb
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Champ Formula 2 Flowable	M	0.3-0.7 pt	0	7.3 pt
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Champ WG <sup>OG</sup>	M	1 lb	0	5.3 lb
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Badge SC <sup>5</sup>	M	1-1.8 pt	0	18.6 pt
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Badge X2 <sup>OG,5</sup>	M	0.5-0.8 lb	0	2.7 lb Cu
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Cuprofix-Ultra 40	M	See label	See label	See label
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Mastercop	M	0.8-1.3 lb	0	6.6 lb
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Inspire Super	M	0.5-1 pt	0	6 pt
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Procure 480 SC	3, 9	16-20 fl oz	7	80 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Luna Sensation	3	6-8 fl oz	1	18 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Reason 500 SC	7, 11	5-7.6 fl oz	7	15.3 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Serenade <sup>OG</sup> ASO	11	8.2 fl oz	2	24.6 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	See label	See label
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Sonata <sup>OG</sup>	44	2-4 qt	See label	See label
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Switch 62.5WG	9, 12	11-14 oz	7	56 oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Monsoon	3	3-4 fl oz	7	16 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Onset 3.6L	3	3-4 fl oz	7	16 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Tebu-Crop 3.6F	3	3-4 fl oz	7	16 fl oz
Alternaria leaf spot or Black leaf spot ( <i>Alternaria brassicae</i> )	Toledo	3	3-4 fl oz	7	16 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercospora</i> spp.)	Quadris	11	6-15.5 fl oz	0	46 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Satori	11	12-16 oz	3	64 oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Cabrio 20EG	11	6-9 oz	14	18 oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Endura 70WG	7	14-30 fl oz	0	72 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Fontelis 1.67SC	7	14-30 fl oz	0	72 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Inspire Super 2.82SC	3, 9	16-20 fl oz	7	80 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Reason 500SC	11	8.2 fl oz	2	24.6 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Switch 62.5WG	9, 12	11-14 oz	7	56 oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Monsoon	3	3-4 fl oz	7	16 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Onset 3.6L	3	3-4 fl oz	7	16 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Tebu-Crop 3.6F	3	3-4 fl oz	7	16 fl oz
Anthracnose ( <i>Colletotrichum higginsianum</i> ), Leaf spots ( <i>Cercospora</i> spp., <i>Cercosporiella</i> spp.)	Toledo	3	3-4 fl oz	7	16 fl oz
Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>armoraciae</i> )	Cease	44	3-6 qt/100 gal	0	Chemicals are not effective against this disease.
Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>armoraciae</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	Chemicals are not effective against this disease.
Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>armoraciae</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	Chemicals are not effective against this disease.
Bacterial leaf spot ( <i>Xanthomonas campestris</i> pv. <i>armoraciae</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	Chemicals are not effective against this disease.

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Actigard	21	0.5-1.0 oz	7	4 apps
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Cease	44	3-6 qt/100 gal	0	See label
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Kocide 3000	M	0.5-1.3 lb	0	15.8 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Kocide 2000	M	0.5-0.8 lb	0	8.8 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Champ Formula 2 Flowable	M	0.8-1.5 lb	0	7.6 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Champ WG <sup>OG</sup>	M	1 lb	0	5.3 lb
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Badge SC	M	1-1.8 pt	0	18.6 pt
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Badge X2 <sup>OG</sup>	M	0.5-0.8 lb	0	2.7 lb Cu
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Cuprofix-Ultra 40	M	0.5-1 pt	0	6 pt
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Black rot ( <i>Xanthomonas campestris</i> pv. <i>campestris</i> )	Nordox 75WG <sup>OG</sup>	M	1-3 lb	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	See label	0.3-0.5 pt <sup>7</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	0.5-1 pt	See label	4 pt
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-3 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fungi-phite	33	1-5 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	RootShield Granules	44	2.5-6 lb/ ½acre <sup>7</sup>	See label	1 app
Downy mildew ( <i>Peronospora parasitica</i> )	Actigard 50WG	P1	0.8-1 oz	7	4 oz <sup>17</sup>
Downy mildew ( <i>Peronospora parasitica</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Aliette WDG	33	2-5 lb	3	7 app
Downy mildew ( <i>Peronospora parasitica</i> )	Alude	33	0.5 gal/40 gal	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Cabrio 20EG	11	12-16 oz	0	64 oz
Downy mildew ( <i>Peronospora parasitica</i> )	Kocide 3000	M	0.5-0.8 lb	0	8.8 lb
Downy mildew ( <i>Peronospora parasitica</i> )	Kocide 2000	M	0.8-1.5	0	7.6 lb
Downy mildew ( <i>Peronospora parasitica</i> )	Champ Formula 2 Flowable	M	0.3-0.7 pt	0	7.3 pt
Downy mildew ( <i>Peronospora parasitica</i> )	Champ WG <sup>OG</sup>	M	1 lb	0	5.3 lb
Downy mildew ( <i>Peronospora parasitica</i> )	Badge SC <sup>5</sup>	M	1.7 pt	5	28.1 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora parasitica</i> )	Badge X2 <sup>OG, 5</sup>	M	1.8-3.5 lb	5	8 lb
Downy mildew ( <i>Peronospora parasitica</i> )	Cuprofix-Ultra 40	M	0.5-1 pt	0	6 pt
Downy mildew ( <i>Peronospora parasitica</i> )	Mastercop	M	0.5-1 pt	0	6 pt
Downy mildew ( <i>Peronospora parasitica</i> )	Nordox 75WG <sup>OG</sup>	M	1-2 lb	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Forum 4.16SC	40	6 fl oz <sup>6</sup>	0	18 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Micora	40	5.5-8 fl oz <sup>6</sup>	See label	8 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Milstop <sup>OG</sup>	40	2-5 lb/100 gal	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Confine Extra	33	1-3 qt	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Fungi-phite	33	1-5 qt	0	6 app
Downy mildew ( <i>Peronospora parasitica</i> )	Helena ProPhyt	33	2-4 pt	0	7 app
Downy mildew ( <i>Peronospora parasitica</i> )	Presidio 4SC	43	3-4 fl oz	2	12 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Ranman 400SC	21	2.8 fl oz	0	39.5 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Reason 500SC	11	5.5-8.2 fl oz	2	24.6 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Revus 2.08SC	40	8 fl oz	1	32 fl oz
Downy mildew ( <i>Peronospora parasitica</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Zampro 525SC	40, 45	14 fl oz	0	42 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Cease	See label	3-6 qt/100 gal	0	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Cabrio 20EG	11	12-16 oz	3	64 oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Endura 70WG	7	6-9 oz	14	18 oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Fontelis 1.67SC	7	14-30 fl oz	0	72 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Inspire Super	3, 9	16-20 fl oz	7	80 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	MilStop <sup>OG</sup>	40	2-5 lb/100 gal	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Confine Extra	33	1-3 qt	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Rampart	33	1-3 qt/100 gal	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Luna Sensation	7, 11	5-7.6 fl oz	7	15.3 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Priaxor Xenium	7, 11	6-8.2 fl oz	3	24.6 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Procure 480SC	3	6-8 fl oz	1	18 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Quadris Top	11, 3	12-14 fl oz	1	56 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Quintec	13	4-6 fl oz	1	24 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Sonata <sup>OG</sup>	44	2-4 qt	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Microfine Sulfur	M	6-25 lb	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Microthiol Disperss	M	3-10 lb	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Yellow Jacket Wettable	M	6-25 lb	See label	See label
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Switch 62.5WG	9, 12	10-12 oz	7	56 oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Monsoon	3	3-4 fl oz	7	16 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Onset 3.6L	3	3-4 fl oz	7	16 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Tebu-Crop 3.6F	3	3-4 fl oz	7	16 fl oz
Peppery leaf spot ( <i>Pseudomonas syringae</i> pv. <i>maculicola</i> )	Toledo	3	3-4 fl oz	7	16 fl oz
Phytophthora root rot ( <i>Phytophthora</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	Ultra Flourish	4	0.5-1 pt	See label	4 pt
Phytophthora root rot ( <i>Phytophthora</i> spp.)	phosphorous acid	See label	See label	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	Confine Extra	33	1-3 qt/100 gal	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	potassium phosphite	See label	See label	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	Fungi-phite	33	1-5 qt	See label	See label
Phytophthora root rot ( <i>Phytophthora</i> spp.)	RootShield Granules	44	2.5-6 lb/ ½acre <sup>7</sup>	See label	1 app
Rhizoctonia basal stem and root rot, Wire stem ( <i>Rhizoctonia solani</i> )	Quadris	11	0.4-0.8 fl oz <sup>6</sup>	See label	1 app
Rhizoctonia basal stem and root rot, Wire stem ( <i>Rhizoctonia solani</i> )	Satori	11	0.4-0.8 fl oz <sup>6</sup>	See label	1 app
Rhizoctonia basal stem and root rot, Wire stem ( <i>Rhizoctonia solani</i> )	Cabrio	11	12-16 oz	3	64 oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Sclerotinia stem rot ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Sclerotinia stem rot ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Cabrio	11	12-16 oz	3	64 oz
Sclerotinia stem rot ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Endura	7	6-9 oz	14	18 oz
Sclerotinia stem rot ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Fontelis	7	16-30 fl oz	0	72 fl oz
White rust ( <i>Albugo candida</i> )	Quadris	11	6-15.5 fl oz	0	46 fl oz
White rust ( <i>Albugo candida</i> )	Satori	11	6-15.5 fl oz	0	46 fl oz
White rust ( <i>Albugo candida</i> )	Cabrio	11	12-16 oz	3	64 oz
White rust ( <i>Albugo candida</i> )	Reason 500SC	11	8.2 fl oz	2	24.6 fl oz

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Do not use in a spray solution with a pH less than 6.5.

<sup>6</sup> Do not apply alone. Must be applied as a tank mix with another fungicide with a different mode of action.

<sup>7</sup> Soil applications. Refer to individual labels for application directions.

## Herbs (Chervil, Cilantro, Coriander, Endive, Fennel, Parsley), Leafy Vegetables (Except Lettuce and Greens)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial leaf spot ( <i>Pseudomonas syringae</i> pathovars)	No products are currently labeled for bacterial leaf spot of herbs. Hot water treatment of seeds remove bacteria from the seed surface. See Seed Treatment section of this guide for instructions on how to treat seed.	NA	NA	NA	NA
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Quadris	11	6-15.5 fl oz	0	92.3 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Quadris Opti	11, M	2.4-3.7 pt	7	footnote <sup>6</sup>
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Satori	11	6-15.5 fl oz	0	92.3 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Cabrio	11	12-16 oz	0	64 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Bravo Ultrex	M	1.8-2.7 lb <sup>5</sup>	7	21.8 lb
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Chlorothalonil 720SC	M	2-3 pt <sup>5</sup>	7	24 pt
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Fontelis	7	14-24 fl oz	3	72 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Bumper 41.8EC	3	3-4 fl oz <sup>5</sup>	14	16 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Bumper ES	3	3-4 fl oz <sup>5</sup>	14	16 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Propi-StarEC	3	3-4 fl oz <sup>5</sup>	14	16 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Tilt	3	3-4 fl oz <sup>5</sup>	14	16 fl oz
Cercospora and Septoria leaf blights ( <i>Cercospora</i> spp., <i>Septoria</i> spp.)	Switch 62.5WG	9, 12	11-14 oz	0	56 oz
Downy mildew ( <i>Peronospora</i> spp.)	Actinovate AG <sup>OG</sup>	See Label	3-12 oz	See Label	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Aliette WDG	33	2-5 lb	3	7 app
Downy mildew ( <i>Peronospora</i> spp.)	Quadris	11	12-15.5 fl oz	See Label	92.3 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Satori	11	12-15.5 fl oz <sup>7</sup>	See Label	92.3 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Cabrio	11	16 oz	0	64 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Micora	40	5.5-8 fl oz <sup>8</sup>	See Label	2 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora</i> spp.)	Confine Extra	33	1-4 qt	See Label	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Rampart	33	1-3 qt/100 gal	See Label	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Fosphite	33	1-3 qt/100 gal	See Label	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Fungi-phite	33	1-2 qt	See Label	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Helena ProPhyt	33	2-4 pt	See Label	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Presidio	43	3-4 fl oz <sup>8</sup>	2	12 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Ranman 400SC	21	2.8 fl oz	0	16.5 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Reason 500SC	11	5.5-8.2 fl oz	2	24.6 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Revus	40	8 fl oz	1	32 fl oz
Downy mildew ( <i>Peronospora</i> spp.)	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Sonata <sup>OG</sup>	44	2-4 qt	0	See Label
Downy mildew ( <i>Peronospora</i> spp.)	Tanos	27, 11	8-10 oz	1	48 oz
Downy mildew ( <i>Peronospora</i> spp.)	Zampro	45, 40	14 fl oz	0	42 fl oz
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1-2 pt <sup>9</sup>	7	1 lb a.i.
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	2-4 pt <sup>9</sup>	7	4 pt
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-4 qt	See Label	See Label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See Label	See Label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See Label	See Label
Damping-off ( <i>Pythium</i> spp.)	Ranman	21	2.8 fl oz <sup>9</sup>	See Label	16.5 fl oz
Damping-off ( <i>Pythium</i> spp.)	Rootshield Granules	44	2.5-6 lb/ ½acre <sup>9</sup>	0	1 app
Damping-off ( <i>Pythium</i> spp.)	Uniform	4, 11	0.34 fl oz <sup>10</sup>	See Label	1 app
Damping-off ( <i>Rhizoctonia solani</i> )	Confine Extra	33	1-4 qt	See Label	See Label
Damping-off ( <i>Rhizoctonia solani</i> )	Rampart	33	1-3 qt/100 gal	See Label	See Label
Damping-off ( <i>Rhizoctonia solani</i> )	Fosphite	33	1-3 qt/100 gal	See Label	See Label
Damping-off ( <i>Rhizoctonia solani</i> )	Rootshield Granules	44	2.5-6 lb/ ½acre <sup>9</sup>	0	1 app
Damping-off ( <i>Rhizoctonia solani</i> )	Serenade Soil	44	2-6 qt <sup>9</sup>	See Label	See Label
White rust ( <i>Albugo occidentalis</i> )	Quadris	11	6-15.5 fl oz	0	92.3 fl oz
White rust ( <i>Albugo occidentalis</i> )	Satori	11	6-15.5 fl oz <sup>7</sup>	0	92.3 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
White rust ( <i>Albugo occidentalis</i> )	Cabrio	11	8-12 fl oz	0	64 fl oz
White rust ( <i>Albugo occidentalis</i> )	Presidio	43	3-4 fl oz <sup>8</sup>	2	12 fl oz
White rust ( <i>Albugo occidentalis</i> )	Ranman 400SC	21	2.8 fl oz	0	16.5 fl oz
White rust ( <i>Albugo occidentalis</i> )	Reason 500SC	11	5.5-8.2 fl oz	2	24.6 fl oz
White rust ( <i>Albugo occidentalis</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See Label
White rust ( <i>Albugo occidentalis</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See Label
White rust ( <i>Albugo occidentalis</i> )	Tanos	27, 11	8-10 oz	1	48 oz

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Not labeled for all herbs or leafy greens. Rate varies depending on the crop type. Refer to label for labeled crops and specific rates.

<sup>6</sup> Do not exceed 18 lb. a.i. per acre of chlorothalonil containing products. Do not exceed 1.5 lb. a.i. per acre of azoxystrobin containing products.

<sup>7</sup> Satori must not be tank mixed with another fungicide (i.e., Ambush WP, Pounce WP, Franchise) that may increase the penetration of Satori. Refer to label for addition restrictions.

<sup>8</sup> Do not apply alone. Must be applied as a tank mix with another fungicide with a different mode of action.

<sup>9</sup> Soil applications. Refer to individual labels for application directions.

<sup>10</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

## Lettuce

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial spot ( <i>Xanthomonas campestris</i> pv. <i>vitians</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Bacterial spot ( <i>Xanthomonas campestris</i> pv. <i>vitians</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Bacterial spot ( <i>Xanthomonas campestris</i> pv. <i>vitians</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See label
Bacterial spot ( <i>Xanthomonas campestris</i> pv. <i>vitians</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Bottom rot ( <i>Rhizoctonia solani</i> )	Quadris	11	0.4-0.8 fl oz <sup>5,6</sup>	0	92.3 fl oz
Bottom rot ( <i>Rhizoctonia solani</i> )	Satori	11	0.4-0.8 fl oz <sup>5,6</sup>	0	92.3 fl oz
Bottom rot ( <i>Rhizoctonia solani</i> )	Endura	7	8-11 oz	14	22 oz
Bottom rot ( <i>Rhizoctonia solani</i> )	Iprodione 4L AG	2	1.5-2 pt	14	3 app
Bottom rot ( <i>Rhizoctonia solani</i> )	Meteor	2	1.5-2 pt	14	3 app
Bottom rot ( <i>Rhizoctonia solani</i> )	Nevado 4F	2	1.5-2 pt	14	3 app
Bottom rot ( <i>Rhizoctonia solani</i> )	Rovral 4F	2	1.5-2 pt	14	3 app
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Botran 5F (At planting)	14	0.6 qt	14	3.2 qt <sup>7</sup>
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Botran 5F (Pre-thinning)	14	0.6-1.8 qt	14	3.2 qt <sup>7</sup>
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Botran 5F (Post-thinning)	14	1.8-3.2 qt	14	3.2 qt <sup>7</sup>
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Endura	7	8-11 oz	14	22 oz
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Fontelis	7	16-24 fl oz	3	72 fl oz
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Meteor	2	1.5-2 pt	14	3 app
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Nevado 4F	2	1.5-2 pt	14	3 app
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Rovral 4F	2	1.5-2 pt	14	3 app
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Merivon	7, 11	8-11 fl oz	1	33 fl oz
Botrytis rot (or gray mold) ( <i>Botrytis cinerea</i> )	Switch 62.5WG	9, 12	11-14 oz	0	56 oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Quadris	11	12-15.5 fl oz	0	92.3 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Satori	11	12-15.5 fl oz <sup>9</sup>	0	92.3 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Actigard 50WG	21	0.8-1 oz	7	4 oz <sup>11</sup>
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Aliette WDG	33	2-5 lb	3	7 app
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Alude	33	0.5 gal/40 gal	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Cabrio	11	12-16 oz	0	64 oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Kocide 3000	M	0.8-1.5 lb	0	26.6 lb
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Champ Formula 2F	M	0.7-1.3 pt	0	22 pt
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Badge SC <sup>8</sup>	See label	1.7 pt	5	28.1 pt
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Badge X2 <sup>OG, 8</sup>	M	1.8-3.5 lb	5	8 lb
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Nordox 75WG <sup>OG</sup>	M	1-2 lb	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Manzate Pro-Stick	M	1.6-2.1 lb	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	ManKocide	M	1-2 lb	10	12.8 lb
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Merivon Xenium	M	8-11 fl oz	1	33 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Micora	7, 11	5.5-8 fl oz <sup>10</sup>	10	26 lb
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Milstop <sup>OG</sup>	40	2-5 lb/100 gal	See label	2 app
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Orondis Ultra	See label	5.5-8 fl oz	1	32 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Orondis Gold 200	40, U15	4.8-9.6 fl oz	0	19.2 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Confine Extra	See label	1-4 qt	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Fosphite	See label	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Fungi-phite	33	1-2 qt	See label	6 app
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Helena ProPhyt	33	2-4 pt	2	7 app
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Presidio	43	3-4 fl oz <sup>10</sup>	See label	12 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Prev-AM	See label	50 fl oz/100 gal	2	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Previcur Flex	28	2 pt	0	8 pt
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Ranman	21	2.8 fl oz	2	16.5 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Reason 500SC	11	5.5-8.2 fl oz	1	24.6 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Revus	40	8 fl oz	1	32 fl oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Tanos	27, 11	8-10 oz	1	48 oz
Downy mildew ( <i>Bremia lactucae</i> , <i>Peronospora</i> spp.)	Zampro	40, 45	14 fl oz	0	42 fl oz
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Botran 5F (At planting)	14	0.6 qt	14	3.2 qt7

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Botran 5F (Pre-thinning)	14	0.6-1.8 qt	14	3.2 qt <sup>7</sup>
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Botran 5F (Post-thinning)	14	1.8-3.2 qt	14	3.2 qt <sup>7</sup>
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Endura	7	8-11 oz	14	22 oz
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Fontelis	7	16-24 fl oz	3	72 fl oz
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Iprodione 4L AG	2	1.5-2 pt	14	3 app
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Meteor	2	1.5-2 pt	14	3 app
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Nevado 4F	2	1.5-2 pt	14	3 app
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Rovral 4F	2	1.5-2 pt	14	3 app
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Merivon Xenium ( <i>S. minor</i> only)	7, 11	8-11 fl oz	1	33 fl oz
Lettuce drop ( <i>Sclerotinia minor</i> , <i>S. sclerotiorum</i> )	Switch 62.5WG	9, 12	11-14 oz	0	56 oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Quadris	11	12-15.5 fl oz	0	92.3 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Satori	11	12-15.5 fl oz <sup>9</sup>	0	92.3 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Cabrio	11	12-16 oz	0	64 oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Endura	7	8-11 oz	14	22 oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Fontelis	7	16-24 fl oz	3	72 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Milstop <sup>OG</sup>	See label	2-5 lb/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Merivon Xenium	7, 11	4-11 fl oz	1	33 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Confine Extra	33	1-4 qt	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Prev-Am	See label	50 fl oz/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Procure 480SC	3	6-8 fl oz	0	18 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Quintec	13	4-6 fl oz	1	24 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Rally 40WSP	3	5 oz	3	4 app
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Serenade <sup>OG</sup> Max	44	1-3 lb	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Microthiol Disperss	M	5-10 lb	0	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Switch 62.5WG	9, 12	11-14 oz	See label	56 oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1-2 pt <sup>5</sup>	7	1 lb a.i.
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	2-4 pt <sup>5</sup>	7	4 pt
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-4 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fungi-phite	33	1-2 qt	See label	6 app
Damping-off ( <i>Pythium</i> spp.)	Previcur Flex	28	2 pt <sup>5</sup>	2	8 pt
Damping-off ( <i>Pythium</i> spp.)	Ranman	21	2.8 fl oz <sup>5</sup>	0	16.5 fl oz
Damping-off ( <i>Pythium</i> spp.)	Rootshield Granules	44	2.5-6 lb/ ½acre <sup>5</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	Uniform	4, 11	0.34 fl oz <sup>6</sup>	See label	1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Soil applications. Refer to individual labels for application directions.

<sup>6</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

<sup>7</sup> Rates are cumulative. Do not apply more than 3.2 qt. per acre per year.

<sup>8</sup> Do not use in a spray solution with a pH less than 6.5.

<sup>9</sup> Satori must not be tank mixed with another fungicide (i.e., Ambush WP, Pounce WP, Franchise) that may increase the penetration of Satori. Refer to label for addition restrictions.

<sup>10</sup> Do not apply alone. Must be applied as a tank mix with another fungicide with a different mode of action.

<sup>11</sup> Do not use more than one application of Actigard 50WG on head lettuce intended for bag purposes.

## Okra

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Cercospora leaf spot ( <i>Cercospora abelmoschi</i> , <i>C. malayensis</i> )	Bravo Ultrex	M	1.4 lb	3	10.9 lb
Cercospora leaf spot ( <i>Cercospora abelmoschi</i> , <i>C. malayensis</i> )	Bravo WeatherStix	M	1.5 pt	3	12 pt
Cercospora leaf spot ( <i>Cercospora abelmoschi</i> , <i>C. malayensis</i> )	Chloronil	M	1.5 pt	3	12 pt
Cercospora leaf spot ( <i>Cercospora abelmoschi</i> , <i>C. malayensis</i> )	Equus 720SST	M	1.5 pt	3	12 pt
Cercospora leaf spot ( <i>Cercospora abelmoschi</i> , <i>C. malayensis</i> )	tebuconazole	3	4-6 fl oz	3	24 fl oz
Downy mildew	Micora	40	5.5-8 fl oz	0	2 app
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Ariston	27, M	2-4.4 pt	3	17.5 pt
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Bravo Ultrex	M	1.4 lb	3	10.9 lb
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Bravo WeatherStix	M	1.5 pt	3	12 pt
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Chloronil	M	1.5 pt	3	12 pt
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Equus720SST	M	1.5 pt	3	12 pt
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Kentan DF	M	0.5-1.5 lb	See label	5.25 lb
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Kocide 3000	M	0.75-1.5 lb	0	17.5 lb
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Kocide 2000	M	1.5-3 lb	0	15 lb
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Mastercop	M	0.5-1.5 pt	See label	9 pt
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Milstop <sup>OG</sup>	See label	2-5 lb/100 gal	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Confine Extra	33	1-4 qt	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Fosphite	33	1-3 qt	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	KPhite	33	1-4 qt	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Rampart	33	1-3 qt/100 gal	0	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Inspire Super	3, 9	16-20 fl oz	0	47 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Quadris Flowable	11	6-15.5 fl oz	0	61.5 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Quadris Top	11, 3	8-14 fl oz	7	55.3 fl oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Rally 40WSP	3	2.5-5 oz	0	1.25 lb a.i
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Serenade ASO <sup>OG</sup>	44	2-6 qt	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Serenade MAX <sup>OG</sup>	44	1-3 lb	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Microthiol Disperss <sup>OG</sup>	M	3-10 lb	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Switch 62.5WG	9, 12	11-14 oz	0	56 oz
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Trilogy <sup>OG</sup>	See label	0.5-1%/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe cichoracearum</i> )	Vivando	U8	15.4 fl oz	0	46.2 fl oz
Damping-off ( <i>Rhizoctonia</i> spp.)	Quadris 2.08F	11	0.4-0.8 fl oz <sup>5</sup>	See label	1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

## Onions (Dry, Green, Shallots and Spanish), Garlic and Leeks

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial leaf blight ( <i>Xanthomonas axonopodis</i> pv. <i>allii</i> , <i>Pseudomonas syringae</i> pv. <i>porri</i> )	Actigard 50WG (dry only)	21	0.75-1 oz	7	4 oz
Bacterial leaf blight ( <i>Xanthomonas axonopodis</i> pv. <i>allii</i> , <i>Pseudomonas syringae</i> pv. <i>porri</i> )	Kentan DF	M	1.5 lb	0	6 lb
Bacterial leaf blight ( <i>Xanthomonas axonopodis</i> pv. <i>allii</i> , <i>Pseudomonas syringae</i> pv. <i>porri</i> )	Kocide 3000	M	0.75-1.5 lb	0	20 lb
Bacterial leaf blight ( <i>Xanthomonas axonopodis</i> pv. <i>allii</i> , <i>Pseudomonas syringae</i> pv. <i>porri</i> )	Kocide 2000	M	1.5 lb	0	17.1 lb
Bacterial leaf blight ( <i>Xanthomonas axonopodis</i> pv. <i>allii</i> , <i>Pseudomonas syringae</i> pv. <i>porri</i> )	Mastercop	M	0.5-1.5 pt	7	9 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Aliette WDG (dry only)	33	2-3 lb	7	7 app
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Cabrio EG	11	8-12 oz	7	72 oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Cease Biofungicide <sup>OG</sup>	44	3-6 qt/100 gal	0	See label
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bravo Ultrex (Dry and Garlic)	M	0.9-2.7 lb	7	18.2 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bravo (Dry and Garlic)	M	1-3 pt	7	20 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bravo ZN (Dry and Garlic)	M	1.5-4.25 pt	7	29 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Chloronil 720 (Dry and Garlic)	M	1-3 pt	7	20 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Chlorothalonil	M	1-3 pt	7	20 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Echo 720 (Dry and Garlic)	M	1-2 pt	7	1.5 lb a.i.
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Equus 720SST (Dry and Garlic)	M	1-3 pt	7	20 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Equus 500ZN (Dry and Garlic)	M	1.5-4.25 pt	7	29 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Intiate (Dry and Garlic)	M	1-3 pt	7	20 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Initiate ZN (Dry and Garlic)	M	1.5-4.25 pt	7	29 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bravo Ultrex (Green, leeks, shallots)	M	1.47-2.7 lb	14	8.2 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bravo (Green, leeks, shallots)	M	1.5-3 pt	14	9 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bravo ZN (Green, leeks, shallots)	M	2.25-4.25 pt	14	17 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Chloronil 720 (Green, leeks, shallots)	M	1.5-3 pt	14	9 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Chlorothalonil	See label	1.5-3 pt	14	9 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Echo 720 (Green, leeks, shallots)	M	1.5-3 pt	14	6.7 lb a.i.
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Equus 720SST (Green, leeks, shallots)	M	1.5-3 pt	14	9 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Equus 500ZN ( <b>Green, leeks, shallots</b> )	M	2.25-4.25 pt	14	13 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Intiate ( <b>Green, leeks, shallots</b> )	M	1.5-3 pt	14	3 apps
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Initiate ZN ( <b>Green, leeks, shallots</b> )	M	2.25-4.25 pt	14	13 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Badge SC	M	1.5 pt	NA	21.1 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Badge X2 <sup>OG</sup>	M	0.75 lb	NA	6 lb a.i.
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Champ DP DRY	M	1.33 lb	NA	16 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Champ Formula 2	M	1.33 pt	NA	16.5 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Champ WG <sup>OG</sup>	M	2 lb	NA	12 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Kentan DF	M	2 lb	NA	6 lb a.i.
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Kocide 3000	M	0.75-1.5 lb	NA	20 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Kocide 2000	M	1.5 lb	NA	17.1 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Nordox WG <sup>OG</sup>	M	1.25-2.5 lb	NA	See label
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Cuprofix Ulta 40 ( <b>dry, green, garlic</b> )	M	1.25-2.25 lb	NA	15 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Cuproxat	M	2.5-4.9 pt	7	29.6 pt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Fontelis	7	16-24 fl oz	3	72 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Helena Prophyt	See label	4 pt	0	7 apps
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Inspire Super ( <b>green</b> )	3,9	16-20 fl oz	14	60 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Inspire Super ( <b>dry</b> )	3,9	16-20 fl oz	7	80 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Iprodione 4L AG ( <b>dry onions only</b> )	2	1 pt	7	5 app
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Meteor ( <b>dry onions only</b> )	2	1 pt	7	10 app
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Nevado 4F ( <b>dry onions only</b> )	2	1 pt	7	10 app
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Rovral 4 Flowable ( <b>dry onions only</b> )	2	1 pt	7	10 app
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Dithane F45 Rainshield	M	2.4 qt	7	24 qt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Dithane M45	M	3 lb	7	30 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Manzate Flowable ( <b>dry, garlic, shallot</b> )	M	2.4 qt	7	24 qt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Manzate Max ( <b>dry, garlic, shallot</b> )	M	1.6-2.4 qt	7	24 qt
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Manzate Pro-Stick ( <b>dry, garlic, shallot</b> )	M	3 lb	7	30 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Penncozeb 75DF ( <b>dry, garlic, shallot</b> )	M	2-3 lb	7	24 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Penncozeb 80WP ( <b>dry, garlic, shallot</b> )	M	2-3 lb	7	24 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	ManKocide ( <b>dry only</b> )	M	2.5 lb	7	20 lb
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Merivon	7, 11	8-11 fl oz	7	33 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Omega 500F	29	1 pt	7	6 app
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Pristine	7, 11	10.5-18.5 oz	7	111 oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Amtide ( <b>Dry, garlic and shallots</b> )	3	2-8 fl oz	14	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bumper 41.8EC ( <b>Dry, garlic and shallots</b> )	3	2-8 fl oz	14	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bumper ES ( <b>Dry, garlic and shallots</b> )	3	2-8 fl oz	14	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Fitness ( <b>Dry, garlic and shallots</b> )	3	2-8 fl oz	14	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Tilt ( <b>Dry, garlic and shallots</b> )	3	2-8 fl oz	14	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Topaz ( <b>Dry, garlic and shallots</b> )	3	2-8 fl oz	14	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Amtide ( <b>Green and leeks</b> )	3	2-8 fl oz	0	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bumper 41.8EC ( <b>Green and leeks</b> )	3	2-8 fl oz	0	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Bumper ES ( <b>Green and leeks</b> )	3	2-8 fl oz	0	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Fitness ( <b>Green and leeks</b> )	3	2-8 fl oz	0	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Tilt ( <b>Green and leeks</b> )	3	2-8 fl oz	0	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Topaz ( <b>Green and leeks</b> )	3	2-8 fl oz	0	16 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quadris	11	9-15.5 fl oz	0	92.3 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quadris Opti ( <b>dry, garlic only</b> )	11, M	1.6-3.2 pt	7	3 apps
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quadris Opti ( <b>green, leek, shallots</b> )	11, M	1.6-3.2 pt	14	3 apps
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quadris Top ( <b>dry only</b> )	11, 3	12-14 fl oz	7	56 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quadris Top ( <b>green only</b> )	11, 3	12-14 fl oz	7	42 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quilt ( <b>dry only</b> )	11, 3	14-27.5 fl oz	14	55.3 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quilt ( <b>green only</b> )	11, 3	14-27.5 fl oz	0	55.3 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quilt Xcel ( <b>dry only</b> )	11, 3	14-26 fl oz	14	56 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Quilt Xcel ( <b>green only</b> )	11, 3	14-26 fl oz	0	56 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Reason 500SC	11	5.5 fl oz	7	22 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Ridomil Gold Bravo ( <b>dry, garlic</b> )	4, M	2.5 pt	7	15 lb a.i.
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Ridomil Gold Bravo ( <b>green, leeks, shallots</b> )	4, M	2.5 pt	14	6.75 lb a.i.
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Satori	11	6-12 fl oz	0	92.3 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Scala SC	9	9-18 fl oz	7	54 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Serenade ASO <sup>OG</sup>	44	2-6 qt	7	See label
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Serenade MAX <sup>OG</sup>	44	1-3 lb	3	See label
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Switch 62.5WG	9, 12	11-14 oz	7	56 oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Tanos	11, 27	8 oz	7	84 oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Monsoon ( <b>Dry, garlic and shallot</b> )	3	4-6 fl oz	7	12 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Onset 3.6L ( <b>Dry, garlic and shallot</b> )	3	4-6 fl oz	7	12 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Tebustar 3.6L ( <b>Dry, garlic and shallot</b> )	3	4-6 fl oz	7	12 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Toledo 3.6F ( <b>Dry, garlic and shallot</b> )	3	4-6 fl oz	7	12 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Monsoon ( <b>Green and leeks</b> )	3	4-6 fl oz	7	24 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Onset 3.6L ( <b>Green and leeks</b> )	3	4-6 fl oz	7	24 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Tebustar 3.6L ( <b>Green and leeks</b> )	3	4-6 fl oz	7	24 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Toledo 3.6F ( <b>Green and leeks</b> )	3	4-6 fl oz	7	24 fl oz
Botrytis leaf blight, Neck rot, Purple blotch and Stemphylium blight	Vanguard WG ( <b>Green and leeks</b> )	9	10 oz	7	28 oz
Downy mildew ( <i>Peronospora destructor</i> )	Actigard 50WG ( <b>dry only</b> )	21	0.75-1 oz	7	4 oz
Downy mildew ( <i>Peronospora destructor</i> )	Actinovate AG	44	3-12 oz	0	See label
Downy mildew ( <i>Peronospora destructor</i> )	Aliette WDG ( <b>dry only</b> )	33	2-3 lb	7	7 app
Downy mildew ( <i>Peronospora destructor</i> )	Alude	33	2 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora destructor</i> )	Cabrio EG	11	12 oz	7	72 oz
Downy mildew ( <i>Peronospora destructor</i> )	Cease Biofungicide <sup>OG</sup>	44	3-6 qt/100 gal	0	See label
Downy mildew ( <i>Peronospora destructor</i> )	Bravo Ultrex ( <b>Dry and Garlic</b> )	M	0.9-2.7 lb	7	18.2 lb
Downy mildew ( <i>Peronospora destructor</i> )	Bravo ( <b>Dry and Garlic</b> )	M	1-3 pt	7	20 pt
Downy mildew ( <i>Peronospora destructor</i> )	Bravo ZN ( <b>Dry and Garlic</b> )	M	1.5-4.25 pt	7	29 pt
Downy mildew ( <i>Peronospora destructor</i> )	Chloronil 720 ( <b>Dry and Garlic</b> )	M	1-3 pt	7	20 pt
Downy mildew ( <i>Peronospora destructor</i> )	Chlorothalonil ( <b>Dry and Garlic</b> )	M	1-3 pt	7	20 pt
Downy mildew ( <i>Peronospora destructor</i> )	Echo 720 ( <b>Dry and Garlic</b> )	M	1-2 pt	7	1.5 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Equus 720SST ( <b>Dry and Garlic</b> )	M	1-3 pt	7	20 pt
Downy mildew ( <i>Peronospora destructor</i> )	Equus 500ZN ( <b>Dry and Garlic</b> )	M	1.5-4.25 pt	7	29 pt
Downy mildew ( <i>Peronospora destructor</i> )	Intiate ( <b>Dry and Garlic</b> )	M	1-3 pt	7	20 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora destructor</i> )	Initiate ZN ( <b>Dry and Garlic</b> )	M	1.5-4.25 pt	7	29 pt
Downy mildew ( <i>Peronospora destructor</i> )	Bravo Ultrex ( <b>Green, leeks, shallots</b> )	M	1.47-2.7 lb	14	8.2 lb
Downy mildew ( <i>Peronospora destructor</i> )	Bravo ( <b>Green, leeks, shallots</b> )	M	1.5-3 pt	14	9 pt
Downy mildew ( <i>Peronospora destructor</i> )	Bravo ZN ( <b>Green, leeks, shallots</b> )	M	2.25-4.25 pt	14	17 pt
Downy mildew ( <i>Peronospora destructor</i> )	Chloronil 720 ( <b>Green, leeks, shallots</b> )	M	1.5-3 pt	14	9 pt
Downy mildew ( <i>Peronospora destructor</i> )	Chlorothalonil ( <b>Green, leeks, shallots</b> )	See label	1.5-3 pt	14	9 pt
Downy mildew ( <i>Peronospora destructor</i> )	Echo 720 ( <b>Green, leeks, shallots</b> )	M	1.5-3 pt	14	6.7 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Equus 720SST ( <b>Green, leeks, shallots</b> )	M	1.5-3 pt	14	9 pt
Downy mildew ( <i>Peronospora destructor</i> )	Equus 500ZN ( <b>Green, leeks, shallots</b> )	M	2.25-4.25 pt	14	13 pt
Downy mildew ( <i>Peronospora destructor</i> )	Intiate ( <b>Green, leeks, shallots</b> )	M	1.5-3 pt	14	3 apps
Downy mildew ( <i>Peronospora destructor</i> )	Initiate ZN ( <b>Green, leeks, shallots</b> )	M	2.25-4.25 pt	14	13 pt
Downy mildew ( <i>Peronospora destructor</i> )	Badge SC	M	1.5 pt	NA	21.1 pt
Downy mildew ( <i>Peronospora destructor</i> )	Badge X2 <sup>OG</sup>	M	0.75 lb	NA	6 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Champ DP DRY	M	1.33 lb	NA	16 lb
Downy mildew ( <i>Peronospora destructor</i> )	Champ Formula 2	M	1.33 pt	NA	16.5 pt
Downy mildew ( <i>Peronospora destructor</i> )	Champ WG <sup>OG</sup>	M	2 lb	NA	12 lb
Downy mildew ( <i>Peronospora destructor</i> )	Kentan DF	M	2 lb	NA	6 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Kocide 3000	M	0.75-1.5 lb	NA	20 lb
Downy mildew ( <i>Peronospora destructor</i> )	Kocide 2000	M	1.5 lb	NA	17.1 lb
Downy mildew ( <i>Peronospora destructor</i> )	Cuprofix Ultra 40 ( <b>dry, green, garlic</b> )	M	1.25-2.25 lb	NA	15 lb
Downy mildew ( <i>Peronospora destructor</i> )	Cuproxat	M	2.5-4.9 pt	7	29.6 pt
Downy mildew ( <i>Peronospora destructor</i> )	Forum	40	6 fl oz	0	30 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Dithane F45 Rainshield	M	2.4 qt	7	24 qt
Downy mildew ( <i>Peronospora destructor</i> )	Dithane M45	M	3 lb	7	30 lb
Downy mildew ( <i>Peronospora destructor</i> )	Manzate Flowable ( <b>dry, garlic, shallot</b> )	M	2.4 qt	7	24 qt
Downy mildew ( <i>Peronospora destructor</i> )	Manzate Max ( <b>dry, garlic, shallot</b> )	M	1.6-2.4 qt	7	24 qt
Downy mildew ( <i>Peronospora destructor</i> )	Manzate Pro-Stick ( <b>dry, garlic, shallot</b> )	M	3 lb	7	30 lb
Downy mildew ( <i>Peronospora destructor</i> )	Penncozeb 75DF ( <b>dry, garlic, shallot</b> )	M	2-3 lb	7	24 lb
Downy mildew ( <i>Peronospora destructor</i> )	Penncozeb 80WP ( <b>dry, garlic, shallot</b> )	M	2-3 lb	7	24 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora destructor</i> )	ManKocide ( <b>dry only</b> )	M	2.5 lb	7	20 lb
Downy mildew ( <i>Peronospora destructor</i> )	Omega 500F	29	1 pt	7	6 app
Downy mildew ( <i>Peronospora destructor</i> )	Orondis Opti	M5, U15	1.75-2.5 pt	14	10 pt
Downy mildew ( <i>Peronospora destructor</i> )	Orondis Ultra A	U15	2-4.8 fl oz	0	19.2 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Orondis Ultra B	40	8 fl oz	7	24 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Orondis Ultra (Premix)	40, U15	5.5-8 fl oz	7	32 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Confine Extra	33	1-4 qt	0	See label
Downy mildew ( <i>Peronospora destructor</i> )	Phostrol ( <b>dry only</b> )	33	2.5-3.75 pt	0	7 app
Downy mildew ( <i>Peronospora destructor</i> )	Rampart	33	1-3 qt/100 gal	0	See label
Downy mildew ( <i>Peronospora destructor</i> )	Fosphite	33	1-3 qt/100 gal	0	6 app
Downy mildew ( <i>Peronospora destructor</i> )	Fungi-phite	33	1-5 qt	0	7 app
Downy mildew ( <i>Peronospora destructor</i> )	Helena ProPhyt	33	4 pt	0	See label
Downy mildew ( <i>Peronospora destructor</i> )	Presidio	43	3-4 fl oz	2	12 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Pristine	7, 11	18.5 oz	7	111 oz
Downy mildew ( <i>Peronospora destructor</i> )	Quadris	11	9-15.5 fl oz	0	92.3 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Quadris Opti ( <b>dry, garlic only</b> )	11, M	1.6-3.2 pt	7	3 apps
Downy mildew ( <i>Peronospora destructor</i> )	Quadris Opti ( <b>green, leek, shallots</b> )	11, M	1.6-3.2 pt	14	3 apps
Downy mildew ( <i>Peronospora destructor</i> )	Quilt Xcel ( <b>dry only</b> )	11, 3	14-26 fl oz	14	56 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Quilt Xcel ( <b>green only</b> )	11, 3	14-26 fl oz	0	56 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Reason 500SC	11	5.5 fl oz	7	22 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Revus	40	8 fl oz	7	32 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Ridomil Gold Bravo ( <b>dry, garlic</b> )	4, M	2.5 pt	7	15 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Ridomil Gold Bravo ( <b>green, leeks, shallots</b> )	4, M	2.5 pt	14	6.75 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Ridomil Gold MZ WG	4, M	2.5 lb	7	4 app
Downy mildew ( <i>Peronospora destructor</i> )	Ridomil Gold Copper	4, M	2 lb	10	0.4 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Ridomil Gold Copper	4, M	2 lb	7	0.3 lb a.i.
Downy mildew ( <i>Peronospora destructor</i> )	Satori	11	6-12 fl oz	0	92.3 fl oz
Downy mildew ( <i>Peronospora destructor</i> )	Serenade ASO <sup>OG</sup>	44	2-6 qt	7	See label
Downy mildew ( <i>Peronospora destructor</i> )	Serenade MAX <sup>OG</sup>	44	1-3 lb	3	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora destructor</i> )	Trilogy <sup>OG</sup>	See label	1%/100 gal	See label	See label
Downy mildew ( <i>Peronospora destructor</i> )	Zampro	45, 40	14 fl oz	0	42 fl oz
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	0.5-1 pt <sup>5</sup>	See label	1 lb a.i.
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	1-2 pt <sup>5</sup>	0	4 pt
Damping-off ( <i>Pythium</i> spp.)	Metastar 2E	4	2-4 pt <sup>5</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	Uniform	11, 4	0.34 fl oz <sup>6</sup>	See label	1 app
Southern blight ( <i>Agroathelia rolfsii</i> )	Blocker 4F	14	4.5-7.5 pt/100gal	0	7.5 lb a.i.
Southern blight ( <i>Agroathelia rolfsii</i> )	Aftershock	11	2-5.7 fl oz	0	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Evito 480SC	11	2-5.7 fl oz	0	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Priaxor	11, 7	4-8 fl oz	0	24 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Cabrio	11	12-16 oz	0	96 fl oz
White rot ( <i>Sclerotinia cepivorum</i> )	Cannonball WP <b>(dry, garlic, shallots only)</b>	12	7 oz	7	32 oz
White rot ( <i>Sclerotinia cepivorum</i> )	Botran 5F <b>(dry, garlic, shallots only)</b>	14	2-3.2 qt	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Botran 75W <b>(dry, garlic, shallots only)</b>	14	3-5.3 lb	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Fontelis <b>(dry, garlic, shallots only)</b>	7	16-24 fl oz	3	72 fl oz
White rot ( <i>Sclerotinia cepivorum</i> )	Monsoon <b>(dry, garlic, shallots only)</b>	3	20.5 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Onset 3.6L <b>(dry, garlic, shallots only)</b>	3	20.5 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Orious 3.6F <b>(dry, garlic, shallots only)</b>	3	20.5 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Tebu-crop 3.6F <b>(dry, garlic, shallots only)</b>	3	20.5 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Tebustar 3.6L <b>(dry, garlic, shallots only)</b>	3	20.5 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Tebustar 3.6L <b>(dry, garlic, shallots only)</b>	3	20.5 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Quadris OPTI <b>(dry, garlic, shallots only)</b>	11, M	1.6-3.2 pt	7	3 apps
White rot ( <i>Sclerotinia cepivorum</i> )	Quilt Xcel <b>(dry, garlic, shallots only)</b>	3, 11	17.5-26 fl oz	14	56 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
White rot ( <i>Sclerotinia cepivorum</i> )	Switch 62.5WG (dry, garlic, shallots only)	9, 12	7-14 oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	85 WDG (dry, garlic, shallots only)	1	0.4-0.6 oz <sup>6</sup>	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Incognito 4.5F (dry, garlic, shallots only)	1	40 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Topsin 4.5FL (dry, garlic, shallots only)	1	40 fl oz	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Topsin M 70WDG (dry, garlic, shallots only)	1	2 lb	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Topsin M 70WP (dry, garlic, shallots only)	1	2 lb	See label	1 app
White rot ( <i>Sclerotinia cepivorum</i> )	Topsin M WSB (dry, garlic, shallots only)	1	2 lb	See label	1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

<sup>6</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

## Peas (Garden, Green and Sweet)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Gray mold ( <i>Botrytis cinerea</i> )	Endura 70WG	7	8-11 oz	7	2 app
Gray mold ( <i>Botrytis cinerea</i> )	Fontelis 1.67F	7	14-30 fl oz	0	72 fl oz
Gray mold ( <i>Botrytis cinerea</i> )	Priaxor 500SC	11, 7	4-8 fl oz	7	16 fl oz
Powdery mildew ( <i>Erysiphe pisi</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Kocide 3000	M	0.5-1.3 lb	0	13.2 lb
Powdery mildew ( <i>Erysiphe pisi</i> )	Kocide 2000	M	1-2.3 lb	7	11.3 lb
Powdery mildew ( <i>Erysiphe pisi</i> )	Champ WG <sup>OG</sup>	M	1.6 lb	0	7.9 lb
Powdery mildew ( <i>Erysiphe pisi</i> )	Badge SC <sup>5</sup>	M	1-2.5 pt	0	13.9 pt
Powdery mildew ( <i>Erysiphe pisi</i> )	Badge X2 <sup>OG, 5</sup>	M	0.5-1.3 lb	0	4 lb
Powdery mildew ( <i>Erysiphe pisi</i> )	Cuprofix Ultra-40	M	1-2 lb	0	9.9 lb
Powdery mildew ( <i>Erysiphe pisi</i> )	Cuproxtat	M	2-3.9 pt	0	19.5 pt
Powdery mildew ( <i>Erysiphe pisi</i> )	Endura 70WG	7	8-11 oz	7	22 oz
Powdery mildew ( <i>Erysiphe pisi</i> )	Fontelis 1.67F	7	14-30 fl oz	0	72 fl oz
Powdery mildew ( <i>Erysiphe pisi</i> )	MasterCop	M	0.5-1 pt	0	7 pt
Powdery mildew ( <i>Erysiphe pisi</i> )	Milstop <sup>OG</sup>	See label	2-5 lb/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Confine Extra	33	1-3 qt	See label	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Fungi-phite	33	1-2 qt	See label	6 app
Powdery mildew ( <i>Erysiphe pisi</i> )	Helena ProPhyt	33	2-4 pt	See label	7 app
Powdery mildew ( <i>Erysiphe pisi</i> )	Priaxor 500SC	11, 7	4-8 fl oz	7	16 fl oz
Powdery mildew ( <i>Erysiphe pisi</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Microfine Sulfur	M	3.8-36 lb	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Microthiol Disperss	M	3-10 lb	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Yellow Jacket Wettable	M	3.8-36 lb	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Top Cop with Sulfur	M	2 qt	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	0.5-1 pt <sup>6</sup>	0	1 app
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	1-2 pt <sup>6</sup>	3	2 pt
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-4 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fungi-phite	33	1-2 qt	See label	6 app
Damping-off ( <i>Pythium</i> spp.)	Helena Prophyt	33	2-4 pt	See label	7 app
Rust ( <i>Uromyces</i> sp.)	Fontelis 1.67F	7	14-30 fl oz	0	72 fl oz
Rust ( <i>Uromyces</i> sp.)	Priaxor 500SC	11, 7	4-8 fl oz	7	16 fl oz
Rust ( <i>Uromyces</i> sp.)	Quadris 2.08F	11	6.2 fl oz	0	92 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Contans WG <sup>OG</sup>	See label	See label	0	1 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Endura 70WG	7	8-11 oz	7	2 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Fontelis	7	14-30 fl oz	0	72 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Priaxor 500SC	11, 7	4-8 fl oz	7	16 fl oz

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<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Do not use in a spray solution with a pH less than 6.5.

<sup>6</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

## Peas (Southern, Dry)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Quilt 1.66SC	3, 11	14 fl oz	7	3 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Priaxor 4.17SC	7, 11	4-8 fl oz	7	2 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Fontelis	7	14-30 oz	0	72 fl oz
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Quadris 2.08F	11	6.2-15.4 fl oz	0	92 fl oz
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Headline 2.09	11	6-9 fl oz	7	2 app
Alternaria leaf and pod spot ( <i>Alternaria alternata</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	0	See label
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Bravo Ultrex	M	1.25-1.8 lb	7	7.3 lb
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Bravo WeatherStix	M	1.375-2 pt	7	8 pt
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Topsin M 70WP	1	1.5-2 lb	14	4 lb
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Incognito 4.5F	1	30-40 fl oz	14	80 fl oz
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Thiophanate-methyl 85WDG	1	0.8-1.6 lb	28	3.2 lb
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Quilt 1.66SC	11, 3	14 fl oz	0	42 fl oz
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Quilt Xcel	11, 3	10.5-14 fl oz	0	42 fl oz
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Priaxor 4.17SC	7, 11	4-8 fl oz	7	2 apps
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Fontelis	7	14-30 fl oz	7	72 fl oz
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Quadris 2.08F	11	6-15.5 fl oz	0	4 app
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Quadris Opti	11, M	1.6-2.4 pt	0	4 app
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Headline	11	6-9 fl oz	21	2 app
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Tilt	3	4 fl oz	7	12 fl oz
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Cueva <sup>OG</sup>	M	0.2-2 gal	See label	See label
Anthracnose ( <i>Colletotrichum lindemuthianum</i> )	Nordox 75WG <sup>OG</sup>	M	0.66-2.5 lb	See label	See label
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Kocide 3000	M	0.5-1.25 lb	0	15.8 lb
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Kocide 2000	M	0.75-2.25 lb	0	13.5 lb
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Champ WG <sup>OG</sup>	M	1.58 lb	7	9.48 lb
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Badge SC	M	1-2 pt	7	16.6 pt
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Badge X2 <sup>OG</sup>	M	0.5-1.25 lb	7	2.65 lb
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Cuprofix-Ultra 40	M	0.75-2 lb	See label	11.19 lb
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Cuproxat	M	1.5-3.9 pt	See label	23.4 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Cueva <sup>0G</sup>	M	0.5-2 gal/100 gal	See label	See label
Bacterial blight ( <i>Pseudomonas syringae</i> pv. <i>pisi</i> , <i>P. s.</i> pv. <i>syringae</i> )	Nordox 75WG <sup>0G</sup>	M	0.6-2.5 lb	See label	See label
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Proline 480SC (white mold)	3	4.3-5.7 fl oz	7	3 app
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Aproach	11	8-12 fl oz	7	24 fl oz
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Rovral 4F	2	1.5-2 pt	14	2 app
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Topsin M 70WP	1	1.5-2 lb	14	4 lb
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Incognito 4.5F	1	30-40 fl oz	14	80 fl oz
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	85 WDG	1	0.8-1.6 lb	28	3.2 lb
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Fontelis	7	14-30 oz	7	72 fl oz
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Endura	7	8-11 oz	7	2 app
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Cannonball 50WP	12	7 oz	7	28 oz
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Switch 62.5WG	12, 9	11-14 oz	2	56 oz
Botrytis gray mold ( <i>Botrytis cinerea</i> ) and White mold ( <i>Sclerotinia sclerotiorum</i> )	Cueva <sup>0G</sup>	M	0.5-2 gal/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold PC GR	4, 14	0.75 lb <sup>6</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	0.5-1.0 pt <sup>5</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	MetaStar 2E	4	2-4 pt <sup>5</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	1-2 pt <sup>5</sup>	See label	1 app
Damping-off ( <i>Pythium</i> spp.)	Uniform	4, 11	0.34 fl. oz <sup>6</sup>	See label	1 app
Damping-off ( <i>Rhizoctonia</i> spp.)	Quadris 2.08F	11	0.4-0.8 fl oz <sup>6</sup>	See label	1 app
Damping-off ( <i>Rhizoctonia</i> spp.)	Headline	11	0.1-0.8 fl oz <sup>6</sup>	See label	1 app
Damping-off ( <i>Rhizoctonia</i> spp.)	Blocker 4F	14	2.2-3.3 pt <sup>6</sup>	See label	1 app
Damping-off ( <i>Rhizoctonia</i> spp.)	Uniform	4, 14	0.34 fl oz <sup>6</sup>	See label	1 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Aproach	11	6-12 fl oz	7	24 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Bravo Ultrex	M	1.25-1.8 lb	7	7.3 lb
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Bravo WeatherStix	M	1.375-2 pt	7	8 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Fontelis	7	14-30 fl oz	0	72 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Quadris 2.08F	11	6.2-15.4 fl oz	0	4 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Quadris Opti	11, M	1.6-2.4 pt	See label	4 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Ascochyta</i> spp., <i>Cercospora</i> spp.)	Headline	11	6-9 fl oz	21	2 app
Powdery mildew ( <i>Erysiphe pisi</i> )	Endura	7	8-11 oz	7	2 app
Powdery mildew ( <i>Erysiphe pisi</i> )	Priaxor 4.17SC	7, 11	4-8 fl oz	7	2 app
Powdery mildew ( <i>Erysiphe pisi</i> )	Fontelis	7	14-30 oz	0	72 fl oz
Powdery mildew ( <i>Erysiphe pisi</i> )	Headline (dry beans)	11	6-9 fl oz	21	2 app
Powdery mildew ( <i>Erysiphe pisi</i> )	Nu-Cop 50DF	M	1.5 lb	1	7.5 lb
Powdery mildew ( <i>Erysiphe pisi</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	sulfur 80% <sup>OG</sup>	M2	20 lb	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	sulfur 90% <sup>OG</sup>	M2	15 lb	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	sulfur 98% <sup>OG</sup>	M2	45 lb	0	See label
Powdery mildew ( <i>Erysiphe pisi</i> )	Armcarb 100 <sup>OG</sup>	See label	2.5-5 lb	0	See label
Rhizocontia web blight, Pod tip rot, ( <i>Rhizocontia</i> spp.)	Tilt	3	4 fl oz	7	12 fl oz
Rhizocontia web blight, Pod tip rot, ( <i>Rhizocontia</i> spp.)	Quadris 2.08F	11	6-15.5 fl oz	0	4 app
Rhizocontia web blight, Pod tip rot, ( <i>Rhizocontia</i> spp.)	Quadris Opti	11, M	1.6-2.4 fl oz	See label	4 app
Rhizocontia web blight, Pod tip rot, ( <i>Rhizocontia</i> spp.)	Quilt	11, 3	14 fl oz	7	42 fl oz
Rhizocontia web blight, Pod tip rot, ( <i>Rhizocontia</i> spp.)	Quilt Xcel	11, 3	10.5-14 fl oz	7	42 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Approach	11	6-12 fl oz	7	24 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Proline 480SC	3	5.7 fl oz	7	17 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Rally 40WSP	3	4-5 oz	0	20 oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Folicur 3.6F	3	4-6 fl oz	7	12 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Quilt 1.66SC	3, 11	14 fl oz	7	3 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Priaxor 4.17SC	7, 11	4-8 fl oz	7	2 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Fontelis	7	14-30 oz	0	72 fl oz
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Quadris 2.08F	11	6.2-15.4 fl oz	0	4 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Quadris Opti	11, M	1.6-2.4 pt	14	4 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Headline	11	6-9 fl oz	21	2 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Bravo Ultrex	M	1.25-1.8 lb	7	4 app
Rust ( <i>Phakopsora pachyrhizi</i> , <i>Uromyces</i> spp.)	Bravo WeatherStix	M	1.375-2 pt	7	8pt

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

<sup>6</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

## Peppers

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Aprvoia Top	3, 11	10.5-13.5 fl oz	0	53.6 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Ariston	27, M	2-2.44 pt	3	18.1 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Quadris	11	6-15.5 fl oz	0	61.5 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Quadris Top	11, 3	8-14 fl oz	0	55.3 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Satori	11	6-15.5 fl oz	0	61.5 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Cabrio EG	11	8-12 oz	0	96 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Bravo Ultrex	M	1.4 lb	3	10.9 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Chloronil 720	M	1.5 pt	3	12 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Echo 720	M	1.5 pt	3	9 lb a.i.
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Equus 720SST	M	1.5 pt	3	12 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Kocide 3000	M	0.8-1.3 lb	0	39.5 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Kocide 2000	M	1.5-2.3 lb	0	33.9 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Badge SC	M	1-2.3 pt	3	41.7 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Badge X2 <sup>OG</sup>	M	0.8-1.3 lb	3	11.9 lb Cu
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Cuprofix-Ultra 40	M	0.8-2 lb	3	29.5 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Dexter Xcel	M3, 11, 3	48 fl oz	14	378 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Flint	11	3-4 oz	3	16 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Fontelis	7	24 fl oz	0	72 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Inspire Super	9, 3	16-20 fl oz	0	47 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	ManKocide	M	2-3 lb	See label	39 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	MasterCop	M	0.5-3 pt	7	30 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Priaxor	7, 11	4-8 fl oz	0	24 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Reason 500SC	11	5.5-8.2 fl oz	14	24.6 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Serenade Optimum	44	4-20 oz	See label	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Tanos	11, 27	8-10 oz	3	72 oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Top Cop with Sulfur	11, M	2 qt	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Topguard EQ	11, 3	4-8 fl oz	0	4 app
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Trilogy	See label	1%	See label	See label
Bacterial soft rot ( <i>Pectobacterium carotovora</i> subsp. <i>carotovora</i> )	Tanos	11, 27	8-10 oz	3	72 oz
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Actigard 50WG ( <b>Chile only</b> )	21	0.3-0.8 oz	14	6 oz
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Agri-Mycin 17 <sup>OG,5</sup>	See label	200 ppm	See label	See label
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Cease	See label	3-6 qt/100 gal	See label	See label
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Kocide 3000	M	0.8-1.3 lb	0	39.5 lb
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Kocide 2000	M	1.5-2.3 lb	0	33.9 lb
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Champ WG <sup>OG</sup>	M	1.6 lb	0	23.7 lb
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Badge SC	M	1-2.3 pt	3	41.7 pt
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Badge X2 <sup>OG</sup>	M	0.8-1.3 lb	3	11.9 lb Cu
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Cuprofix-Ultra 40	M	0.8-2 lb	3	29.5 lb
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Cuproxtat	M	2.4-3.8 pt	3	58.4 pt
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	ManKocide	M	2-3 lb	7	39 lb
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	MasterCop	M	0.5-3 pt	See label	30 pt
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Serenade <sup>OG</sup> Optimum	44	14-20 oz	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	See label	See label
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Tanos	27, 11	8-10 oz	3	72 oz
Bacterial seedling blight ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Top Cop with Sulfur	M	2 qt	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Actigard 50WG ( <b>Chile only</b> )	P1	0.3-0.8 oz	14	6 oz
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Agri-Mycin 17 <sup>OG,5</sup>	See label	200 ppm	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Cease	See label	3-6 qt/100 gal	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Kocide 3000	M	0.8-1.3 lb	0	39.5 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Kocide 2000	M	1.5-2.3 lb	0	33.9 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Champ WG <sup>OG</sup>	M	1.6 lb	0	23.7 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Badge SC	M	1-2.3 pt	3	41.7 pt
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Badge X2 <sup>OG</sup>	M	0.8-1.3 lb	3	11.9 lb Cu
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Cuprofix-Ultra 40	M	0.8-2 lb	3	29.5 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Cuproxat	M	2.4-3.8 pt	3	58.4 pt
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	ManKocide	M	2-3 lb	7	39 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	MasterCop	M	0.5-3 pt	See label	30 pt
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Serenade <sup>OG</sup> Optimum	44	14-20 oz	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Serenade <sup>OG</sup> MAX	44	1-3 lb	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Tanos	27, 11	8-10 oz	3	72 oz
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Top Cop with Sulfur	M	2 qt	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Blossom-end rot	Blossom-end rot results from a calcium (Ca) deficiency in young, rapidly expanding pepper fruit tissues. The disorder can be intensified by excess nitrogen. Have soil and water tested for Ca levels prior to planting. Foliar applications of Ca fertilizers are not likely to prevent or reduce. Blossom-end rot incidence, as Ca ions are not actively mobilized from the leaf downward to the fruits.	NA	NA	NA	NA
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Bravo Ultrex	M	1.4 lb	3	10.9 lb
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Chloronil 720	M	1.5 pt	3	12 pt
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Echo 720	M	1.5 pt	3	9 lb a.i.
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Equus 720SST	M	1.5 pt	3	12 pt
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Kocide 3000	M	0.8-1.3 lb	0	39.5 lb
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Kocide 2000	M	1.5-2.3 lb	0	33.9 lb
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Badge SC	M	1-2.3 pt	3	41.7 pt
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Badge X2 <sup>OG</sup>	M	0.8-1.3 lb	3	11.9 lb Cu
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Cuprofix-Ultra 40	M	0.8-2 lb	3	29.5 lb
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Manzate Pro-Stick	M	1.6-3.2 lb	7	12.8-9.2 lb <sup>6</sup>
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	ManKocide	M	2-3 lb	7	39 lb
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	MasterCop	M	0.5-3 pt	See label	30 pt
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Quadris Top 29.6SC	11, 3	8-14 fl oz	0	55.3 fl oz
Cercospora leaf spot (or Frog-eye leaf spot) ( <i>Cercospora capsici</i> )	Top Cop with Sulfur	M	2 qt	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Cercospora leaf spot (or Frogeye leaf spot) ( <i>Cercospora capsici</i> )	Topguard EQ	11, 3	4-8 fl oz	0	4 app
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Elumin	22	8 fl oz	2	16 fl oz
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Ridomil Gold SL	4	1 pt <sup>7</sup>	7	1.5 lb a.i.
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Ultra Flourish	4	2 pt <sup>7</sup>	7	6 pt
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Metastar 2E	4	4-8 pt <sup>7</sup>	7	12 pt
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Orondis Gold B	4	1 pt	7	2 app
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Orondis Gold 200	U15	4.8-9.6 fl oz	0	19.2 fl oz
Phytophthora crown and root rot ( <i>Phytophthora capsici</i> )	Zampro	45, 40	14 fl oz	4	42 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Badge SC	M	1-2.3 pt	0	41.7 pt
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Badge X2 <sup>OG</sup>	M	0.8-1.3 lb	0	11.9 lb Cu
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Forum	40	6 fl oz <sup>8</sup>	0.5	30 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Elumin	22	8 fl oz	2	16 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Manzate Pro-Stick	M	1.6-3.2 lb	0	12.8-19.2lb <sup>6</sup>
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	ManKocide	M	2-3 lb	0	39 lb
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Micora	40	8 fl oz <sup>8</sup>	See label	2 app
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Presidio	43	3-4 fl oz	2	12 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Orondis Gold 200	U15	4.8-9.6 fl oz	0	19.2 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Orondis Ulta (Premix)	U15, 40	5.5-8 fl oz	1	32 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Ranman	21	2.1-2.8 fl oz	0	16.5 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Reason 500SC	11	8.2 fl oz	14	24.6 fl oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Revus	40	8 fl oz	1	32 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Tanos	27, 11	8-10 oz	3	72 oz
Phytophthora foliar blight and fruit rot ( <i>Phytophthora capsici</i> )	Zampro	45, 40	14 fl oz	4	42 fl oz
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1 pt <sup>7</sup>	7	4 app
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold/Copper	4, M	1 pt <sup>7</sup>	7	4 app
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	2 pt <sup>7</sup>	7	6 pt
Damping-off ( <i>Pythium</i> spp.)	Metastar 2E	4	4-8 pt <sup>7</sup>	7	12 pt
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-3 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fungi-phite	33	1-2 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Orondis Gold B	4	1	7	2 app
Damping-off ( <i>Pythium</i> spp.)	Previcur Flex	28	1.2 pt <sup>9</sup>	5	6 app
Damping-off ( <i>Pythium</i> spp.)	Rootshield Granules	44	2.5-6 lb/0.5acre <sup>7</sup>	See label	6 pt
Damping-off ( <i>Pythium</i> spp.)	Serenade Soil	44	2-6 qt <sup>7</sup>	See label	1 app
Southern blight ( <i>Agroathelia rolfsii</i> )	Blocker 4F	14	4.5-7.5 pt/100gal	0	7.5 lb a.i.
Southern blight ( <i>Agroathelia rolfsii</i> )	Aftershock	11	2-5.7 fl oz	0	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Evito 480SC	11	2-5.7 fl oz	0	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Priaxor	11, 7	4-8 fl oz	0	24 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Cabrio	11	12-16 oz	0	96 fl oz
Target spot ( <i>Corynespora cassiicola</i> )	Cabrio 20EG	11	8-12 oz	0	96 oz
Target spot ( <i>Corynespora cassiicola</i> )	Endura	7	3.5 oz	0	21 oz
Target spot ( <i>Corynespora cassiicola</i> )	Fontelis	7	16-24 fl oz	0	72 fl oz
Target spot ( <i>Corynespora cassiicola</i> )	Aftershock	11	2-5.7 fl oz	3	22.8 fl oz
Target spot ( <i>Corynespora cassiicola</i> )	Evito 480SC	11	2-5.7 fl oz	3	22.8 fl oz
Target spot ( <i>Corynespora cassiicola</i> )	Inspire Super	9, 3	16-20 fl oz	0	47 fl oz
Target spot ( <i>Corynespora cassiicola</i> )	Priaxor	7, 11	4-8 fl oz	0	24 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Viruses	A list of viruses of pepper can be found in Table 1. Plant resistant varieties. For viruses transmitted by insects, control of the insect vector using insecticides, polyethylene or polyethylene coated mulches and/or trap crops are recommended. Seed treatments and good sanitation practices are recommended for noninsect transmitted viruses.	NA	NA	NA	NA

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> **Transplant production only.**

<sup>6</sup> West of the Mississippi river do not apply more than 12.8 lb. product per acre per year. East of the Mississippi river do not apply more than 19.2 lb. product per acre per year.

<sup>7</sup> Soil applications. Refer to individual labels for application directions.

<sup>8</sup> Do not apply alone. Must be applied as a tank mix with another fungicide with a different mode of action.

<sup>9</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

## Potato (Irish)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial stem rot ( <i>Pectobacterium carotovora</i> )	Tanos	27, 11	8 oz	14	6 app
Early blight ( <i>Alternaria solani</i> )	Aftershock	11	2-3.8 fl oz	7	22.8 fl oz
Early blight ( <i>Alternaria solani</i> )	Quadris	11	6-15.5 fl oz	14	123 fl oz
Early blight ( <i>Alternaria solani</i> )	Quadris Opti	11, M	1.6 pt	14	6 app
Early blight ( <i>Alternaria solani</i> )	Quadris Top	11, M	8-14 fl oz	14	55.3 fl oz
Early blight ( <i>Alternaria solani</i> )	Satori	11	6-15.5 fl oz	14	123 fl oz
Early blight ( <i>Alternaria solani</i> )	Cabrio Plus	11, M	2-2.9 lb	14	17.4 lb
Early blight ( <i>Alternaria solani</i> )	Bravo Ultrex	M	0.7-1.4 lb <sup>5</sup>	7	13.6 lb
Early blight ( <i>Alternaria solani</i> )	Bravo WeatherStik	M	0.8-1.5 pt <sup>5</sup>	30	18 pt
Early blight ( <i>Alternaria solani</i> )	Bravo Zn	M	1.1-2.3 pt <sup>5</sup>	7	21.5 pt
Early blight ( <i>Alternaria solani</i> )	Chlorothalonil 720SC	M	0.8-1.5 pt <sup>5</sup>	7	15 pt
Early blight ( <i>Alternaria solani</i> )	Kocide 3000	M	0.5-1.8 lb	0	83.3 lb
Early blight ( <i>Alternaria solani</i> )	Kocide 2000	M	0.8-3 lb	0	71.4 lb
Early blight ( <i>Alternaria solani</i> )	Champ WG <sup>06</sup>	M	1-4 lb	5	50 lb
Early blight ( <i>Alternaria solani</i> )	Badge SC <sup>6</sup>	M	1-3 pt	5	88.2 pt
Early blight ( <i>Alternaria solani</i> )	Badge X2 <sup>06,6</sup>	M	0.5-1.8 lb	5	25 lb Cu
Early blight ( <i>Alternaria solani</i> )	Cuprofix-Ultra 40	M	0.8-3 lb	5	62.5 lb
Early blight ( <i>Alternaria solani</i> )	MasterCop	M	0.5-1.5 pt	5	6 pt
Early blight ( <i>Alternaria solani</i> )	Dexter Max	M3, 11	1.6-2.1 lb	14	16 lb
Early blight ( <i>Alternaria solani</i> )	Dexter SC	11	6-20 fl oz	14	120 fl oz
Early blight ( <i>Alternaria solani</i> )	Endura	7	2.5-4.5 oz	10	2 app
Early blight ( <i>Alternaria solani</i> )	Evito 480SC	11	2-3.8 fl oz	7	22.8 fl oz
Early blight ( <i>Alternaria solani</i> )	Gavel 75DF	M, 22	1.5-2 lb	14	12 lb
Early blight ( <i>Alternaria solani</i> )	Gem 500SC	11	2.9-3.8 fl oz	7	23 fl oz
Early blight ( <i>Alternaria solani</i> )	Headline and Headline SC	11	6-9 fl oz	3	72 fl oz
Early blight ( <i>Alternaria solani</i> )	Iprodione 4L AG	2	1-2 pt	14	4 app
Early blight ( <i>Alternaria solani</i> )	Meteor	2	1-2 pt	14	4 app
Early blight ( <i>Alternaria solani</i> )	Nevado 4F	2	1-2 pt	14	4 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Early blight ( <i>Alternaria solani</i> )	mancozeb dry formulations	M	0.5-2 lb	14	14-15 lb
Early blight ( <i>Alternaria solani</i> )	mancozeb liquid Formulations	M	0.4-1.6 qt	14	11.2 qt
Early blight ( <i>Alternaria solani</i> )	ManKocide	M	1.5-5 lb	14	74.7 lb
Early blight ( <i>Alternaria solani</i> )	Ridomil Gold Bravo SC	4, M	2.5 pt	14	footnote <sup>7</sup>
Early blight ( <i>Alternaria solani</i> )	Ridomil Gold MZ WG	4, M	2.5 lb	14	footnote <sup>7</sup>
Early blight ( <i>Alternaria solani</i> )	Luna Privilege	7	4-6.8 fl oz	7	13.7 fl oz
Early blight ( <i>Alternaria solani</i> )	Previcur Flex	28	0.7-1.2 pt	7	10 lb
Early blight ( <i>Alternaria solani</i> )	Priaxor	7, 11	4-8 fl oz	14	6 pt
Early blight ( <i>Alternaria solani</i> )	Quash	3	2.5-4 oz	1	16 oz
Early blight ( <i>Alternaria solani</i> )	Reason 500SC	11	5.5-8.2 fl oz	14	16 fl oz
Early blight ( <i>Alternaria solani</i> )	Revus Top	3, 40	5.5-7.7 fl oz	14	24.6 fl oz
Early blight ( <i>Alternaria solani</i> )	Rovral 4 Flowable	2	1-2 pt	7	28 fl oz
Early blight ( <i>Alternaria solani</i> )	Scala SC	9	7 fl oz		4 app
Early blight ( <i>Alternaria solani</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Early blight ( <i>Alternaria solani</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	0	See label
Early blight ( <i>Alternaria solani</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Early blight ( <i>Alternaria solani</i> )	Tanos	27, 11	6 oz	14	6 app
Early blight ( <i>Alternaria solani</i> )	Top Cop with Sulfur	M	2-3 qt	See label	See label
Early blight ( <i>Alternaria solani</i> )	Agri-Tin	30	2.5-3.8 oz	7	11.3 oz
Early blight ( <i>Alternaria solani</i> )	Super Tin 4L	30	4-6 fl oz	7	18 fl oz
Early blight ( <i>Alternaria solani</i> )	Super Tin 80WP	30	2.5-5 oz	21	10 oz
Early blight ( <i>Alternaria solani</i> )	Vertisan	7	10-24 fl oz	7	72 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Aftershock	11	3.8 fl oz	7	22.8 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Ariston	27, M5	2 pt	14	17.5 pt
Late blight ( <i>Phytophthora infestans</i> )	Quadris	11	6-15.5 fl oz	14	123 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Quadris Opti	11, M	1.6 pt	14	6 app
Late blight ( <i>Phytophthora infestans</i> )	Quadris Top	11, 3	8-14 fl oz	14	55.3 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Satori	11	6-15.5 fl oz	14	123 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Cabrio Plus	11, M	2.9 lb	14	17.4 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Late blight ( <i>Phytophthora infestans</i> )	Bravo Ultrex	M	0.7-1.4 lb <sup>5</sup>	7	13.6 lb
Late blight ( <i>Phytophthora infestans</i> )	Bravo WeatherStik	M	0.8-1.5 pt <sup>5</sup>	30	18 pt
Late blight ( <i>Phytophthora infestans</i> )	Bravo Zn	M	1.1-2.3 pt <sup>5</sup>	7	21.5 pt
Late blight ( <i>Phytophthora infestans</i> )	Chlorothalonil 720SC	M	0.8-1.5 pt <sup>5</sup>	7	15 pt
Late blight ( <i>Phytophthora infestans</i> )	Kocide 3000	M	0.5-1.8 lb	0	83.3 lb
Late blight ( <i>Phytophthora infestans</i> )	Kocide 2000	M	0.8-3 lb	0	71.4 lb
Late blight ( <i>Phytophthora infestans</i> )	Champ WG <sup>06</sup>	M	1-4 lb	5	50 lb
Late blight ( <i>Phytophthora infestans</i> )	Badge SC <sup>5</sup>	M	1-3 pt	5	88.2 pt
Late blight ( <i>Phytophthora infestans</i> )	Badge X2 <sup>06,6</sup>	M	0.5-1.8 lb	5	25 lb Cu
Late blight ( <i>Phytophthora infestans</i> )	Cuprofix-Ultra 40	M	0.8-3 lb	5	62.5 lb
Late blight ( <i>Phytophthora infestans</i> )	Mastercop	M	0.5-1.5 pt	5	6 pt
Late blight ( <i>Phytophthora infestans</i> )	Dexter Max	11, M3	1.6-2.1 lb	14	16 lb
Late blight ( <i>Phytophthora infestans</i> )	Dexter SC	11	6-20 fl oz	14	120 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Evito 480SC	40	3.8 fl oz	7	22.8 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Forum	22, M	6 fl oz	4	30 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Gavel 75DF	11	1.5-2 lb	14	12 lb
Late blight ( <i>Phytophthora infestans</i> )	Gem 500SC	11	3.8 fl oz	7	23 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Headline and Headline SC	M	6-12 fl oz	3	72 fl oz
Late blight ( <i>Phytophthora infestans</i> )	mancozeb dry formulations	M	0.5-2 lb	14	14-15 lb
Late blight ( <i>Phytophthora infestans</i> )	mancozeb liquid Formulations	M	0.4-1.6 qt	14	11.2 qt
Late blight ( <i>Phytophthora infestans</i> )	ManKocide	4, M	1.5-5 lb	14	74.7 lb
Late blight ( <i>Phytophthora infestans</i> )	Ridomil Gold Bravo	4, M	2.5 pt	14	footnote <sup>7</sup>
Late blight ( <i>Phytophthora infestans</i> )	Ridomil Gold MZ WG	29	2.5 lb	14	10 lb
Late blight ( <i>Phytophthora infestans</i> )	Omega 500SC	See label	5.5 fl oz	14	3.5 pt
Late blight ( <i>Phytophthora infestans</i> )	Confine Extra	33	1-3 qt	See label	See label
Late blight ( <i>Phytophthora infestans</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Late blight ( <i>Phytophthora infestans</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Late blight ( <i>Phytophthora infestans</i> )	Fungi-phite	33	1-2 qt	See label	6 app
Late blight ( <i>Phytophthora infestans</i> )	Helena Prophyt	28	2-4 pt	See label	7 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Late blight ( <i>Phytophthora infestans</i> )	Previcur Flex	7, 11	0.7-1.2 pt	14	6 pt
Late blight ( <i>Phytophthora infestans</i> )	Priaxor	21	4-8 fl oz	7	24 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Ranman	11	1.4-2.8 fl oz	7	27.5 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Reason 500SC	3, 40	5.5-8.2 fl oz	14	24.6 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Revus Top	See label	5.5-7.7 fl oz	14	28 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
Late blight ( <i>Phytophthora infestans</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	0	See label
Late blight ( <i>Phytophthora infestans</i> )	Sonata <sup>OG</sup>	27, 11	2-4 qt	0	See label
Late blight ( <i>Phytophthora infestans</i> )	Tanos	M	6-8 oz	0	6 app
Late blight ( <i>Phytophthora infestans</i> )	Top Cop with Sulfur	30	2-3 qt	14	See label
Late blight ( <i>Phytophthora infestans</i> )	Agri-Tin	30	2.5-3.8 oz	7	11.3 oz
Late blight ( <i>Phytophthora infestans</i> )	Super Tin 4L	30	4-6 fl oz	7	18 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Super Tin 80WP	45, 40	2.5-5 oz	21	10 oz
Late blight ( <i>Phytophthora infestans</i> )	Zampro	22, M5	11-14 fl oz	4	42 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Zing!	See label	24-34 fl oz	7	8 app
Speckle leaf spot (or pepper spotting)	Speckle leaf spot is a result of high ozone levels in the atmosphere and is most likely to occur during the tuber bulking stage. The disorder is intensified by high levels of automobile exhausts, humid with cloudy overcast days and foggy conditions with heavy dew. 'LaChipper' is insensitive to ozone damage.	NA	NA	NA	NA
White mold ( <i>Sclerotinia sclerotiorum</i> )	Cabrio Plus	11, M	2.9 lb	14	17.4 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Endura	7	2.5-4.5 oz	10	20 oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Headline or Headline SC	11	6-12 fl oz	3	72 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Iprodione 4L AG	2	2 pt	14	4 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Meteor	2	2 pt	14	4 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Nevado 4F	2	2 pt	14	4 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Omega 500SC	29	5.5-8 fl oz	14	3.5 pt
White mold ( <i>Sclerotinia sclerotiorum</i> )	Luna Privilege	7	6-6.8 fl oz	7	13.7 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Priaxor	7, 11	4-8 fl oz	7	24 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
White mold ( <i>Sclerotinia sclerotiorum</i> )	Rovral 4 Flowable	2	2 pt	14	4 app
White mold ( <i>Sclerotinia sclerotiorum</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
White mold ( <i>Sclerotinia sclerotiorum</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	0	See label
White mold ( <i>Sclerotinia sclerotiorum</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
White mold ( <i>Sclerotinia sclerotiorum</i> )	85 WDG	1	0.8-1.2 lb	21	3.2 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Incognito 4.5F	1	20-30 fl oz	21	80 fl oz
White mold ( <i>Sclerotinia sclerotiorum</i> )	Nufarm T-methyl 70WSB	1	1-1.5 lb	21	4 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Topsin M 70WDG	1	1-1.5 lb	21	4 lb
White mold ( <i>Sclerotinia sclerotiorum</i> )	Vertisan	7	14-24 fl oz	7	72 fl oz

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Use a lower rate of chlorothalonil when vines are first exposed and leaf wetness occurs. Increase the rate when vines close between rows or late blight forecasting measures 18 disease severity values, or the crop reaches 300 P-days. Refer to labels for detailed application and timing instructions.

<sup>6</sup> Do not use in a spray solution with a pH less than 6.5.

<sup>7</sup> Do not exceed 11.3 lb. a.i. per acre of chlorothalonil containing products. Do not exceed 0.2 a.i. per season of soil-applied and 0.4 lb a.i. per season of foliar-applied mefenoxam.

**Root crops (Beet, Carrot, Parsnip, Radish and Turnip)**

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora parasitica</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Bravo Ultrex ( <b>parsnip only</b> )	M	1.4-1.8 lb	10	7.3 lb
Downy mildew ( <i>Peronospora parasitica</i> )	Bravo WeatherStik ( <b>parsnip only</b> )	M	1.5-2 pt	10	8 pt
Downy mildew ( <i>Peronospora parasitica</i> )	Chlorothalonil 720SC ( <b>parsnip only</b> )	M	1.5-2 pt	10	8 pt
Downy mildew ( <i>Peronospora parasitica</i> )	Echo 90DF ( <b>parsnip only</b> )	M	1.4-1.8 lb	10	6 lb
Downy mildew ( <i>Peronospora parasitica</i> )	Confine Extra	33	1-3 qt	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Fungi-phite	33	1-2 qt	See label	6 app
Downy mildew ( <i>Peronospora parasitica</i> )	Serenade <sup>OG</sup>	See label	See label	See label	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Sonata <sup>OG</sup>	44	2-4 qt	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Top Cop with Sulfur	M	2 qt	0	See label
Downy mildew ( <i>Peronospora parasitica</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Quadris	11	9-15.5 fl oz	0	123 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Satori	11	9-15.5 fl oz	0	123 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Cabrio	11	8-12 oz	0	48 oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Bravo Weather Stik	M	1.5-2 pt	0	20 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Bravo Zn	M	2.3-2.8 pt	0	29 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Equus 720SST	M	1.5-2 pt	0	20 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Kocide 3000	M	0.8-1.5 lb	0	16.7 lb
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Kocide 2000	M	1.5-2.8 lb	0	14.3 lb
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Champ Formula 2	M	1.3 pt	0	13.7 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Badge SC	M	1-1.8 pt	0	17.6 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Badge X2 <sup>OG</sup>	M	0.8-1.5 lb	0	5 lb Cu
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Cuprofix-Ultra 40	M	1.3 lb	0	12.5 lb
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Cuproxat	M	2.5 pt	0	24.6 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Endura	7	4.5 oz	0	22.5 oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Fontelis	7	16-30 fl oz	0	61 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Gem 500SC	11	1.9-2.9 fl oz	7	11.5 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	MasterCop	See label	0.5-1.5 pt	See label	6 pt
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Merivon	7, 11	4-5.5 fl oz	7	16.5 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Pristine	7, 11	8-10.5 oz	0	63 oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Amtide 41.8%	3	4 fl oz	14	16 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Bumper 48.1EC	3	4 fl oz	14	16 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Tilt	3	4 fl oz	14	16 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Quardis Opti	11, M5	2.4 pt	0	6 app
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Quadris Top	11, 3	12-14 fl oz	7	56 fl oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Switch 62.5WG	9, 12	11-14 oz	7	56 oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Switch 62.5WG ( <b>radish only</b> )	9, 12	11-14 oz	7	28 oz
Leaf spots and blights ( <i>Alternaria</i> spp., <i>Cercospora</i> spp.)	Top Cop with Sulfur	M	2 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold GR	4	20-40 lb <sup>5</sup>	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Metastar 2E	4	4-8 pt <sup>6</sup>	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-3 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fungi-phite	33	1-2 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Serenade Soil	44	2-6 qt <sup>6</sup>	See label	See label
Damping-off ( <i>Rhizoctonia</i> spp.)	Quadris 2.08F	11	0.4-0.8 fl oz <sup>7</sup>	See label	1 app
Damping-off ( <i>Rhizoctonia</i> spp.)	Satori	11	0.4-0.8 fl oz <sup>7</sup>	See label	1 app

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Rates refer to band or broadcast applications. Refer to individual labels for per plant in transplant water rates.

<sup>6</sup> Soil applications. Refer to individual labels for application directions.

<sup>7</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

## Spinach

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Quadris	11	6-15.5 fl oz	0	92.3 fl oz
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Satori	11	6-15.5 fl oz	0	92.3 fl oz
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Cabrio	11	12-16 oz	0	64 oz
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Kocide 3000	M	0.8-1.3 lb	0	13.2 lb
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Kocide 2000	M	1.5-2.3 lb	0	11.3 lb
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Champ Formula 2	M	1.3-2.7 pt	0	10.9 pt
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Champ WG <sup>OG</sup>	M	1-1.6 lb	0	7.9 lb
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Badge SC <sup>5</sup>	M	1-2.3 pt	0	13.9 pt
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Badge X2 <sup>OG,5</sup>	M	0.8-1.3 lb	0	4 lb Cu
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Nordox 75WG <sup>OG</sup>	M	2-3 lb	0	See label
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Cuprofix Ultra 40	M	1.3-2 lb	0	9.9 lb
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Mastercop	M	0.5-1 pt	0	5 pt
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Fontelis	7	14-24 fl oz	3	72 fl oz
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Merivon	7, 11	4-11 fl oz	1	33 fl oz
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Switch 62.5WG	9, 12	11-14 oz	0	56 oz
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Top Cop with Sulfur	M	2-4 qt	0	See label
Anthracnose ( <i>Colletortichum dematium</i> ) and Leaf spots ( <i>Cercospora beticola</i> )	Topguard	11, 3	6-8 fl oz	7	4 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Quadris	11	12-15.5 fl oz	0	92.3 fl oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Satori	11	12-15.5 fl oz	0	92.3 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Actigard 50WG	21	0.5-0.8 oz	7	2.3 oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Actinovate AG <sup>OG</sup>	44	3-12 oz	0	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Aliette WDG	33	2-5 lb	3	7 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Cabrio EG 20%	11	12-16 oz	0	64 oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Cease	44	3-6 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Kocide 3000	M	0.8-1.3 lb	0	13.2 lb
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Champ Formula 2	M	1.3-2.7 pt	0	10.9 pt
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Champ WG <sup>OG</sup>	M	1-1.6 lb	0	7.9 lb
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Badge SC <sup>5</sup>	M	1-2.3 pt	0	13.9 pt
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Badge X2 <sup>OG, 5</sup>	M	0.8-1.3 lb	0	4 lb Cu
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Nordox 75WG <sup>OG</sup>	M	2-3 lb	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Curzate 60DF	27	5 oz	1	30 oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Ridomil Gold SL	4	0.3 pt <sup>6</sup>	3-2 <sup>18</sup>	2 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Ultra Flourish	4	0.3 pt <sup>6</sup>	3-2 <sup>18</sup>	2 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Ultra Flourish	4	0.5 pt <sup>6</sup>	3-2 <sup>18</sup>	1.6 pt
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Merivon 4.18SC	7, 11	4-11 fl oz	1	33 fl oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Micora	40	5.5-8 fl oz <sup>7</sup>	See label	2 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	MilStop <sup>OG</sup>	See label	2-5 lb/100 gal	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Alude	33	0.5 gal/40 gal	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Confine Extra	33	1-4 qt	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Fosphite	33	1-3 qt/100 gal	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Fungi-phite	33	1-2 qt	See label	6 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Helena Prophyt	33	2-4 pt	See label	7 app
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Presidio	43	3-4 fl oz	2	12 fl oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Ranman	21	2.8 fl oz	0	16.5 fl oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Reason 500SC	11	5.5-8.2 fl oz	2	24.6 fl oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Revus	40	8 fl oz	1	32 fl oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Sonata <sup>OG</sup>	44	2-4 qt	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Tanos	11,27	8-10 oz	1	84 oz
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Top Cop with Sulfur	M	2-4 qt	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Downy mildew ( <i>Peronospora farinosa</i> f. sp. <i>spinaciae</i> )	Zampro	40,45	14 fl oz	0	42 fl oz
Damping-off ( <i>Pythium</i> spp.)	Ridomil Gold SL	4	1-2 pt <sup>9</sup>	3-21 <sup>10</sup>	1 app
Damping-off ( <i>Pythium</i> spp.)	Ultra Flourish	4	0.5 pt <sup>6</sup>	3-21 <sup>10</sup>	1 app
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-4 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fosphite	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Fungi-phite	33	1-2 qt	See label	6 app
Damping-off ( <i>Pythium</i> spp.)	Ranman	21	2.8 fl oz <sup>9</sup>	0	16.5 fl oz
Damping-off ( <i>Pythium</i> spp.)	Rootshield Granules <sup>OG</sup>	See label	2.5-6 lb/ ½ acre <sup>9</sup>	See label	1 app
White rust ( <i>Albugo occidentalis</i> )	Quadris	11	6-15.5 fl oz	0	92.3 fl oz
White rust ( <i>Albugo occidentalis</i> )	Satori	11	6-15.5 fl oz	0	92.3 fl oz
White rust ( <i>Albugo occidentalis</i> )	Actigard	21	See label	See label	See label
White rust ( <i>Albugo occidentalis</i> )	Aliette WDG	33	See label	See label	See label
White rust ( <i>Albugo occidentalis</i> )	Cabrio	11	8-12 oz	0	64 oz
White rust ( <i>Albugo occidentalis</i> )	Kocide 3000	M	0.8-1.3 lb	0	13.2 lb
White rust ( <i>Albugo occidentalis</i> )	Kocide 2000	M	1.5-2.3 lb	0	11.3 lb
White rust ( <i>Albugo occidentalis</i> )	Champ Formula 2	M	1.3-2.7 pt	0	10.9 pt
White rust ( <i>Albugo occidentalis</i> )	Champ WG <sup>OG</sup>	M	1-1.6 lb	0	7.9 lb
White rust ( <i>Albugo occidentalis</i> )	Badge SC5	M	1-2.3 pt	0	13.9 pt
White rust ( <i>Albugo occidentalis</i> )	Badge X2 <sup>OG,5</sup>	M	0.8-1.3 lb	0	4 lb Cu
White rust ( <i>Albugo occidentalis</i> )	Nordox 75WG <sup>OG</sup>	M	2-3 lb	See label	See label
White rust ( <i>Albugo occidentalis</i> )	Cuprofix 40 Disperss	M	1.3-2 lb	0	9.9 lb
White rust ( <i>Albugo occidentalis</i> )	Mastercop	M	0.5-1 pt	0	5 pt
White rust ( <i>Albugo occidentalis</i> )	Ridomil Gold SL	4	0.3 pt <sup>6</sup>	3-21 <sup>10</sup>	2 app

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
White rust ( <i>Albugo occidentalis</i> )	Ultra Flourish	4	0.5 pt <sup>6</sup>	3-21 <sup>10</sup>	2 app
White rust ( <i>Albugo occidentalis</i> )	Merivon	7, 11	4-11 fl oz	1	33 fl oz
White rust ( <i>Albugo occidentalis</i> )	Presidio	43	3-4 fl oz	2	12 fl oz
White rust ( <i>Albugo occidentalis</i> )	Ranman	21	2.8 fl oz	0	16.5 fl oz
White rust ( <i>Albugo occidentalis</i> )	Reason 500SC	11	5.5-8.2 fl oz	2	24.6 fl oz
White rust ( <i>Albugo occidentalis</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
White rust ( <i>Albugo occidentalis</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	See label	See label
White rust ( <i>Albugo occidentalis</i> )	Tanos	11, 27	8-10 oz	1	84 oz
White rust ( <i>Albugo occidentalis</i> )	Top Cop with Sulfur	M	2-4 qt	See label	See label

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Do not use in a spray solution with a pH less than 6.5.

<sup>6</sup> Shank applications only. Apply 21 days after planting or after the first cutting. Refer to label for additional application instructions.

<sup>7</sup> Do not apply alone. Must be applied as a tank mix with another fungicide with a different mode of action.

<sup>8</sup> **Transplant production only.**

<sup>9</sup> Soil applications. Refer to individual labels for application directions.

<sup>10</sup> PHI varies depending on the rate and mode of application. Refer to label for specific PHI.

## Tomato (Fresh Market)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Aprovia Top	7, 3	10.5-13.5 fl oz	0	4 app
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Ariston	M, 27	2.0-2.44 pt	3	17.5 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Quadris	11	5-6.2 fl oz	0	37 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Quadris Opti	11, M	1.6 pt	0	5 app
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Quadris Top	11, 3	8 fl oz	0	47 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Satori	11	5-6.2 fl oz	0	61.5 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Cabrio	11	8-12 oz	0	96 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Bravo Ultrex	M	1.8-2.6 lb	0	18.3 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Chloronil 720	M	2-2.8 pt	0	20 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Echo 90DF	M	2-3 pt	0	15.1 lb a.i.
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Equus 720SST	M	2-2.8 pt	0	20 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Kocide 3000	M	0.8-1.8 lb	0	26.7 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Kocide 2000	M	1.5-2.3 lb	0	22.8 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Champ WG <sup>OG</sup>	M	1.1 lb	3	16 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Badge SC	M	1.8 pt	3	28.1 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Badge X2 <sup>OG</sup>	M	0.8-1.8 lb	3	8 lb Cu
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Cuprofix-Ultra 40	M	0.8-3 lb	3	20 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Cuproxtat	M	2.5-5 pt	3	39.4 pt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Dexter Xcel	M3, 11, 3	36 fl oz	7	216 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Dexter Max	11, M3	0.8-1.1 lb	5	9.14 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Flint	11	3-4 oz	3	16 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Fontelis 1.67SC	7	24 fl oz	0	72 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Inspire Super 2.82SC	9, 3	16-20 fl oz	0	47 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	mancozeb dry formulations	M	0.5-3 lb <sup>5</sup>	5	21-22.4 lb
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>5</sup>	5	16.8 qt
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	ManKocide	M	1-3 lb	5	42.7-58 lb <sup>5</sup>

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	MilStop <sup>OG</sup>	See label	2-5 lb/100 gal	See label	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	OSO 5%	19	3.75-13 fl oz	0	4.2 oz a.i
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Mettle 125ME	3	6-8 fl oz	0	16 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Priaxor	7, 11	4-8 fl oz	0	24 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Revus Top	3, 40	5.5-7 fl oz	1	28 fl oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Serenade <sup>OG</sup> , Optimum	44	4-20 oz	3	72 oz
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Tanos	27, 11	8-10 oz	See label	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Top Cop with Sulfur	M	2 qt	0	4 app
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Topguard EQ	11, 3	4-8 fl oz	See label	See label
Anthracnose fruit rot ( <i>Colletotrichum</i> spp.)	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Actigard 50WG	P1	0.3-0.8 oz	14	6 oz
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Agri-Mycin 17 <sup>OG, 6</sup>	See label	200 ppm	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Kocide 3000	M	0.8-1.8 lb	0	26.7 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Kocide 2000	M	1.5-3 lb	0	22.8 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Champ WG <sup>OG</sup>	M	1.1 lb	0	16 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Badge SC	M	1.8 pt	3	28.1 pt
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Badge X2 <sup>OG</sup>	M	0.8-1.8 lb	3	8 lb Cu
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Cuprofix-Ultra 40	M	0.8-3 lb	3	20 lb
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Cuproxtat	M	2.5-5 pt	3	39.4 pt
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	ManKocide	M	1.3 lb	5	42.7-58 lb <sup>7</sup>
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	MasterCop	M	0.5-3 pt	See label	30 pt
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Serenade <sup>OG</sup> Optimum	44	14-20 oz	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Serenade <sup>OG</sup> MAX	44	1-3 lb	See label	See label
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Tanos	27,11	8 oz	3	72 oz
Bacterial leaf spot ( <i>Xanthomonas</i> spp.)	Top Cop with Sulfur	M	2-3 qt	See label	See label
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Agri-Mycin 17 <sup>OG, 6</sup>	See label	200 ppm	See label	See label

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Kocide 3000	M	0.8-1.8 lb	0	26.7 lb
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Kocide 2000	M	1.5-3 lb	0	22.8 lb
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Champ WG <sup>OG</sup>	M	2 lb	0	16 lb
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Badge SC	M	1.8 pt	3	28.1 pt
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Badge X2 <sup>OG</sup>	M	0.8-1.8 lb	3	8 lb Cu
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Cuprofix-Ultra 40	M	0.8-3 lb	3	20 lb
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Cuproxtat	M	2.3 pt	3	39.4 pt
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	mancozeb dry formulations	M	0.5-3 lb <sup>8</sup>	5	21-22.4 lb
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>8</sup>	5	16.8 qt
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	ManKocide	M	1.3 lb	5	42.7-58 lb <sup>7</sup>
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	MasterCop	M	0.5-3 pt	See label	30 pt
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	See label	See label
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Serenade <sup>OG</sup> Optimum	44	14-20 oz	See label	See label
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	See label	See label
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Tanos	27, 11	8 oz	3	72 oz
Bacterial speck ( <i>Pseudomonas syringae</i> pv. <i>syringae</i> )	Top Cop with Sulfur	M	2-3 qt	See label	See label
Bacterial wilt ( <i>Ralstonia solanacearum</i> )	No bactericides available. Plant resistant varieties, crop rotations and soil solarization	NA	NA	NA	NA
Blossom-end rot	Blossom-end rot results from a calcium (Ca) deficiency in young, rapidly expanding tomato fruit tissues. The disorder can be intensified by excess nitrogen. Have soil and water tested for Ca levels prior to planting. Foliar applications of Ca fertilizers are not likely to prevent or reduce blossom-end rot incidence, as Ca ions are not actively mobilized from the leaf downward to the fruits.				
Buckeye rot ( <i>Phytophthora parasitica</i> )	Quadris	11	5-6.2 fl oz	0	37 fl oz
Buckeye rot ( <i>Phytophthora parasitica</i> )	Quadris Opti	11, M	1.6 pt	0	5 app
Buckeye rot ( <i>Phytophthora parasitica</i> )	Quadris Top	11, 3	8 fl oz	0	47 fl oz
Buckeye rot ( <i>Phytophthora parasitica</i> )	Satori	11	5-6.2 fl oz	0	61.5 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Buckeye rot ( <i>Phytophthora parasitica</i> )	Dexter Max	11, M3	0.8-1.1 lb	5	9.14 lb
Buckeye rot ( <i>Phytophthora parasitica</i> )	Gavel 75DF	22, M	1.5-2 lb	5	8-16 lb <sup>5</sup>
Buckeye rot ( <i>Phytophthora parasitica</i> )	Orondis Opti (Premix)	U15, M5	1.75-2.5 pt	0	10 pt
Buckeye rot ( <i>Phytophthora parasitica</i> )	Orondis Ultra (Premix)	40, U15	5.5-8 fl oz	1	32 fl oz
Buckeye rot ( <i>Phytophthora parasitica</i> )	Ridomil Gold Copper	4, M1	2 lb	14	6 lb
Buckeye rot ( <i>Phytophthora parasitica</i> )	Serenade <sup>OG</sup> Optimum	44	4-20 oz	See label	See label
Buckeye rot ( <i>Phytophthora parasitica</i> )	Tanos	27, 11	8 oz	3	72 oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Ariston	M, 27	1.9-3 pt	3	17.5 pt
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Quadris	11	5-6.2 fl oz	0	37 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Quadris Opti	11, M	1.6 pt	0	5 app
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Quadris Top	11, 3	8 fl oz	0	47 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Satori	11	5-6.2 fl oz	0	61.5 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Cabrio	11	8-12 oz	0	96 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Bravo Ultrex	M	1.3-1.8 lb	0	18.3 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Chloronil 720	M	1.4-2 pt	0	20 pt
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Echo 90DF	M	1.4-2 pt	0	15.1 lb a.i.
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Equus 720SST	M	1.4-2 pt	0	20 pt
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Kocide 3000	M	0.8-1.8 lb	0	26.7 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Kocide 2000	M	1.5-2.3 lb	0	22.8 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Champ WG <sup>OG</sup>	M	1.1 lb	3	16 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Badge SC	M	1.8 pt	3	28.1 pt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Badge X2 <sup>OG</sup>	M	0.8-1.8 lb	3	8 lb Cu
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Cuprofix-Ultra 40	M	0.8-3 lb	3	20 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Cuproxtat	M	2.5-5 pt	3	39.4 pt
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	9.14 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Evito 480SC or Aftershock	11, M3	0.8-1.1 lb	5	216 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Dexter Xcel	M3, 11, 3	36 fl oz	7	22.8 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Dexter Max	11	2-5.7 fl oz	3	16 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Flint	11	2-3 oz	3	72 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Fontelis	7	24 fl oz	0	8-16 lb <sup>8</sup>
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Gavel 75DF	22, M	1.5-2 lb	5	47 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Inspire Super	9, 3	16-20 fl oz	0	21-22.4 lb
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	mancozeb dry formulations	M	0.5-3 lb <sup>8</sup>	5	16.8 qt
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>8</sup>	5	42.7-58 lb <sup>8</sup>
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	ManKocide	M	1-3 lb	5	7.5 pt
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	MilStop <sup>OG</sup>		2-5 lb/100 gal	3	27.1 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Luna Sensation	28	5-7.6 fl oz	0	16 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Mettle 125ME	7, 11	6-8 fl oz	5	24 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Previcur Flex	3	0.7-1.5 pt	0	24.6 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Priaxor	7, 11	4-8 fl oz	14	28 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Reason 500SC	11	5.5-8.2 fl oz	1	See label
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Revus Top 4.16F	3, 40	5.5-7 fl oz	0	See label
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	35 fl oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Serenade <sup>OG</sup> Optimum	44	4-20 oz	0	56 oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	1	72 oz
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Scala SC	9	7 fl oz	0	See label
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Switch 62.5WG	9, 12	11-14 oz	3	See label
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Tanos	27, 11	8-10 oz	See label	See label
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Top Cop with Sulfur	M	2 qt	See label	See label
Early blight ( <i>Alternaria solani</i> ), Leaf spot ( <i>Septoria lycopersici</i> ) and Target spot ( <i>Corynespora cassicola</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Fusarium wilt ( <i>Fusarium oxysporum</i> ) and Verticillium wilt ( <i>Verticillium</i> sp.)	No fungicides available. Soil protectants such as Serenade Soil, resistant varieties and crop rotations are recommended.	NA	NA	NA	NA
Gray leaf spot ( <i>Stemphylium</i> spp.)	Aprovia Top	7, 3	10.5-13.5 fl oz	0	53.6 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	Bravo Ultrex	M	1.8-2.6 lb	0	18.3 lb
Gray leaf spot ( <i>Stemphylium</i> spp.)	Chloronil 720	M	2-2.8 pt	0	20 pt
Gray leaf spot ( <i>Stemphylium</i> spp.)	Echo 90DF	M	2-3 pt	0	15.1 lb a.i.
Gray leaf spot ( <i>Stemphylium</i> spp.)	Equus 720SST	M	2-2.8 pt	0	20 pt
Gray leaf spot ( <i>Stemphylium</i> spp.)	Dexter Xcel	M3, 11, 3	36 fl oz	7	216 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	Dexter Max	11, M3	0.8-1.1 lb	5	9.14 lb
Gray leaf spot ( <i>Stemphylium</i> spp.)	Flint 50WDG	11	3-4 oz	3	16 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	Gavel 75DF	22, M	1.5-2 lb	5	8-16 lb <sup>8</sup>
Gray leaf spot ( <i>Stemphylium</i> spp.)	Inspire Super 2.82SC	9, 3	16-20 fl oz	0	47 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	mancozeb dry formulations	M	0.5-3 lb <sup>8</sup>	5	21-22.4 lb
Gray leaf spot ( <i>Stemphylium</i> spp.)	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>8</sup>	5	16.8 qt

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Gray leaf spot ( <i>Stemphylium</i> spp.)	ManKocide	M	1-3 lb	5	42.7-58 lb <sup>8</sup>
Gray leaf spot ( <i>Stemphylium</i> spp.)	Luna Sensation	7, 11	7.6 fl oz	3	27.1 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	Mettle 125ME	3	6-8 fl oz	9	47 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	Quadris Top	11, 3	8 fl oz	0	16 fl oz
Gray leaf spot ( <i>Stemphylium</i> spp.)	Revus Top	3, 40	5.5-7 fl oz	1	See label
Gray leaf spot ( <i>Stemphylium</i> spp.)	Ridomil Gold Bravo	4, M	2.5 pt	5	28 fl oz <sup>9</sup>
Gray mold ( <i>Botrytis cinerea</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Gray mold ( <i>Botrytis cinerea</i> )	Ariston	27, M5	1.9-3 pt	3	17.5 pt
Gray mold ( <i>Botrytis cinerea</i> )	Botran 75W	14	See label	See label	See label
Gray mold ( <i>Botrytis cinerea</i> )	Cabrio EG	11	12-16 oz	0	96 oz
Gray mold ( <i>Botrytis cinerea</i> )	Bravo Ultrex	M	1.3-1.8 lb	0	18.3 lb
Gray mold ( <i>Botrytis cinerea</i> )	Chloronil 720	M	1.4-2 pt	0	20 pt
Gray mold ( <i>Botrytis cinerea</i> )	Echo 90DF	M	1.4-2 pt	0	15.1 lb a.i.
Gray mold ( <i>Botrytis cinerea</i> )	Equus 720SST	M	1.4-2 pt	0	20 pt
Gray mold ( <i>Botrytis cinerea</i> )	Endura 70 WG	7	9-12.5 oz	See label	25 oz
Gray mold ( <i>Botrytis cinerea</i> )	Fontelis 1.67SC	7	24 fl oz	0	72 fl oz
Gray mold ( <i>Botrytis cinerea</i> )	Inspire Super	3, 9	16-20 fl oz	0	80 fl oz
Gray mold ( <i>Botrytis cinerea</i> )	Luna Sensation	7, 11	7.6 fl oz	3	27.1 fl oz
Gray mold ( <i>Botrytis cinerea</i> )	Priaxor Xenium	7, 11	4-8 fl oz	0	24 fl oz
Gray mold ( <i>Botrytis cinerea</i> )	Scala SC	9	7 fl oz	1	35 fl oz
Gray mold ( <i>Botrytis cinerea</i> )	Switch 62.5WG	9, 12	11-14 oz	0	56 oz
Late blight ( <i>Phytophthora infestans</i> )	Aftershock	11	5.7 fl oz	3	22.8 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Ariston	27, M5	1.9-3 pt	3	17.5 pt
Late blight ( <i>Phytophthora infestans</i> )	Quadris	11	6.2 fl oz	0	37 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Quadris Opti	11, M	1.6 pt	0	5 app
Late blight ( <i>Phytophthora infestans</i> )	Quadris Top	11, 3	8 fl oz	0	47 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Satori	11	5-6.2 fl oz	0	61.5 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Cabrio	11	8-16 oz	0	96 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Bravo Ultrex	M	1.3-1.8 lb	0	18.3 lb

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Late blight ( <i>Phytophthora infestans</i> )	Chloronil 720	M	1.4-2 pt	0	20 pt
Late blight ( <i>Phytophthora infestans</i> )	Echo 90DF	M	1.4-2 pt	0	15.1 lb a.i.
Late blight ( <i>Phytophthora infestans</i> )	Equus 720SST	M	1.4-2 pt	0	20 pt
Late blight ( <i>Phytophthora infestans</i> )	Kocide 3000	M	0.8-1.8 lb	0	26.7 lb
Late blight ( <i>Phytophthora infestans</i> )	Kocide 2000	M	1.5-2.3 lb	0	22.8 lb
Late blight ( <i>Phytophthora infestans</i> )	Champ WG <sup>OG</sup>	M	1.1 lb	3	16 lb
Late blight ( <i>Phytophthora infestans</i> )	Badge SC	M	1.8 pt	3	28.1 pt
Late blight ( <i>Phytophthora infestans</i> )	Badge X2 <sup>OG</sup>	M	0.8-1.8 lb	3	8 lb Cu
Late blight ( <i>Phytophthora infestans</i> )	Cuprofix-Ultra 40	M	0.8-3 lb	3	20 lb
Late blight ( <i>Phytophthora infestans</i> )	Cuproxtat	M	2.5-6 pt	3	39.4 pt
Late blight ( <i>Phytophthora infestans</i> )	Nordox 75WG <sup>OG</sup>	M	2-4 lb	0	See label
Late blight ( <i>Phytophthora infestans</i> )	Dexter Xcel	M3, 11, 3	36 fl oz	7	216 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Dexter Max	11, M3	0.8-1.1 lb	5	9.14 lb
Late blight ( <i>Phytophthora infestans</i> )	Evito 480 SC	11	5.7 fl oz	3	22.8 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Flint 50WDG	11	2-3 oz	3	16 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Forum 4.18F	40	6 fl oz	4	30 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Gavel 75DF	22, M	1.5-2 lb	5	8-16 lb <sup>8</sup>
Late blight ( <i>Phytophthora infestans</i> )	mancozeb dry formulations	M	0.5-3 lb <sup>8</sup>	5	21-22.4 lb
Late blight ( <i>Phytophthora infestans</i> )	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>8</sup>	5	16.8 qt
Late blight ( <i>Phytophthora infestans</i> )	ManKocide	M	1-3 lb	5	42.7-58 lb <sup>8</sup>
Late blight ( <i>Phytophthora infestans</i> )	MiiStop <sup>OG</sup>	See label	2-5 lb/100 gal	See label	See label
Late blight ( <i>Phytophthora infestans</i> )	OSO 5%	19	3.75-13 fl oz	0	4.2 oz a.i.
Late blight ( <i>Phytophthora infestans</i> )	Orondis Opti (Premix)	M5, U15	1.75-2.5 pt	0	10 pt
Late blight ( <i>Phytophthora infestans</i> )	Orondis Ultra (Premix)	40, U15	5.5-8 fl oz	1	32 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Previcur Flex	28	0.7-1.5 pt	5	7.5 pt
Late blight ( <i>Phytophthora infestans</i> )	Presidio	43	3-4 fl oz	2	12 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Priaxor	7, 11	8 fl oz	0	24 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Ranman 400SC	21	2.1-2.8 fl oz	0	16.5 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Reason 500SC	11	5.5-8.2 fl oz	14	24.6 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Late blight ( <i>Phytophthora infestans</i> )	Gold Bravo SC	4, M	2.5 pt	5	* footnote <sup>9</sup>
Late blight ( <i>Phytophthora infestans</i> )	Gold/Copper	4, M	2 lb	14	3 app
Late blight ( <i>Phytophthora infestans</i> )	Gold MZ WG	4, M	2.5 lb	5	10 lb
Late blight ( <i>Phytophthora infestans</i> )	Revus Top	3, 40	5.5-7 fl oz	1	28 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Late blight ( <i>Phytophthora infestans</i> )	Serenade <sup>OG</sup> Optimum	44	4-20 oz	0	See label
Late blight ( <i>Phytophthora infestans</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	0	See label
Late blight ( <i>Phytophthora infestans</i> )	Tanos	27, 11	8-10 oz	3	72 oz
Late blight ( <i>Phytophthora infestans</i> )	Top Cop with Sulfur	M	2 qt	See label	See label
Late blight ( <i>Phytophthora infestans</i> )	Topguard EQ	11, 3	4-8 fl oz	0	4 app
Late blight ( <i>Phytophthora infestans</i> )	Zampro	45, 40	14 fl oz	4	42 fl oz
Late blight ( <i>Phytophthora infestans</i> )	Zing	22, M	36 fl oz	5	8 app
Leaf mold ( <i>Cladosporium fulvum</i> )	Dexter Xcel	M3, 11, 3	36 fl oz	7	216 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	Aprovia Top	3, 7	10.5-13.5 fl oz	0	53.6 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	Gavel 75DF	22, M	1.5-2 lb	5	8-16 lb <sup>5</sup>
Leaf mold ( <i>Cladosporium fulvum</i> )	Inspire Super	9,3	16-20 fl oz	0	47 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	mancozeb dry formulations	M	0.5-3 lb <sup>8</sup>	5	21-22.4 lb
Leaf mold ( <i>Cladosporium fulvum</i> )	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>8</sup>	5	16.8 qt
Leaf mold ( <i>Cladosporium fulvum</i> )	ManKocide	M	1-3 lb	5	42.7-58 lb <sup>8</sup>
Leaf mold ( <i>Cladosporium fulvum</i> )	OSO 5%	19	3.75-13 fl oz	0	4.2 oz a.i
Leaf mold ( <i>Cladosporium fulvum</i> )	Mettle 125ME	3	6-8 fl oz	0	16 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	Quadris Top	11, 3	8 fl oz	0	47 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	Ridomil Gold Bravo	4, M	2.5 pt	See label	*footnote <sup>9</sup>
Leaf mold ( <i>Cladosporium fulvum</i> )	Revus Top	3, 40	5.5-7 fl oz	1	28 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	Tanos	27, 11	8 oz	3	72 oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Aftershock	11	2-5.7 fl oz	3	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Aprovia Top	3, 7	10.5-13.5 fl oz	0	53.6 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Blocker 4F	14	4.5 to 7.5 pt/100 gal	0	7.5 lb a.i.
Southern blight ( <i>Agroathelia rolfsii</i> )	Cabrio 20EG	11	12-16 oz	0	96 oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Southern blight ( <i>Agroathelia rolfsii</i> )	Evito 480SC	11	2-5.7 fl oz	3	22.8 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Fontelis	7	1-1.6 fl oz <sup>10</sup>	0	24 fl oz
Southern blight ( <i>Agroathelia rolfsii</i> )	Priaxor 500SC	7, 11	4-8 fl oz	0	24 fl oz
White mold or Timber rot ( <i>Sclerotinia sclerotiorum</i> )	Cabrio 20EG	11	12-16 oz	0	96 fl oz
White mold or Timber rot ( <i>Sclerotinia sclerotiorum</i> )	Priaxor 500SC	7, 11	4-8 fl oz	0	24 fl oz
Viruses	A list of viruses of tomato can be found in Table 2. Plant resistant varieties. Table 3 provides a list of varieties with resistance to Tomato spotted wilt virus (TSWV). For viruses transmitted by insects, control of the insect vector using insecticides, polyethylene or polyethylene coated mulches and/or trap crops are recommended. Seed treatments and good sanitation practices are recommended for noninsect transmitted viruses.				

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Rates vary based on proximity to the Mississippi (west vs. east of the Mississippi river). Refer to labels for exact rates.

<sup>6</sup> **Transplant production only.**

<sup>7</sup> West of the Mississippi river do not apply more than 42.3 lb. per crop per year. East of the Mississippi river do not apply more than 58 lb. per crop per year.

<sup>8</sup> Rates vary based on proximity to the Mississippi (west vs. east of the Mississippi river). Refer to labels for exact rates.

<sup>9</sup> Do not exceed 15 lb. a.i. per acre of chlorothalonil containing products. Do not exceed 0.5 lb. a.i. per acre of foliar applied azoxystrobin containing products. Refer to label for additional restrictions.

<sup>10</sup> All rates are per 1,000 square feet of row. Refer to the label for modes of application.

## Tomato (Greenhouse)

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Bacterial canker	No bactericides are available. Seed treatments and good sanitation practices are recommended.	NA	NA	NA	NA
Fusarium crown and root Rot ( <i>Fusarium oxysporum</i> )	No fungicides available. Resistant varieties, seed treatments and good sanitation practices are recommended.	NA	NA	NA	NA
Gray leaf spot ( <i>Stemphylium solani</i> )	Gavel 75DF	22, M	1.5-2 lb	5	8-16 lb <sup>5</sup>
Gray leaf spot ( <i>Stemphylium solani</i> )	Inspire Super	9, 3	16-20 fl oz	0	47 fl oz
Gray leaf spot ( <i>Stemphylium solani</i> )	mancozeb dry formulations	M	0.5-3 lb <sup>5</sup>	5	21-22.4 lb
Gray leaf spot ( <i>Stemphylium solani</i> )	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>5</sup>	5	16.8 qt
Gray leaf spot ( <i>Stemphylium solani</i> )	ManKocide	M	1-3 lb	5	42.7-58 lb <sup>5</sup>
Gray leaf spot ( <i>Stemphylium solani</i> )	Tanos	27, 11	8 oz	3	72 oz
Gray mold and Ghost spot ( <i>Botrytis cinerea</i> )	Actinovate AG <sup>OG</sup>	See label	3-12 oz	See label	See label
Gray mold and Ghost spot ( <i>Botrytis cinerea</i> )	Botran 75W	14	1/100 gal	0	4 app
Gray mold and Ghost spot ( <i>Botrytis cinerea</i> )	Fontelis 1.67SC	7	16-24 fl oz	0	72 fl oz
Gray mold and Ghost spot ( <i>Botrytis cinerea</i> )	Scala SC	9	7 fl oz <sup>6</sup>	1	35 fl oz
Gray mold and Ghost spot ( <i>Botrytis cinerea</i> )	Switch 62.5WG	9, 12	11-14 oz <sup>7</sup>	0	56 oz
Leaf mold ( <i>Cladosporium fulvum</i> )	Gavel 75DF	22, M	1.5-2 lb	5	8-16 lb <sup>5</sup>
Leaf mold ( <i>Cladosporium fulvum</i> )	Inspire Super	9, 3	16-20 fl oz	0	47 fl oz
Leaf mold ( <i>Cladosporium fulvum</i> )	mancozeb dry formulations	M	0.5-3 lb <sup>5</sup>	5	21-22.4 lb
Leaf mold ( <i>Cladosporium fulvum</i> )	mancozeb liquid Formulations	M	0.6-2.4 qt <sup>5</sup>	5	16.8 qt
Leaf mold ( <i>Cladosporium fulvum</i> )	ManKocide	M	1-3 lb	5	42.7-58 lb <sup>5</sup>
Leaf mold ( <i>Cladosporium fulvum</i> )	Tanos	27, 11	8 oz	3	72 oz
Powdery mildew ( <i>Oidium neolycopersici</i> )	Fontelis	7	16-24 fl oz	0	72 fl oz
Powdery mildew ( <i>Oidium neolycopersici</i> )	Inspire Super	9, 3	16-20 fl oz	0	47 fl oz
Powdery mildew ( <i>Oidium neolycopersici</i> )	Microthiol Dispers <sup>OG</sup>	M	5 lb	See label	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Confine Extra	33	1-4 qt	See label	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Rampart	33	1-3 qt/100 gal	See label	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Pre-AM	See label	50 fl oz/100 gal	See label	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Quadris Top	11, 3	8 fl oz	0	47 fl oz

Disease (Pathogen)	Product Choices <sup>1</sup>	Product Mode of Action Group <sup>2</sup>	Rate <sup>3</sup>	PHI <sup>4</sup>	Maximum Use
Powdery mildew ( <i>Oidium neolycopersici</i> )	Rally 40WSP	3	2.5-4 fl oz	0	1.3 lb a.i.
Powdery mildew ( <i>Oidium neolycopersici</i> )	Serenade <sup>OG</sup> ASO	44	2-6 qt	0	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Serenade <sup>OG</sup> Optimum	44	4-20 oz	0	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Serenade <sup>OG</sup> MAX	44	1-3 lb	0	See label
Powdery mildew ( <i>Oidium neolycopersici</i> )	Switch 62.5WG	9, 12	11-14 oz <sup>7</sup>	0	56 oz
Powdery mildew ( <i>Oidium neolycopersici</i> )	Trilogy <sup>OG</sup>	See label	1%	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Confine Extra	33	1-4 qt	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Rampart	33	1-3 qt/100 gal	See label	See label
Damping-off ( <i>Pythium</i> spp.)	Previcur Flex	28	12.8 fl oz/100 gal <sup>8</sup>	0	4 app
Viruses and Viroids <sup>9</sup>	A list of viruses and viroids of tomato can be found in Table 2. For viruses and viroids transmitted by insects, control of the insect vector using insecticides, screens, double entry doors and/or trap crops are recommended. Seed treatments and good sanitation practices are recommended for noninsect transmitted viruses and viroids. Plant-resistant varieties are listed in Table 3.	NA	NA	NA	NA

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Mode of action groups are determined by the Fungicide Resistance Action Committee (FRAC).

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated. Usually, 100 gallons of water are required to give good coverage with boom sprayers.

<sup>4</sup> Postharvest interval (PHI) is the minimum number of days allowed between the last application and harvest.

<sup>5</sup> Rates vary based on proximity to the Mississippi (west vs. east of the Mississippi river). Refer to labels for exact rates.

<sup>6</sup> Ventilate for at least 3 hours after application.

<sup>7</sup> Do not apply to cherry or grape type tomatoes in the greenhouse.

<sup>8</sup> Apply in the evenings through a drip irrigation system. Refer to label for additional application instructions and restrictions.

<sup>9</sup> Viroids are the smallest "organisms" known to cause plant diseases. Viroids can also be transmitted by seeds, vegetative propagation, pollen, grafting and insects. Viroids are easily spread by contact with contaminated pruning tools, farm equipment, clothing, crop handling and contact between neighboring plants.

**Table 1. Pepper virus diseases and modes of transmission.**

Virus	Transmission
Alfalfa mosaic virus (AMV)	Aphids
Cucumber mosaic virus <sup>1</sup> (CMV)	Aphids
Pepper mild mottle virus (PMMoV)	Seed Mechanical
Pepper mottle virus (PeMoV)	Aphids
Potato virus Y (PVY)	Aphids
Tobacco etch virus <sup>2</sup> (TEV)	Aphids
Tobacco mosaic virus (TMV)	Seed Mechanical
Tomato spotted wilt virus (TSWV)	Thrips

<sup>1</sup> CMV is the most important virus disease of peppers worldwide.

<sup>2</sup> TEV and PVY normally occur together. Planting PVY-resistant varieties often helps control TEV because resistance to both viruses is closely linked.

**Table 2. Tomato virus diseases and modes of transmission.**

Virus	Transmission
Cucumber mosaic virus (CMV)	Aphids
Pepino mosaic virus <sup>1</sup> (PeMV)	Mechanical
Potato leaf roll virus (PLRV)	Aphids
Potato virus Y (PVY)	Aphids
Tobacco etch virus (TEV)	Aphids
Tobacco mosaic virus (TMV)	Seed Mechanical
Tomato yellow leaf curl virus (TYLCV)	Whiteflies (silver leaf)
Tomato ringspot virus (TRSV)	Dagger nematode
Tomato spotted wilt virus (TSWV)	Thrips

<sup>1</sup> Reported mostly on tomatoes produced in the greenhouse.

**Table 3. Tomato varieties with resistance to tomato spotted wilt virus and source of seeds.**

Variety	Growth Habit	Source
Amelia	Fresh Market (indeterminate)	Harris Moran Seed Co.
Bella Rosa	Fresh Market (indeterminate)	Sakata
BHN 444	Fresh Market (indeterminate)	BHNSeed
BHN 602	Fresh Market (indeterminate)	BHNSeed
BHN 640	Fresh Market (indeterminate)	BHNSeed
Crista	Fresh Market (indeterminate)	Harris Moran Seed Co.
Finishline	Fresh Market (indeterminate)	Syngenta
Fletcher	Fresh Market (indeterminate)	North Carolina State University
Florida 7964	Fresh Market (indeterminate)	University of Florida
Mountain Glory	Fresh Market (indeterminate)	NCSU
Nico	Fresh Market (indeterminate)	Harris Moran Seed Co.
Red Defender	Fresh Market (indeterminate)	Harris Moran Seed Co.
Redline	Fresh Market (indeterminate)	Syngenta
Talladega	Fresh Market (indeterminate)	Syngenta
Top Gun	Fresh Market (indeterminate)	Twilley Seeds
BHN 685	Roma (saladette or determinate)	BHNSeed
Health Kick	Roma (saladette or determinate)	Park Seed
Muriel	Roma (saladette or determinate)	Sakata
Picus	Roma (saladette or determinate)	Seminis

**Table 4. Example spray program for foliar disease control in tomato production. (when early blight is a consistent threat)**

Table reproduced from the 2024 Southeastern U.S. Vegetable Handbook. Table prepared by S. Bost, Plant Pathologist, University of Tennessee

Harvest Period	Week	Chemical (Refer to the Label for rates.)	Number of Applications of Chemical Per Season <sup>1</sup>
Before Harvest	1	Mancozeb + Actigard <sup>2</sup>	Mancozeb, 1; Actigard, 1
Before Harvest	2	Mancozeb + Copper	Mancozeb, 2; Copper, 1
Before Harvest	3	Fontelis <sup>3</sup> + Actigard	Fontelis, 1; Actigard, 2
Before Harvest	4	Mancozeb+ Copper	Mancozeb, 3; Copper, 2
Before Harvest	5	Inspire Super <sup>3</sup> + Actigard	Inspire Super 1; Actigard, 3
Before Harvest	6	Mancozeb + Copper	Mancozeb, 4; Copper, 3
Before Harvest	7	Fontelis + Actigard	Fontelis, 2; Actigard, 4
Before Harvest	8	Mancozeb + Copper	Mancozeb, 5; Copper, 4
Before Harvest	9	Inspire Super + Actigard	Inspire Super, 2; Actigard, 5
Before Harvest	10	Chlorothalonil + Copper	Chlorothalonil, 1; Copper, 5
During Harvest	11	Fontelis + Copper	Fontelis, 3; Copper, 6
During Harvest	12	Chlorothalonil + Copper	Chlorothalonil, 2; Copper, 7
During Harvest	13	Inspire Super + Copper	Inspire Super, 3; Copper, 8
During Harvest	14	Chlorothalonil + Copper	Chlorothalonil, 3; Copper, 9
During Harvest	15	Chlorothalonil + Copper	Chlorothalonil, 4; Copper, 10
		Finish season with Chlorothalonil	

<sup>1</sup> For most products, the total number of applications per season is restricted by the label.  
<sup>2</sup> In areas or seasons in which bacterial spot or speck problems are not expected, Actigard and Copper can be omitted.  
<sup>3</sup> If late blight occurs, appropriate fungicides must be added. Fontelis and Inspire Super do not have any late blight activity.

**Table 5. Biopesticides and fungicide alternatives for vegetables.**

Active Ingredient	Product	Crops	Target Diseases/Pests	Greenhouse Use	OMRI Listed
acibenzolar-S-methyl	Actigard <sup>1</sup>	Chili pepper, cucurbits, lettuce, onion, spinach and tomato	Bacterial blights <sup>4</sup> , Downy mildew, Powdery mildew	No	No
<i>Bacillus amyloliquefaciens</i> D747	DoubleNickel <sup>2</sup>	Most vegetables <sup>5</sup> , strawberries, citrus, fruit and nuts	Bacterial blights, Downy mildew, Leaf spots, Powdery mildew <sup>4</sup>	Yes	Yes
<i>Bacillus pumilus</i> QST2808	Ballad Plus <sup>3</sup> Sonata	Bulb vegetables, cole crops, cucurbits, legumes, pepper, root crops, sweet corn and tomato	Early blight, Downy mildew, Late blight Leaf blights, Powdery mildew, Rust	Yes	Yes
<i>Bacillus subtilis</i> MBI 600	Subtilex NG <sup>6</sup>	Cucurbits, eggplant, pepper and tomato	Powdery mildew <sup>6</sup> , Root diseases	Yes	No
<i>Bacillus subtilis</i> QST713	Cease <sup>7</sup> Serenade Max <sup>7</sup>	Cole crops, cucurbits, leafy vegetables, legumes, pepper and tomato	Downy mildew, Leaf blights, Powdery mildew	Yes	Yes
Bacteriophage (Phage)	Agriphage <sup>8</sup>	Most vegetables <sup>5</sup>	Bacterial canker (foliar only), Bacterial speck, Bacterial spot	Yes	No
<i>Coniothyrium minitans</i>	Contans <sup>9</sup>	Most vegetables <sup>5</sup>	Lettuce drop, Timber rot, White mold	Yes	Yes
<i>Gliocladium cantenulatum</i>	PreStop Biofungicide	Most vegetables <sup>5</sup>	Botrytis stem canker, Root diseases, Seed rots	Yes	No
<i>Gliocladium virens</i> GL-21	SoilGard 12G <sup>10</sup>	Most vegetables <sup>5</sup>	Root diseases, Seed rots	Yes	Yes
hydrogen peroxide	Oxidate Terracide	Most vegetables <sup>5</sup>	Root diseases, Leaf blights	Yes	Yes
<i>Myrothecium verrucaria</i>	DiTera DF	Cole crops, cucurbits, eggplant, leafy vegetables, legumes, pepper, root and tuber vegetables and tomato	Nematodes	Yes	Yes
neem Oil	Trilogy <sup>11</sup>	Vegetables	Foliar diseases	Yes	Yes
Oils from cottonseed, corn and garlic	Mildew Cure <sup>11</sup>	Cucurbits and tomato	Powdery mildew	Yes	No
Oils from clove, rosemary and thyme	Sporatec <sup>12</sup>	Most vegetables <sup>5</sup>	Fungal leaf blights, Powdery mildew	Yes	Yes
Oil from soybean	Oleotrol-M <sup>13</sup>	Most vegetables <sup>5</sup>	Botrytis gray mold, Downy mildew, Powdery mildew	Yes	Yes
<i>Paecilomyces lilacinus</i>	MeloCon WG	Most vegetables <sup>5</sup>	Nematodes	Yes	Yes
phosphorous compounds	Alude Fosphite Fungi-Phite Phostrol ProPhyt Rampart	Most vegetables <sup>5</sup>	Downy mildew, Leaf blights, Powdery mildew	Yes	No
potassium bicarbonate <sup>14</sup>	Armicarb Kaligreen Milstop	Most vegetables <sup>5</sup>	Fungal leaf blights, Powdery mildew	Yes	Yes (except Armicarb)

Active Ingredient	Product	Crops	Target Diseases/Pests	Greenhouse Use	OMRI Listed
Potassium salts of fatty acids	M-Pede <sup>15</sup>	Most vegetables <sup>5</sup>	Powdery mildew	Yes	Yes
potassium silicate	Sil-MATRIX <sup>16</sup>	Most vegetables <sup>5</sup>	Botrytis, gray mold, Powdery mildew	Yes	Yes
<i>Pseudomonas chloroaphis</i>	Atezec	Most vegetables <sup>5</sup>	Stem and root diseases	Yes (no field use allowed)	No
<i>Reynoutria sachalinensis</i> extract	Regalia <sup>17</sup>	Most vegetables <sup>5</sup>	Fungal leaf blights, Powdery mildew	Yes	Yes
<i>Streptomyces griseoviridis</i>	Mycostop <sup>18</sup>	Most vegetables <sup>5</sup>	Seedling, root and stem rots	Yes	Yes
<i>Streptomyces lydicus</i>	Actinovate AG <sup>6</sup>	Most vegetables <sup>5</sup>	Foliar blights, Seedling, root and stem rots	Yes	Yes
<i>Streptomyces lydicus</i> + iron, molybdenum and humic acid	Actino-Iron <sup>9</sup>	Most vegetables <sup>5</sup>	Seedling, root and stem rots	Yes	Yes
<i>Trichoderma harzianum</i> <sup>18</sup>	T-22 RootShield PlantShield	Cole crops, eggplant, leafy vegetables, pepper and tomato	Seedling, root and stem rots	Yes	Yes
<i>Trichoderma viride</i>	Binab	Most vegetables <sup>5</sup>	Seedling, root and stem rots	Yes	No

- <sup>1</sup> Do not apply to plants stressed by heat, cold or moisture extremes.
- <sup>2</sup> pH of spray solution should be between 6.0 and 8.0.
- <sup>3</sup> Labeled for sweet corn only.
- <sup>4</sup> Target diseases or pests are crop dependent. Refer to label for specific diseases and crop.
- <sup>5</sup> Most vegetables are covered on the label. Refer to the label for specific crops and diseases.
- <sup>6</sup> Apply to soil or potting medium; use as a foliar spray for powdery mildew.
- <sup>7</sup> Works best when applied prior to disease development and used in an integrated program.
- <sup>8</sup> Product is strain specific. Contact your State Vegetable Pathologist Extension Specialist for information on identifying bacterial strains. Apply in the evening or during cloud cover days.
- <sup>9</sup> Apply to soil or potting medium.
- <sup>10</sup> Do not apply in conjunction with chemical fungicides.
- <sup>11</sup> May cause leaf burn; test a small number of plants before spraying entire crop.
- <sup>12</sup> Addition of a spray adjuvant (spreader or penetrant) is recommended.
- <sup>13</sup> Tank-mix with a spreader-sticker.
- <sup>14</sup> pH of spray solution should not be below 7.0.
- <sup>15</sup> To avoid plant injury, do not mix with surfactants or apply to stressed plants. Product also has insecticidal properties.
- <sup>16</sup> Tank-mix with a nonionic surfactant for best results.
- <sup>17</sup> First application should be made before symptoms appear.
- <sup>18</sup> Can be added to potting mix or applied in-furrow to field soil.

**Table 6. Various fungicides for use on vegetable crops.**

Table reproduced from the 2024 Southeastern U.S. Vegetable Handbook.  
Table prepared by R. Singh, Plant Pathologist, Louisiana State University.

Common Name	Trade Name(s)
azoxystrobin	Aframe (Syngenta)
azoxystrobin	Aubrac (AgChem Access)
azoxystrobin	Azoxy SC (Willowood)
azoxystrobin	Azoxystar (Albaugh)
azoxystrobin	Dynasty (Syngenta)
azoxystrobin	Equation (Cheminova)
azoxystrobin	Equation SC (Cheminova)
azoxystrobin	Quadris (Syngenta)
azoxystrobin	Satori (Loveland Products)
azoxystrobin	Trevo (Innvictis Crop Care)
azoxystrobin	Willowood Azoxy 2SC (Willowood USA)
chlorothalonil	Bravo Ultrex (Syngenta)
chlorothalonil	Bravo Weather Stik (Syngenta)
chlorothalonil	Bravo Zn (Syngenta)
chlorothalonil	Chloronil 720 (Syngenta) Chlorothalonil 720SC (Arysta) Echo 720 (SipcamAdvan) Echo 90DF (SipcamAdvan) Echo Zn (SipcamAdvan) Equus 500 Zn (MANA)
chlorothalonil	Equus 500ZN (Adama)
chlorothalonil	Equus 720SST (Adama)
chlorothalonil	Equus DF (Adama)
chlorothalonil	Initiate 720 (Loveland Products)
chlorothalonil	Initiate ZN (Loveland Products)
copper hydroxide	Champ DP Dry Prill (Nufarm)
copper hydroxide	Champ Formula 2 Flowable (Nufarm)
copper hydroxide	Champ WG (Nufarm)
copper hydroxide	Champion Wettable Powder (Nufarm)
copper hydroxide	Kentan DF (Isagro USA)

Common Name	Trade Name(s)
copper hydroxide	Kocide DF (DuPont; Certis USA)
copper hydroxide	Kocide 2000 (DuPont; Certis USA)
copper hydroxide	Kocide 3000 (DuPont; Certis USA)
copper hydroxide	Nu Cop 3L (Albaugh)
copper hydroxide	Nu Cop 50WP (Albaugh)
copper hydroxide	Nu Cop HB (Albaugh)
copper octanoate	Camelot-O (Sepro)
copper (cuprous) oxide	Nordox (NORDOX Industrier AS)
copper (cuprous) oxide	Nordox 75WG (NORDOX Industrier AS)
copper sulfate (basic)	Basic Copper 53 (Albaugh)
copper sulfate (basic)	Cuprofix Ultra 40 Disperss (UPI)
copper sulfate (basic)	Cuproxtat (NuFarm)
copper sulfate pentahydrate	Mastercop (Adama)
copper sulfate pentahydrate	Aliette WDG Fungicide (Bayer)
fosetyl-Al	Linebacker WDG (NovaSource)
fludioxonil	Cannonball (Syngenta)
fludioxonil	Dyna-Shield Fludioxonil (Loveland)
fludioxonil	Maxim 4FS (Syngenta)
fludioxonil	Scholar SC (Syngenta)
fludioxonil	Spirato 480FS (Nufarm)
iprodione	Enclosure 4 (Devgen)
iprodione	Iprodione 4L AG (Arysta)
iprodione	Meteor (UPI)
iprodione	Nevado 4F (MANA)
iprodione	Rovral 4 Flowable Fungicide (Bayer: FMC)
mancozeb	Dithane F-45 Rainshield (Dow) Dithane M-45 (Dow)
mancozeb	Koverall (Cheminova)
mancozeb	Manzate Flowable (UPI)

Common Name	Trade Name(s)
mancozeb	Manzate Max (UPI)
mancozeb	Manzate Pro-Stick (UPI)
mancozeb	Penncozeb 4FL (UPI)
mancozeb	Penncozeb 75DF (UPI)
mancozeb	Penncozeb 80WP (UPI)
mancozeb	Roper DF Rainshield (Loveland Products)
mefenoxam	Ridomil Gold GR (Syngenta)
mefenoxam	Ridomil Gold SL (Syngenta)
mefenoxam	Ultra Flourish (Nufarm)
myclobutanil	Rally 40WSP (Dow)
myclobutanil	Sonoma 25EW AG (Albaugh)
myclobutanil	Sonoma 40WSP (Albaugh)
pentachloronitrobenzene (PCNB)	Blocker 4F
phosphite (potassium)	Helena Prophyt (Helena)
phosphite (potassium)	Confine Extra (Winfield Solutions)
phosphite (potassium)	Reveille (Helena)
phosphite (mono-and-dibasic salts)	Phostrol (Nufarm)
phosphorous acid (mono-and-dipotassium salts)	Alude (Cleary)
phosphorous acid (mono-and-dipotassium salts)	Fosphite Fungicide (JK Biotech)
phosphorous acid (mono-and-dipotassium salts)	Fungi-Phite (Plant Protectants)
phosphorous acid (mono-and-dipotassium salts)	K-Phite 7LP AG (Plant Food Systems)
phosphorous acid (mono-and-dipotassium salts)	Rampart (Loveland Products)
propamocarb hydrochloride	Previcur Flex (Bayer)
propamocarb hydrochloride	Promess (Agriphar)
propiconazole	AmTide Propiconazole 41.8% EC (AmTide)
propiconazole	Bumper 41.8EC (Adama)

Common Name	Trade Name(s)
propiconazole	Bumper ES (Adama)
propiconazole	Fitness (Loveland Products)
propiconazole	Propi-star EC (Albaugh)
propiconazole	Propicure 3.6F (Direct Ag Source)
propiconazole	Propimax EC (Dow AgroSciences)
propiconazole	Shar-Shield PPZ (Sharda USA)
propiconazole	Tilt (Syngenta)
propiconazole	Topaz (Winfield Solutions)
propiconazole	Willowood Propicon 3.6EC (Willowood USA)
sulfur	Cosavet-DF (Sulphur Mills Limited)
sulfur	CSC 80% Thiosperse (Martin Resources) CSC Dusting Sulfur (Martin Resources) CSC Thioben 90 (Martin Resources) CSC Wettable Sulfur (Martin Resources)
sulfur	Dusting Sulfur (Loveland Products; Wilbur-Ellis) First Choice Dusting Sulfur (Loveland Products) IAP Dusting Sulfur (Independent Agribusiness Professionals)
sulfur	InteGro Magic Sulfur Dust (InteGro Inc.)
sulfur	Kumulus DF (Arysta) Liquid Sulfur Six (Helena) Micro Sulf (Nufarm)
sulfur	Microfine Sulfur (Loveland Products)
sulfur	Microthiol Disperss (UPI)
sulfur	Special Electric Sulfur (Wilbur-Ellis)
sulfur	Spray Sulfur (Wilbur-Ellis)
sulfur	Sulfur 6L (Arysta) Sulfur 90W (Drexel) Sulfur DF (Wilbur-Ellis)
sulfur	That Flowable Sulfur (Stoller Enterprises)
sulfur	Thiolux (Loveland Products)
sulfur	Wettable Sulfur (Helena)
sulfur	Yellow Jacket Dusting Sulfur (Georgia Gulf Sulfur)
sulfur	Yellow Jacket Wettable Sulfur (Georgia Gulf Sulfur)
tebuconazole	AmTide TEBU 3.6F (AmTide)
tebuconazole	Barrier (Real Farm Technologies)

Common Name	Trade Name(s)
tebuconazole	Folicur (Bayer)
tebuconazole	Monsoon (Loveland Products)
tebuconazole	Onset 3.6L (Winfield Solutions)
tebuconazole	Orius 3.6F (Adama)
tebuconazole	Solera Tebuconazole 3.6F (Solera)
tebuconazole	Tebu-Crop 3.6F (Sharda USA)
tebuconazole	Tebucon 3.6F (Repar Corp.)
tebuconazole	TebuStar 3.6L (Albaugh)
tebuconazole	Tebuzol 3.6F (UPI)
tebuconazole	Toledo 3.6F (Rotam)
thiophanate-methyl	Cercobin (Cheminova)
thiophanate-methyl	Incognito 4.5F (Adama)
thiophanate-methyl	Incognito 85 WDG (Adama)
thiophanate-methyl	Thiophanate-Methyl 85 WDG (Adama)
thiophanate-methyl	T-Methyl 4.5F (Nufarm)
thiophanate-methyl	T-Methyl 70W WSB (Nufarm)
thiophanate-methyl	Topsin 4.5FL (UPI)
thiophanate-methyl	Topsin M 70WDG (UPI)

**Table 7. Fungicide mode of actions for fungicide-resistance management.**

Table reproduced from the 2024 Southeastern U.S. Vegetable Handbook. Table prepared by L. M. Quesada-Ocampo, Plant Pathologist, NCSU.

FRAC Code	Fungicide Resistance Risk	Group Name	Example Active ingredients	Example Products
P1	Unknown	Benzo-thiadiazole (BTH)	acibenzolar-S-methyl	Actigard
M1	Low	Inorganic copper	fixed copper	Copper (generic)
M2	Low	Inorganic sulfur	sulfur	Sulfur (generic)
M3	Low	Dithiocarbamates	mancozeb	Mancozeb (generic)
M5	Low	Chloronitriles	chlorothalonil	Chlorothalonil (generic)
1	High	Methyl benzimidazole carbamates (MBC)	thiophanate-methyl	Topsin M
2	Medium to high	Dicarboximides	iprodione	Rovral
3	Medium	Demethylation inhibitors (DMI)	triflumizole myclobutanil	Procure Rally
4	High	Phenylamide	mefenoxam	Ridomil Gold
7	Medium to high	Succinate dehydrogenase inhibitors (SDHI)	boscalid penthiopyrad	Endura Fontelis
9	Medium	Anilino-pyrimidines (AP)	pyrimethanil	Scala
11	High	Quinone outside inhibitors (QoI)	pyraclostrobin trifloxystrobin azoxystrobin	Cabrio Flint Quadris
12	Low to medium	Phenylpyrroles (PP)	fludioxinil	Maxim
13	Medium	Aza-naphthalenes	quinoxifen	Quintec

FRAC Code	Fungicide Resistance Risk	Group Name	Example Active ingredients	Example Products
14	Low to medium	Aromatic hydrocarbons (AH)	dichloran	Botran
21	Medium to high	Quinone inside Inhibitors (Qil)	cyazofamid	Ranman
22	Low to medium	Benzamides (toluamides) Thiazole carboxamide	zoxamide	Gavel (contains zoxamide and mancozeb)
27	Low to medium	Cyanoacetamide-oximes	cymoxanil	Curzate
28	Low to medium	Carbamates	propamocarb	Presidio
29	Unknown	Dinitroanilines	fluazinam	Omega
33	Low	Phosphonates	fosetyl-Al	Aliette
40	Low to medium	Carboxylic acid amides (CAA)	dimethomorph mandipropamid	Forum Revus
43	High	Benzamides	fluopicolide	Presidio

This vegetable section was revised October 2023 by R. Singh.

# Home Gardens

## Fruit and Nut Trees

**Table 1: Fungicides available for disease management for home fruit and nut production.**

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
calcium polysulfides	Hi-Yield Improved Lime Sulfur Spray	Contact	Most fruits, do not use on apricots	Anthrachnose, brown rot, leaf curl, leaf spot, mummy berry, powdery mildew, rust, scab and shot hole	Highly toxic. Do not apply when temperatures exceed 85 F. Do not apply with oil or near the time of an oil application.
captan	Bonide Captan 50WP, Hi-Yield Captan 50W Fungicide	Contact	Apples, apricots, blueberries, cherries, grapes, nectarines, peaches, plums and strawberries	Bitter rot, black rot, Botrytis rot, brown rot, cedar-apple rust, downy mildew, fly-speck, forg-eye, fruit rots and spots, leaf spots, mummy berry, quince rust, scab and sooty blotch	Bonide Captan 50 WP can be used on blackberries for anthracnose and Botrytis gray mold.
captan + insecticides	Bonide A Complete Fruit Tree Spray Concentrate, Godon's Liquid Fruit Tree Spray, Martin's Rescue One Spray Protection	Contact	Apples, apricots, cherries, grapes, nectarines, peaches, plums and strawberries	Bitter rot, black rot, Botrytis rot, brown rot, cedar-apple rust, downy mildew, fly-speck, forg-eye, fruit rots and spots, leaf spots, quince rust, scab and sooty blotch	None
chlorothalonil	Bonide Fung-onil Multi-purpose Fungicide <sup>1</sup> , Ferti-lome Broad Spectrum Landscape and Garden Fungicide <sup>1</sup> , GardenTech Daconil Fungicide <sup>1</sup> , Gordon's Multi-Purpose Fungicide, Hi-Yield Vegetable, Flower, Fruit and Ornamental Fungicide and Ortho Max Garden Disease Control Concentrate	Contact	Apricots, blueberries, cherries, nectarines, peaches, plums and prunes	Anthrachnose, brown rot (blossom and twig blights), cherry leaf spot, leaf curl, mummy berry, scab and shot hole	None
copper	Bonide Copper Spray or Dust, Bonide Liquid Copper Fungicide <sup>1</sup> , Concern Copper Soap Fungicide, Gordon's Bordeaux Mixture, Hi-Yield Bordeaux Mix Fungicide, Hi-Yield Copper Fungicide, Lilly Miller Cueva Copper Soap Fungicide	Contact	Apples, apricots, berries, cherries, citrus, grapes, nectarines, peaches, pears, pecans, plums, prunes, quince and strawberries	Angular leaf spot, anthracnose, bacterial canker, bacterial leaf spot, bitter rot, black rot, blotch, brown rot, can cankers, cedar-apple rust, downy mildew, fire blight, fruit spots, gray mold, leaf blights, leaf curl, leaf scorch, leaf spot, melanose, powdery mildew, quince rust, leaf curl, scab and shot hole	Do not apply after shuck split or before harvest on stone fruits. Do not apply after early bloom on blueberries.
copper + insecticides	Bonide Garden Dust and Bonide Dragoon Dust with Copper	Contact	Apples, apricots, berries, cherries, citrus, grapes, nectarines, peaches, pears, pecans, plums, prunes, quince and strawberries	Angular leaf spot, anthracnose, bacterial canker, bacterial leaf spot, bitter rot, black rot, blotch, brown rot, can cankers, cedar-apple rust, downy mildew, fire blight, fruit spots, gray mold, leaf blights, leaf curl, leaf scorch, leaf spot, melanose, powdery mildew, quince rust, leaf curl, scab and shot hole	None

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
mancozeb	Bonide Mancozeb Flowable with Zinc Concentrate	Contact	Grapes	Black rot, bunch rot, Eutypa dieback (formerly known as dead arm) and downy mildew	None
myclobutanil	Eagle 20EW, Spectracide Immunox Multi-Purpose Fungicide Spray Concentrate	Systemic	Apples, apricots, cherries, grapes, nectarines, peaches, plums and prunes	Anthracnose, black rot, brown rot, powdery mildew, rust, scab and shot hole	None
neem oil	Bonide Rose Rx 3 in 1 <sup>1</sup> , Bonide Tomato and Vegetable 3 in 1, Concern Garden Defense Multi-Purpose Spray <sup>1</sup> , Ferti-lome Rose, Flower and Vegetable Spray, Bardens Alive! Shield-All II, Garden Safe Fungicide 3-in-1 <sup>1</sup> , Green Light Neem Concentrate, Green Light Powdery Mildew Killer RTU, Natural Guard Neem Py, Southern Ag Triple Action Neem Oil	Contact	All fruits	Anthracnose, black rot, Botrytis blight, downy mildew, fungal leaf spots, powdery mildew, rust and scab	None
neem oil + insecticides	Ferti-lome Triple Action Plus <sup>1</sup> , Green Light Neem <sup>11</sup> Ready-To-Use	Contact	All fruits and nuts	Anthracnose, Botrytis, downy mildew, fungal leaf spots and blights, powdery mildew, rust and scab	None
phosphorus acid	Monterey Garden-Fos Systemic Fungicide	Systemic	Apples, berries, citrus, grapes, loquats, pears, quince, stone fruits and strawberries	Apple scab, downy mildew, fire blight and root and collar and fruit rots caused by <i>Photophthora</i> spp.	None
potassium carbonate	Garden-ville Potassium Bicarbonate	Contact	All fruits	Powdery mildew	None
propiconazole	Bonide Infuse Systemic Disease Control, Ferti-lome Liquid Systemic Fungicide II, Gordon's Systemic Fungicide	Systemic	Apples, citrus, pecans and walnuts	Anthracnose, fungal leaf spots, powdery mildew, rust and scab	None
propiconazole	Bonide Infuse Systemic Disease Control, Bonide Infuse Systemic Disease Control Lawn and Landscape Ready to Spray	Systemic	Apricots, cherries, nectarines, peaches, plums and prunes	Brown rot (blossom blight and fruit), cherry leaf spot and powdery mildew	None
streptomycin sulfate	Ferti-lome Fire Blight Spray	Contact	Apple and pear	fire blight	None
sulfur	Bonide Sulfur Plant Fungicide, Ferti-lome Dusting Sulfur, Green Light Wettable Dusting Sulfur, Hi-Yield Wettable Dusting Sulfur, Lill Miller Sulfur Dust, Safer Brand Garden Fungicide II, Southern Ag Wettable or Dusting Sulfur (peaches only)	Contact	Apples, berries, cherries, citrus, grapes, nectarines, peaches, pears, plums, prunes and strawberries	Black rot, brown rot, cedar-apple rust, frog-eye, leaf spot, powdery mildew, quince rust, rust, scab, shot hole and sooty blotch	None
sulfur + potassium salts	Safer Brand 3-in-1 Garden Spray <sup>1</sup>	Contact	Apples, grapes, pears and strawberries	Powdery mildew	None

<sup>1</sup>Available in concentrate and ready-to-use formulations.

## Landscapes

**Table 1: Fungicides available for disease management in home landscapes.**

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
calcium polysulfides	Hi-Yield Improved Lime Sulfur Spray	Contact	Roses and most landscape trees and shrubs	Anthracnose, black spot, powdery mildew and rust	Highly toxic. Do not apply when temperatures exceed 85 F. Do not apply with oil or near the time of an oil application.
captan	Bonide Captan 50WP, Hi-Yield Captan 50W Fungicide, SA-50 Home and Garden Captan Fungicide	Contact	Azalea, camellias, carnation, chrysanthemum, gladiolus, tuberous begonia and rose	Black spot, Botrytis flower blight, damping-off, fungal leaf spots, petal blight, rust and tuber rot	Hi-Yield Captan 50W Fungicide can only be used on azalea, camellia, chrysanthemum and rose.
captan + insecticides	Bonide A Complete Fruit Tree Spray Concentrate, Gordon's Liquid Fruit Tree Spray, Martin's Rescue One Spray Protection	Contact	Evergreens, flowers and roses	Black spot, flower blight, leaf spots and rust	None
chlorothalonil	Bonide Fung-onil Multi-purpose Fungicide <sup>1</sup> , Ferti-lome Broad Spectrum Landscape and Garden Fungicide <sup>1</sup> , Garden Tech Daconil Fungicide <sup>1</sup> , Hi-Yield Vegetable Flower Fruit and Ornamental Fungicide, Ortho Disease B Gon Garden Fungicide Concentrate, Ortho Max Garden Disease Control Concentrate, SA-50 Liquid Ornamental and Vegetable Flowable Fungicide	Contact	Most landscape plants	Anthracnose, Botrytis blight, downy mildew, fungal leaf spots and blights, powdery mildew and rust	None
mancozeb	Bonide Mancozeb Flowable with Zinc Concentrate, SA-50 Dithane M-45	Contact	Most landscape plants	Anthracnose, downy mildew, fungal leaf spots and blights and rust	None
myclobutanil	Spectracide Immunox Multi-purpose Fungicide Spray Concentrate	Systemic	Most landscape plants	Anthracnose, black spot, blossom blight, Cercospora leaf spot, petal blight, powdery mildew, rust and scab	None
myclobutanil + insecticide + fertilizer	Spectracide Immunox 3-in-1 Insect and Disease Control Plus Fertilizer, Spectracide Immunox Plus Insect and Disease Control, Spectracide Immunox Plus Insect and Disease Multi-purpose Concentrate	Systemic	A variety of landscape plants	Anthracnose, black spot, blossom blight, Cercospora leaf spot, petal blight, powdery mildew, rust and scab	None

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
neem oil	Bonide Rose Rx 3-in-1 <sup>1</sup> , Bonide Tomato and Vegetable 3-in-1, Concern Garden Defense Multi-purpose Spray <sup>1</sup> , Ferti-lome Rose Flower and Vegetable Spray, Gardens Alive! Shield-All II, Green Light Neem Concentrate, Green Light Powdery Mildew Killer RTU, Green Light Rose Defense, Green Light Rose Defense Ready-To-Use, Garden Safe Fungicide 3-in-1 <sup>1</sup> , Natural Guard Neem Py, Southern Ag Triple Action Neem Oil	Contact	Most landscape plants and houseplants	Anthraco-nose, black spot, Botrytis, downy mildew, fungal leaf spots and blights, powdery mildew, rust and scab	Can be used for organic gardening. Do not use on sensitive plants (flowers of impatiens, fuchsia, hibiscus and some rose and carnation varieties).
neem oil + insecticides	Ferti-lome Triple Action Plus <sup>1</sup> , Green Light Neem II Ready-To-Use, Green Light Rose Defense II Ready-To-Use	Contact	Most landscape flowers, shrubs and houseplants	Anthraco-nose, black spot, Botrytis, downy mildew, fungal leaf spots and blights, powdery mildew, rust and scab	Do not use on sensitive plants (flowers of impatiens, fuchsia, hibiscus and some rose and carnation varieties).
phosphorus acid	Monterey Garden-Fos Systemic Fungicide	Systemic	Most landscape plants	Bacterial blight, downy mildew, <i>Phytophthora</i> and <i>Pythium</i>	None
potassium carbonate	Garden-ville Potassium Bicarbonate	Contact	Most landscape plants	Powdery mildew	None
propiconazole	Bonide Infuse Systemic Disease Control, Bonide Infuse Systemic Disease Control Lawn and Landscape Ready to Spray, Ferti-lome Liquid Systemic Fungicide II, Ferti-lome Liquid Systemic Fungicide II Ready to Spray, Gordon's Systemic Fungicide	Systemic	Most landscape plants	Anthraco-nose, black spot, fungal leaf spots, powdery mildew, rust and scab	Do not apply to African violets, begonias, Boston ferns or geraniums.
propiconazole	Bonide Infuse Systemic Disease Control, Bonide Infuse Systemic Disease Control Lawn and Landscape Ready to Spray	Systemic	Most landscape plants	Bulb, corm, rhizome, root, crown and stem rots	Do not apply to African violets, begonias, Boston ferns, or geraniums. Do not apply to home orchards.
streptomycin sulfate	Ferti-lome Fire Blight Spray	Contact	Chrysanthemum, dieffenbachia, philodendron, pyracantha and rose	Fire blight, bacterial wilt, bacterial stem rot, bacterial leaf spot and crown gall	For crown gall, apply as a soil drench.
sulfur	Bonide Sulfur Plant Fungicide, Ferti-lome Dusting Sulfur, Green Light Wettable Dusting Sulfur, Lilly Miller Sulfur Dust, Safer Brand Garden Fungicide II, Southern Ag Wettable or Dusting Sulfur	Contact	Most landscape plants	Powdery mildew, rust, downy mildew and Botrytis blight	Do not re-enter treated area for 24 hours after application. Do not use during periods of high temperatures (85 F or higher) or within 2 to 4 weeks of using an oil spray.
sulfur + insecticides	Bayer Advanced Nataria Insect Diseases and Mite Control	Contact	Most landscape plants	Black spot, Botrytis blight, downy mildew, leaf spots, powdery mildew, rust and scab	None
sulfur + potassium salts	Safer Brand 3-in-1 Garden Spray <sup>1</sup>	Contact	Most landscape plants	Black spot, leaf spots, powdery mildew and rust	Do not use in full sun, when temperature exceeds 90 F, or within 4 weeks of using an oil spray.
tebuconazole	Bayer Advanced Disease control for Roses, Flowers and Shrubs	Systemic	Most landscape plants and houseplants	Black spot, leaf spots, powdery mildew and rust	Do not apply to plants grown for food.

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
tebuconazole + insecticides	Bayer Advanced 3-in-1 Insect, Disease and Mite Control <sup>1</sup>	Systemic	Most landscape plants and houseplants	Anthracnose, black spot, leaf spot, petal blight, powdery mildew, rust and scab	Apply as a foliar spray every 7-14 days as necessary. Do not apply to plants grown for food.
tebuconazole + insecticides	Bayer Advanced All-in-One Rose and Flower Care, Bonide Rose Rx Systemic Drench	Systemic	Most landscape shrubs and flowers	Leaf spots (including black spot), powdery mildew, rust and southern blight	Apply as a drench every 6 weeks. Do not apply to plants grown for food.
thiophanate methyl	Bonide Infuse Systemic Disease Control Lawn and Landscape; Fertilome Halt Systemic Rose, Flower, Lawn, Ornamental Fungicide; SA-50 Thiomyl Turf and Ornamental Systemic Fungicide	Systemic	Most landscape plants	Anthracnose, flower blight, fungal bulb/corm/rhizome rots, fungal leaf spots and blights, fungal root/crown/stem rots, petal blight, powdery mildew and scab	Apply as a foliar spray, soil drench or bulb soak.
triforine	Ortho RosePride Disease Control Concentrate, Ortho RosePride Rose and Shrub Disease Control Concentrate	Systemic	A variety of landscape plants	Azalea petal blight, black spot, Entomosporium leaf spot, powdery mildew and rust	Do not use on plants grown for food.
triforine + insecticides	Ortho Orthenex Insect and Disease Control <sup>1</sup>	Systemic	A variety of landscape plants	Azalea petal blight, black spot, Entomosporium leaf spot, powdery mildew and rust	Do not use on plants grown for food.

<sup>1</sup>Available in concentrate and ready-to-use formulations.

## Lawns

**Table 1: Fungicides available for disease management of home lawns.**

Chemical	Product Name	Type of Fungicide	Diseases Controlled	Comments
captan	Hi-Yield Captan Fungicide 50WP, Southern Ag Home & Garden Captan Fungicide 50WP	Contact	Damping-off, large patch, leaf spots (melting out), root rot	None
copper	Ferti-lome Blackspot Powdery Mildew Control, SA-50 Southern Ag Liquid Copper Fungicide, Bonide Liquid Copper Soap Liquid Fungicide	Contact	Algae, ascochyta leaf blight, dollar spot, rust	Do not mix with liquid fertilizers. Don't use in spray solutions with a pH of less than 6.5. May cause staining of masonry, etc.
myclobutanil	Ferti-lome F Stop, Green Light Fung-Away Systemic Lawn Fungicide, Spectracide Immunox Lawn Disease Control (Concentrate or Granules), Spectracide Immunox Multi-purpose Fungicide Spray Concentrate	Systemic	Anthracnose, dollar spot, fusarium blight, large patch, leaf spot (melting out), spring dead spot, take-all patch, zoysia patch	None
myclobutanil + insecticide + fertilizer	Spectracide Immunox 3-in-1 Insect & Disease Control Plus Fertilizer, Spectracide Immunox Plus Insect & Disease Control, Spectracide Immunox Plus Insect & Disease Control Multipurpose Concentrate	Systemic	Dollar spot, large patch, leaf spot (melting out), spring dead spot, summer patch	None
phosphorus acid	Monterey Garden-Fos Systemic Fungicide	Systemic	Pythium blight, Pythium root rot	None
propiconazole	Bayer Avanced Fungus Control for Lawns Ready to Spray, Bayer Advanced Fungus Control for Lawns Ready to Spread Granules II, Bonide Infuse Systemic Disease Control Lawn & Landscape Ready to Spray, Ferti-lome Liquid Systemic fungicide II, Gordon's Systemic Fungicide	Systemic	Anthracnose, dollar spot, fusarium blight, gray leaf spot, large patch, leaf spot (melting out), powdery mildew, rust and take-all patch	None
thiophanate-methyl	Bonide Infuse Systemic Disease Control Lawn & Landscape Granules; Ferti-lome Halt Systemic Rose, Flower, Lawn, Ornamental Fungicide; SA-50 ThiomyI Turf and Ornamental Systemic Fungicide	Systemic	Anthracnose, dollar spot, fusarium blight, large patch, leaf spot (melting out), summer patch	None
triadimefon	Bonide Fungi-onil Lawn Disease Control, Bayer Advanced Fungus Control For Lawns, Green Light Fung-Away Systemic Lawn Fungicide Spray, High Yield Fungicide Granules	Systemic	Dollar spot, fairy rings, gray leaf spot, large patch, take-all patch	None

<sup>1</sup>Available in concentrate and ready-to-use formulations.

**Table 2: Efficacy of available fungicides for disease management of home lawns.<sup>1</sup>****Table Legend**

Efficacy <sup>1</sup>	Number
Consistently good to excellent results	4
Good to excellent control in most experiments	3
Fair to good control in most experiments	2
Inconsistent but performs well in some instances	1
Not Effective	-

Fungicides	Dollar spot	Large patch	Take-all patch, Bermuda decline, Ggg <sup>2</sup>	Gray leaf spot	Leaf spots, Melting out	Fairy rings
azoxystrobin	-	4	(3) <sup>3</sup>	4	3	3
myclobutanil	4	2	-	-	1	-
propiconazole	4	2	-2	2	2	-
triadimefon	4	4	-2	2	-	3
thiophanate-methyl	4	-	-	4	2	-

<sup>1</sup>Efficacy data are based on trials using commercial formulations of the fungicides, not the formulations readily available to homeowners. Ratings were compiled by Drs. Vincelli and Williams at the University of Kentucky (PPA-1 Chemical Control of Turfgrass Diseases 2020; <http://pest.ca.uky.edu/PSEP/Manuals/ppa1.pdf>).

<sup>2</sup>*Gaeumannomyces graminis* var. *avenae*

<sup>3</sup>Ratings within parentheses are for take-all patch caused by *Gaeumannomyces graminis* var. *avenae* (Ggg).

## Vegetables

**Table 1: Fungicides available for disease management for home vegetable gardens.**

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
captan	Hi-Yield Captan 50W Fungicide	Contact	Beans, beats, cabbage, corn, melons, peas, spinach, squash and swiss chard	Damping-off diseases	Seed treatment only
chlorothalonil	Bonide Fung-onil Multi-purpose Fungicide; Ferti-lome Broad Spectrum Landscape & Garden Fungicide, GardenTech Daconil® Fungicide; Hi-Yield Vegetable, Flower, Fruit and Ornamental Fungicide, Scotts Ortho® MAX® Garden Disease Control	Contact	Most vegetables	Anthracnose, Botrytis gray mold, downy mildew, early blight, fruit rots, fungal leaf spots and blights, gummy stem blight, late blight, powdery mildew, rust	None
copper	Bonide Copper Dust, Bonide Garden Dust (also contains an insecticide), Bonide Liquid Copper Fungicide, Bonide Dragoon Dust with Copper, Concern Copper Soap Fungicide, Liqui-Cop Copper Fungicide Garden Spray, Natural Guard Copper Soap Fungicide, SA-50 Southern Ag Liquid Copper Fungicide	Contact	Most vegetables	Anthracnose, bacterial leaf spots and blights, early blight, fungal leaf spots and blights, gummy stem blight, powdery mildew, scab, white rust	Can be used for organic gardening. Do not mix with liquid fertilizers. Do not use in spray solutions with a pH of less than 6.5. May cause staining of masonry, concrete, etc.
mancozeb	Bonide Mancozeb Flowable with Zinc, Southern Ag Dithane M-45	Contact	Asparagus, corn, cucurbits, onions, potaoes and tomatoes	Anthracnose, early blight, fungal leaf spots and blights, gummy stem blight, rust	None
myclobutanil	Spectracide Multi-purpos <sup>e</sup> Fungicide	Systemic	Asparagus, cucurbits, snap beans and tomatoes	Pod tip rot, powdery mildew, rust	Do not spray within 14 days of harvest.
phosphorus acid	Monterey Garden-Fos Systemic Fungicide	Systemic	Most vegetables	Root, crown and fruit rots caused by <i>Phytophthora</i> and <i>Pythium</i> species; downy mildew; late blight	None
propiconazole	Bonide Fung-onil Lawn and Garden Disease Control Ready to Spray, Bonide Infuse Systemic Disease Control Lawn and Landscape Ready to Spray, Ferti-lome Ready to Spray Liquid Systemic Fungicide, Maxide Dual Action Disease Killer Ready to Spray	Systemic	Sweet corn	Leaf spots and blights and rust	Do not spray within 14 days of harvest.

Chemical	Product Name	Type of Fungicide	Crops	Diseases Controlled	Comments
sulfur	Bonide Garden Dust, Bonide Sulfur Plant Fungicide, Bonide Tomato and Vegetable 3 in 1, Ferti-lome Dusting Sulfur, Hi-Yield Dusting Wettable Sulfur, Safer Brand Garden Fungicide II, Southern Ag Wettable or Dusting Sulfur	Contact	Beans (may injure some varieties), cole crops, onions and peas	Botrytis gray mold, downy mildew, powdery mildew, rust	Do not re-enter treated area for 24 hours after application. Do not use during periods of high temperatures (85 F or higher) or within 2-4 weeks of using an oil spray. Do not use on cucurbits (cucumbers, squash, melons, etc.).
sulfur + potassium salts	Safer Brand 3-in-1 Garden Spray <sup>1</sup>	Contact	Beans, cucumbers, peas, potatoes and squash	Powdery mildew	Do not use in full sun when temperature exceeds 90 F or within 4 weeks of an oil spray.

<sup>1</sup>Available in concentrate and ready-to-use formulations.

**Table 2: Biopesticides available for disease management for home vegetable gardens.**

Product Name	Crops	Diseases Controlled	Comments
Bayer Advanced Serenade Garden Disease Control	Most vegetables	Alternaria spots and blight, Botrytis blight, gummy stem blight, onion purple blotch, powdery mildew	None
GreenCure Foliar Fungicide	Most vegetables	Leaf spots and blights, powdery mildew	None
BioSafe Disease Control	All vegetables	Leaf spots and blights, powdery mildew	None
Novozyme Actinovate Lawn and Garden	Most vegetables and herbs	Botrytis gray mold, damping-off diseases and leaf spots and rust	None
Novozyme Actino-Iron Lawn and Garden	Most vegetables and herbs	Damping-off diseases and leaf spots and rust	None
BioWorks RootShield Home & Garden	Most vegetables	Damping-off diseases and root and crown rots	Apply to seed, plant roots and soil only.
SaferGro Mildew Cure	All vegetables	Powdery mildew	None
BioWork MilStop	Most vegetables	Powdery mildew	None
Neem Oils (many brands)	Most vegetables	Powdery mildew, rusts	None
Dr. Earth Final Stop Disease Control Fungicide	Most vegetables	Botrytis gray mold, leaf spots and blights and powdery mildew	None
Simple Success Companion Biological Fungicide	Most vegetables and herbs	Damping-off diseases and root and crown rots	None

The home gardens section was revised October 2023 by R. Singh.



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# Nematode Management

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All crops grown in Louisiana are subject to some type of nematode attack. Some nematodes are very damaging, such as root-knot, reniform, and cyst nematodes. Other nematodes cause only minor root damage, such as stunt, spiral, and stubby-root nematodes. Different crops, and even varieties within a crop, may differ in their response to each nematode species. Chemical control should be used if a nematode population appears to be at damaging levels and is likely to cause significant yield loss.

**Notes for all tables in this chapter:**

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor is endorsement of a particular product by LSU or the LSU AgCenter implied.

<sup>2</sup> Rates are the amount of formulation (product) per acre unless otherwise indicated.

## Managing nematodes in field crops.

### Cotton

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone II	3-6 gal	Apply fumigant 1 week before planting at a depth of 14 inches beneath the soil surface. Soil should not be excessively wet at the time of application.
AgLogic 15G	3.5-7 lb	Apply granules in seed furrow and cover with soil.
Vydate C-LV	17 fl oz (foliar)	Apply at 1-7 true leaf stage and a second application 14 days later. Use after initial treatment with a nematicide. For reniform, root-knot, and lance nematodes.
Acceleron INT-710	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo COT202	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo Cotton	Seed application	Use in fields with low to moderate nematode levels only.
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.
AERIS Seed Applied System	Seed application	Use in fields with low to moderate nematode levels only.
Majestene	7.2-19.6 fl oz / 1,000 ft row	In-furrow spray on or below seed.
Velum	5.0-6.8 fl oz	In-furrow spray on or below seed. Do not apply more than 13.7 fl oz per year.
Averland FC	3.5 fl oz	In-furrow spray on or below seed. Do not apply more than 7.0 fl oz per year.

### Corn

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	10-13 lb (40-in rows)	Apply in a 12-15-inch band at planting. Incorporate into top 2-4 inches of soil.
Counter 15G Lock 'n Load	6-8 oz / 1,000 ft row	Apply in a 7-inch band.
Counter 20G Lock 'n Load	4.5-6 oz / 1,000 ft row	Apply in a 4-5 inch band over open seed furrow in front of press wheel or apply in-furrow.
Counter 20G Smartbox	4.5-6 oz / 1,000 ft row	Apply in a 4-5 inch band over open seed furrow in front of press wheel or apply in-furrow.
Avicta Complete Corn 250	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Complete Corn 500	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo Corn	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Duo 250 Corn	Seed application	Use in fields with low to moderate nematode levels only.
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.
Telone II	3-6 gal	Apply soil fumigant 1 week before planting at a depth of 14 inches beneath the soil surface. Soil should not be excessively wet at the time of application.
Averland FC	4-6 fl oz	Apply in-furrow. Do not apply more than 6 fl oz per year.

## Grain Sorghum

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Counter 15G Lock 'n Load	7 oz / 1,000 ft row	Apply in a 5-7 inch band behind planter shoe in front of press wheel and lightly incorporate with chains or tines.
Counter 20G Lock 'n Load	5.2 oz / 1,000 ft row	Apply in a 5-7 inch band behind planter shoe in front of press wheel and lightly incorporate with chains or tines.
Counter 20G Smartbox	5.2 oz / 1,000 ft row	Apply in a 5-7 inch band behind planter shoe in front of press wheel and lightly incorporate with chains or tines.
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.

## Peanut

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate C-LV	34-68 fl oz (soil)	Apply in a 7-inch band and incorporate.
Vydate C-LV	17 fl oz (foliar)	Apply 28 days after planting and again after an additional 14 days.
Velum	6.84 fl oz	In-furrow spray on or below seed. Do not apply more than 13.7 fl oz per year.

## Soybean

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Poncho Votivo	Seed application	Use in fields with low to moderate nematode levels only.
ILeVO	Seed application	Use in fields with low to moderate nematode levels only.
Avicta Complete Beans 500	Seed application	Use in fields with low to moderate nematode levels only.
Majestene	7.3-19.6 fl oz / 1,000 ft row	Apply at planting in-furrow or in a T-band.
Velum	3-6 fl oz	Apply at planting in-furrow.
Telone II	3-6 gal	Apply pre-plant under the row. Reserve for heavy nematode pressure.

## Sugarcane

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	1.8-3.6 lb / 1,000 ft row	Apply in a 12-15 inch band over seed pieces and cover with soil.
Nimitz	3.5-7 pints	Apply broadcast or banded at-planting or at ratoon.

## Sweet Potato

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	1.6-2.1 lb / 1,000 ft row	Apply in a 12-15 inch band.
Mocap EC	5.1-6.9 oz / 1,000 ft row	Apply in a 12-15 inch band.
Nimitz	3.5-7 pints	Application can be made at planting or pre-plant. Apply in a moist, well-prepared bed. <b>EU export restrictions apply.</b>
AgLogic 15G	10-20 lb	Apply in a 12-inch band over open furrow or soil surface and cover immediately during bed forming.
Vydate L	2 gal	Apply within a week of planting and incorporate 4-6 inches.
Velum	6.84 fl oz	Apply as an in-furrow spray using ground equipment.
Telone II	6-8 gal	Apply pre-plant beneath the row, 7-10 days prior to planting.
Vapam HL	See manufacturer's label	Must be applied 3 weeks prior to planting.
K-Pam HL	See manufacturer's label	Must be applied 3 weeks prior to planting.
Salibro	15.4-61.4 fl oz	Apply broadcast and incorporate into soil, or apply as an in-furrow spray. <b>EU export restrictions apply.</b>

## Managing nematodes in fruit trees and small fruit crops.

### Blackberry, Boysenberry, Dewberry, Raspberry, Strawberry

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone II	27-35 gal (broadcast)	Apply 14 days prior to planting. Use 2 chisels spaced 12 inches apart per row. Inject to a depth of 10 inches.
Telone C-17	32.4-42 gal (broadcast)	Apply 14 days prior to planting. Use 2 chisels spaced 12 inches apart per row. Inject to a depth of 10 inches.
Telone C-35	39-50 gal (broadcast)	Apply 14 days prior to planting. Use 2 chisels spaced 12 inches apart per row. Inject to a depth of 10 inches.
Telone EC	9-24 gal (broadcast)	Apply by drip irrigation equipment. Soil should be moist 9 inches beneath the surface.
DiTera DF	13-100 lb (broadcast)	Incorporate by mechanical means, irrigation, or rainfall.

### Strawberry (specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone C-17	32.4-37 gal	Waiting period of 1 week for every 10 gal applied.
Telone C-35	39-45 gal	Waiting period of 1 week for every 10 gal applied.
Paladin	35-51.3 gal	Follow label and observe temperature dependent waiting interval before planting (21-42 days).
Velum	6.0-6.5 fl oz	Apply through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Nimitz	3.5-7 pt	Apply 7 days prior to transplanting.

### Fruit Tree Sites (preplant)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vapam HL	50-75 gal	Apply by chemigation and observe waiting period.
K-Pam HL	30-62 gal	Apply by chemigation and observe waiting period.
Telone II	27-35 gal	Waiting period of 1 week for every 10 gal applied.
Telone C-17	32.4-42 gal	Waiting period of 1 week for every 10 gal applied.
Telone C-35	39-50 gal	Waiting period of 1 week for every 10 gal applied.

### Citrus

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Velum	6.84 fl oz	Apply by chemigation through low-pressure drip.
DiTera DF	13-100 lb (broadcast)	Incorporate by mechanical means, irrigation, or rainfall.
Movento	8-10 fl oz (foliar)	Do not apply during bloom phase.
Vydate L	2 gal	Apply in 20 gal of water and incorporate to a depth of 4-8 inches. <b>Use on nonbearing trees only.</b>

### Apple, Peach, Nectarine

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	2 gal	Apply in 20 gal of water and incorporate to a depth of 4-8 inches. <b>Use on nonbearing trees only.</b>
DiTera DF	13-100 lb (broadcast)	Incorporate by mechanical means, irrigation, or rainfall.

### Other Pome and Stone Fruits

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Velum	6.5-6.84 fl oz	Apply through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Movento	6-9 fl oz (foliar)	Do not apply during bloom.
Nimitz	3.5-7 pints	Apply first application after flower buds start to swell and second application after harvest.

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## Managing nematodes in home gardens.

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Root-knot and reniform nematodes cause problems on many vegetables grown in the home garden. Cultural practices and resistant varieties can help reduce the amount of damage in the garden.

### Cultural Practices

1. Plant early before nematodes become active in soil.
2. Rotate crops in the garden.
3. Rotate the location of the garden each year.
4. Add organic matter to the soil in the form of green manures, compost, or mulches to stimulate natural enemies of nematodes and improve growing conditions within the soil for plants.
5. Use fallow plowing during parts of the summer to reduce nematode levels.
6. Keep the garden clean of weeds and grasses, which often serve as natural hosts for nematodes.
7. Keep soil fertility levels high and have the soil pH in the correct range for your soil type.
8. Provide extra water during prolonged dry periods.
9. Remove crops immediately after they are finished producing, especially the roots.
10. Most of the marigolds (except Signet types) are effective trap crops against root-knot nematodes. Plant the marigolds solid for at least two to three months and then plant vegetables.

### Resistant Varieties or Crops

- Root-knot nematode resistant varieties include:
  - **Tomatoes**
    - Vine types: Big Beef, Champion, Terrific, Better Boy, Mountain Fresh Plus.
    - Bush types: Celebrity, Crista, Fresh Plus, Sanibel.
    - Others: Muriel Roma, Small Fry.
  - **Southern Peas** - Mississippi Silver and Mississippi Purple.
- Reniform nematode-resistant crops include broccoli, cauliflower, corn, okra, onion, peanut, radish, and turnip. This also includes sweet potatoes Avoyelles, Bellevue, Bonita, Burgundy, Evangeline, Covington and Jewel.

## Managing nematodes in field and commercial ornamentals.

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days).
Dominus	10-40 gal	Waiting interval of 10-14 days before planting.
Telone II	42-55 gal	Wait at least 1 week for every 10 gal applied before planting.
Telone C-17	50-66 gal	Wait at least 1 week for every 10 gal applied before planting.
Telone C-35	60-79 gal	Wait at least 1 week for every 10 gal applied before planting.
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Vapam HL	37-75 gal	Tarping may be used to improve efficacy.
K-pam	30-62 gal	Tarping may be used to improve efficacy.
Pylon	5.2-10 fl oz / 100 gal (foliar)	For foliar nematodes. Make first application at first signs of damage and second at 7-14 days.
Basamid G	302-446 lb	Mechanically incorporate to a depth of 6 inches. Follow label and observe temperature dependent waiting interval before planting.
Mocap EC	2 qt (broadcast)	Incorporate 2-4 inches. Stock may be transplanted into the treated area after 72 hours. Pertains to field nursery stock only.

## Managing nematodes in turfgrass.

### Pre-plant

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Basamid G	302-446 lb	Mechanically incorporate to a depth of 6 inches. Follow label and observe temperature dependent waiting interval before planting.
Dominus	10-40 gal	Waiting interval of 10-14 days before planting.

### Post-plant

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Multiguard Protect	8 gal (initially)	After initial treatment, apply maintenance rates at 14- to 18-day intervals. Irrigate to a depth of 6 inches.
Multiguard Protect	5.5-8 gal (for maintenance)	Can be applied up to 6 times per year.
Indemnify	8.5-17 fl oz	Apply in 87-218 gallons of water per acre.
Nortica	30-100 lb	Apply every 3 months as necessary and irrigate to a depth of 4 inches.
Nortica 10 WP	35-50 lb	Apply every 3 months as necessary and irrigate to a depth of 4 inches.
Telone II	5-10 gal	Use on established turf for sod farms. <b>Not for golf greens.</b>
Divanem	3.13-6.25 fl oz	Apply at this rate on a 14-21-day interval.
Divanem	6.25-12.2 fl oz	Apply at this rate on a 21-28 day interval.
Quali-Pro Total	16-24 fl oz	Apply at this rate on a 14-21 day interval.
Quali-Pro Total	24-57 fl oz	Apply at this rate on a 21-28 day interval.

## Managing nematodes in vegetables crops.

### Beans (Snap, Lima)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	13-20 lb	Mechanically incorporate to a depth of 2-4 inches.

### Brassica Leafy Vegetables

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Velum	6.5-6.84 fl oz	Apply by chemigation through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Movento	4-5 fl oz (foliar)	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
Nimitz	3.5-7 pt	Apply 30 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than once per crop and 7 pts per year.

### Cabbage (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Mocap EC	2.4 oz / 1,000 ft row	Apply in a 15-inch band. Mechanically incorporate to a depth of 2-4 inches. Do not use a seed furrow treatment or allow granules to contact the seed.
Mocap 15G	13 lb	Mechanically incorporate to a depth of 2-4 inches.

### Carrot (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	1-2 gal	Apply in-furrow using a minimum of 20 gal of water. Do not apply more than 2.5 gal per year.
Salibro	30.7-61.4 fl oz	Apply broadcast and incorporate.

### Cole Crops (Broccoli, Cabbage, Cauliflower)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.

### Cucumber (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	13 lb	Mechanically incorporate to a depth of 2-4 inches.

### Cucurbits (Cucumbers, Melons, Squash, Pumpkins, etc.)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Nimitz	3.5-5 pt	Apply 7-10 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than twice per crop and 7 pts per year.
Majestene	4-8 qt	Apply by soil drench or chemigation. Can be used prior to planting, at plant, or after planting.
Vydate L	1-2 gal (broadcast)	Incorporate 2-4 inches. Do not apply more than 3 gal per year.
Vydate L	2-4 pt (foliar)	Foliar spray 2-4 weeks after planting and 2-3 weeks after last application
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days).
Salibro	15.3-23 fl oz	Apply broadcast and incorporate, or through drip chemigation.

## Eggplant (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	1 gal (band) or 4 pt (foliar)	Apply in a band 2-3 weeks after transplanting and again 4 weeks later. Do not apply more than 3 gal per year.

## Fruiting Vegetables (Eggplant, Okra, Pepper, Tomato)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Movento	4-5 fl oz (foliar)	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
Velum	6.5-6.84 fl oz	Apply by chemigation through low-pressure drip. Do not apply more than 13.7 fl oz per year.
Majestene	4-8 qt	Apply by soil drench or chemigation. Can be used prior to planting, at plant, or after planting.
Nimitz	3.5-7 pt	Apply 7-10 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than once per crop and 7 pts per year.
Salibro	30.7-61.4	Apply broadcast and incorporate, or apply through drip chemigation.

## Irish Potato

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Mocap 15G	40-80 lb	Apply uniformly and mechanically incorporate to a depth of 2-4 inches.
Mocap EC	1-2 gal (broadcast)	Apply uniformly and mechanically incorporate to a depth of 2-4 inches.
Movento	4-5 fl oz	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
Velum	6.5-6.84 fl oz	Apply with overhead chemigation. Do not apply more than 13.7 fl oz per year.
Vydate C-LV	34-68 fl oz	Apply in-furrow with a minimum of 20 gal of water.
Salibro	30.7-61.4 fl oz	Apply broadcast and incorporate.

## Leafy Vegetables

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Nimitz	3.5-7 pt	Apply 7-10 days before planting as broadcast incorporated, banded and incorporated, or by chemigation. Do not apply more than twice per crop and 7 pts per year.
Velum	6.5-6.84 fl oz	Apply with overhead chemigation. Do not apply more than 13.7 fl oz per year.
Movento	4-5 fl oz (foliar)	Apply when sufficient leaf surface is available. Do not apply more than 10 fl oz per year.
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.

## Pepper (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Vydate L	2 pt (transplant water)	Add material to transplant water. Use a minimum of 200 gal of water. Do not apply more than 12 pt per year.
Vydate L	2 pt (drip chemigation)	Supplemental control after a labeled fumigant such as Telone, Vapam, or K-Pam. Do not apply more than 12 pt per year.
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days).

## Sweet Corn

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Conter 20G Lock 'n Load	4.5-6 oz / 1,000 ft row	Apply in-furrow. Do not exceed 6.5 lb per year
Counter 20G Smartbox	4.5-6 oz / 1,000 ft row	Apply in-furrow. Do not exceed 6.5 lb per year
Mocap 15G	40 lb (broadcast)	Mechanically incorporate to a depth of 2-4 inches. Waiting interval of 3 days before planting.

## Tomato (Specific)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
DiTera DF	13-100 lb (broadcast)	Apply pre-plant, at plant, or post-plant. Multiple applications may be required.
Vydate L	2-4 pt	Apply by chemigation every 1-2 weeks. Do not apply more than 12 pt per year.
Paladin	35-51.3 gal (broadcast)	Follow label and observe temperature dependent waiting interval before planting (21-42 days)

## Vegetables - General (Soil Fumigants)

Product Choices <sup>1</sup>	Rate <sup>2</sup>	Comments
Telone II	9-12 gal (broadcast)	Apply 2-3 weeks prior to planting.
Telone C-17	10.8-17.1 gal (broadcast)	Apply 2-3 weeks prior to planting.
Telone C-35	13-20.5 gal (broadcast)	Inject 12-14 inches beneath the row.
Telone EC	9-18 gal (broadcast)	Use with drip irrigation and reduce rate to match row width.
Vapam HL	37.5-75 gal	Inject and tarp.
K-Pam HL	30-60 gal	Inject and tarp.
Dominus	10-40 gal	Waiting interval of 10-14 days before planting.

The nematode section was revised October 2023 by T. Watson.



# Seed Treatments, In-Furrow Sprays and Granular Fungicide Options

## Field Crops

### Seed Treatments, In-Furrow Sprays and Granular Fungicide Options for Field Crops

Seed treatments offer potential benefits to ensure desirable crop stands. Although seed treatment will not make poor seed germinate, when the correct treatment is used on certified seed, it may prevent or reduce seed decays, seedling blights, and other diseases. Seed treatments may act in two ways: 1) they may reduce pathogens on seed and 2) they may help protect the seed and seedlings from pathogenic organisms in the soil. In the past, in-furrow sprays or granules were used; however, because of convenience these options have mostly been replaced with seed treatments. Nevertheless, in-furrow and granular fungicides remain effective for many diseases and may be more effective than seed treatments in problem areas.

#### Corn, Grain Sorghum, Rice, and Wheat

Fungicide seed treatments are commonly applied to large and small grain seed. Depending on the package, fungicides from groups 3, 4, 7, 11, and/or 12 are most commonly applied to seed. Data from LSU AgCenter field trials indicate slight increases in stand or emergence; however, seed-applied fungicides very rarely provide economic benefit in these crops. Producers can save input costs by not treating or over-treating these crops prior to planting. If a field has a history of soilborne seedling disease, fungicide seed treatments may be useful in these situations.

#### Soybean

Fungicide seed treatments from the same groups listed above are commonly applied to soybean and will provide economic benefit in the event of seedling disease development. Seedling disease issues are more common in soybean than in the crops above. Generally, generic fungicides from groups 3, 4, and/or 11 are sufficient to protect seed and seedlings from pathogens in soybean.

#### Cotton

Do not plant cotton without a fungicide seed treatment! Do your homework by figuring out what is already on the seed. If there are a minimum of three different modes-of-action present, over-treating likely is not necessary. If the decision is made to over-treat, use a different mode of action. Significant cost savings can be realized depending on the seed company and seed treatment options.

The following table lists labeled available active ingredients commonly used in field crop production, their mode of action, and the targeted organisms listed by companies. This list may not be all-inclusive as many new products are continually developed and multiple online sources were used to compile this information.

Always refer to product labels for rate and use information.

Active Ingredients	FRAC Code	Targeted Pathogens
copper hydroxide, copper oxychloride	M1	<i>Pseudomonas syringae</i> , <i>Xanthomonas translucens</i> , <i>Tilletia caries</i> ; damping-off/seedling diseases
thiram, mancozeb	M3	Seed decay, damping-off, and seedling blights caused by many seedborne and soilborne organisms
thiabendazole	1	Seed decay, damping-off, and seedling blights caused by many seedborne and soilborne organisms
iprodione	2	<i>Rhizoctonia solani</i>
difenoconazole, imazalil, ipconazole, myclobutanil, prothioconazole, tebuconazole, triticonazole	3	<i>Alternaria</i> , <i>Aspergillus</i> , <i>Botrytis</i> , <i>Cochliobolus</i> , <i>Fusarium</i> , <i>Penicillium</i> , <i>Sclerotinia</i> , and <i>Sphacelotheca</i> spp.; <i>Thielaviopsis basicola</i> , <i>Tilletia caries</i> , <i>Tilletia foetida</i> , <i>Urocystis agropyri</i> , <i>Ustilago nuda</i> var. <i>tritici</i> , <i>Rhizoctonia solani</i> , <i>Cochliobolus sativus</i>
mefenoxam, metalaxyl	4	<i>Pythium</i> and <i>Phytophthora</i> spp.
boscalid, carboxin, fluxapyroxad, penflufen, penthiopyrad, sedaxane	7	<i>Cochliobolus</i> , <i>Fusarium</i> , and <i>Pythium</i> spp.; <i>Rhizoctonia solani</i> , <i>Blumeria graminis</i> , <i>Puccinia recondita</i> , <i>Septoria tritici</i> , <i>Cephalosporium gramineum</i> , <i>Ustilago tritici</i> , <i>Sphacelotheca reiliana</i>
azoxystrobin, fenamidone, fluoxastrobin, pyraclostrobin, trifloxystrobin	11	<i>Aspergillus</i> , <i>Cladosporium</i> , <i>Colletotrichum</i> , <i>Fusarium</i> , <i>Penicillium</i> , <i>Pythium</i> , and <i>Phomopsis</i> spp.; <i>Rhizoctonia solani</i> , <i>Sclerotinia rolfsii</i> , <i>Sclerotium rolfsii</i> , and <i>Sphacelotheca reiliana</i>
fludioxinil	12	Seedborne and soilborne fungi which cause seed decay, damping-off and seedling blights
etridiazole, PCNB, tolclofos-methyl	14	<i>Pythium</i> , <i>Fusarium</i> , and other <i>Deuteromycete</i> species causing seed decay and seedling blights; <i>Rhizoctonia solani</i>
ethaboxam	22	Multiple fungal species; <i>Phytophthora</i> spp.

This section was updated/revised September 2024 by Trey Price.

# Vegetables

## Seed Disinfestation and Protection

Bacterial, fungal and viral plant pathogens can be introduced into a crop on or within seeds. Generally, the earlier a pathogen comes into contact with the crop, the greater the potential for a plant disease to develop. Seed treatments are an effective means of preventing seedborne bacterial diseases and damping-off diseases. It is important to note that not all seed sanitizers are approved for organic vegetable production by the Organic Materials Review Institute ([www.omri.org](http://www.omri.org); 541-343-7600). Organic producers must verify that a seed treatment is OMRI approved prior to applying a seed treatment.

**Seed sanitation to eradicate bacterial or viral plant pathogens** – When treating vegetable seeds, it is critical to follow the directions exactly, because germination can be reduced by the treatment and/or the pathogen may not be eliminated completely. The effect of a treatment on germination should be determined on a small lot of seeds prior to treating large amounts of seed. Treatments should not be applied to pelleted seed, previously treated seed or old or poor quality seed. A protective fungicide treatment (see below) can be applied to the seed following treatment for bacterial pathogens.

**Seed treatments to prevent damping-off diseases** – Most commercially available vegetable seeds come treated with at least one fungicide and/or insecticide. Vegetable producers who would like to apply their own seed treatment should purchase nontreated seed. Although many fungicides are labeled for use on vegetable seeds, most fungicides are restricted to commercial treatment only and should not be applied by producers. Labeled fungicides can be applied to seed following treatment for bacterial pathogens (see above). **Do not use fungicide treated seed for food or feed.**

## Seed Disinfestants

### Hot water treatment

Soaking seeds in hot water can reduce seedborne fungi and bacteria from the seed coat, if not eradicated. Hot water soaking will not kill pathogens associated with the embryo nor will it remove seedborne plant viruses from the seed surface.

1. Place seeds loosely in a weighted cheesecloth or nylon bag.
2. Warm the seeds by soaking it for 10 minutes in 100 F (37 C) water.
3. Transfer the warmed seeds into a water bath already heated to the temperature recommended for the vegetable seeds (Table 1). The seeds should be completely submerged in the water for the recommended amount of time (Table 1). Agitation of the water during the treatment process will help maintain a uniform temperature in the water bath.
4. Transfer the hot water treated seeds into a cold-water bath for five minutes to stop the heating action.
5. Remove seeds from the cheesecloth or nylon bag and spread them evenly on a clean paper towel or a sanitized drying screen to dry. Do not dry seeds in areas where fungicides, pesticides or other chemicals are located.
6. Seeds can be treated with a labeled fungicide to protect against damping-off pathogens.

**Table 1. Recommended temperatures and treatment times for hot-water disinfestation of selected vegetable seeds.**

Vegetable Crops	Water Temperature (°F, °C)	Soaking Time (minutes)
Broccoli	122/50	20-25
Brussels sprouts	122/50	25
Cabbage	122/50	25
Carrot	122/50	15-20
Cauliflower	122/50	20
Celery	122/50	25
Chinese cabbage	122/50	20
Collard	122/50	20
Cucumber <sup>1</sup>	122/50	20
Eggplant	122/50	25
Garlic	120/49	20
Kale, Kohlrabi	122/50	20
Lettuce	118/48	30
Mint	112/44	10
Mustard, Cress, Radish	122/50	15
Onion	115/46	60
Pepper	125/51	30
Rape, Rutabaga	122/50	20
Shallot	115/46	60
Spinach	122/50	25
Tomato <sup>2</sup>	122/50	25
Turnip	122/50	20

<sup>1</sup> Cucurbit seeds other than cucumbers can be severely damaged by hot-water treatment and should be disinfested using chlorine bleach.

<sup>2</sup> Germination may be delayed by 2-3 days depending on the crop variety.

### Chlorine bleach treatment

Treating seeds with a solution of chlorine bleach can effectively remove bacterial pathogens and some viruses (i.e., Tobacco mosaic virus) that are borne on the surface of seeds.

1. Add one quart (946 ml) of Clorox® bleach to five quarts (4.7 L) of potable water.
2. Add a drop or two of liquid dish detergent or a commercial surfactant such as Activator 90 or Silwet to the disinfectant solution.
3. Add seeds to the disinfectant solution (one pound of seeds per four quarts of disinfectant solution) and agitate for one minute. Prepare fresh disinfectant solution for each batch of seeds to be treated.
4. Rinse the seeds in a cold-water bath for five minutes to remove residual disinfectant.
5. Spread seeds evenly on clean paper towel or a sanitized drying screen to dry. Do not dry seeds in areas where fungicides, pesticides or other chemicals are located.
6. Seeds can be treated with a labeled fungicide to protect against damping-off pathogens.

### Hydrochloric acid treatment

Tomato seeds can be treated with a dilute solution of hydrochloric acid (HCl) solution to eliminate seedborne bacterial pathogens such as *Xanthomonas* spp. (Bacterial leaf spot), *Pseudomonas syringae* pv. *tomato* (Bacterial speck) and *Clavibacter michiganensis* subsp. *michiganensis* (Bacterial canker). Hydrochloric acid can also be used to remove Tobacco mosaic virus from the surface of tomato seeds. **Do not use HCl treated seeds for food or animal feed.**

1. Prepare a 5% solution of HCl by adding one part acid to 19 parts potable water. Prepare the acid solution in a well ventilated area and avoid direct skin contact with the acid.
2. Soak seeds for six hours with gentle agitation.
3. Carefully drain the acid off of the seeds and rinse seeds under running potable water for 30 minutes. Alternatively, rinse the seeds 10-12 times with potable water to remove residual acid.
4. Spread seeds evenly on a clean paper towel or a sanitized drying screen to dry. Do not dry seeds in areas where fungicides, pesticides or other chemicals are located.
5. Seeds can be treated with a labeled fungicide to protect against damping-off pathogens.

### Trisodium phosphate treatment

Tomato seeds can be treated with trisodium phosphate (TSP) to eradicate seed-transmitted *Tobacco mosaic virus*. **Do not use TSP treated seeds for food or animal feed.**

1. Prepare a 10% solution of TSP (one part TSP in nine parts potable water). Trisodium phosphate is available at most home supply or paint stores. Avoid direct skin contact with the TSP solution.
2. Soak seeds for 15 minutes in the disinfectant solution.
3. Rinse the seeds in a cold water bath for five minutes to remove residual disinfectant.
4. Spread seeds evenly on a clean paper towel or a sanitized drying screen to dry. Do not dry seed in areas where fungicides, pesticides or other chemicals are located.
5. Seeds can be treated with a labeled fungicide to protect against damping-off pathogens.

### Procedure for Testing Seed Germination after Seed Disinfecting Treatments

1. Randomly select 100 seeds from each seed lot.
2. Treat 50 seeds using one of the sanitizers described above.
3. After the treated seeds have dried and **before** application of a protectant fungicide, plant the treated and nontreated seeds separately in flats containing planting mix according to standard practice. Label each group as treated or nontreated.
4. Allow the seeds to germinate and grow until the first true leaf appears (to allow for differences in germination rates to be observed).
5. Count seedlings in each group separately.
6. Determine the percent germination for each group:

$$\frac{\text{number of seedlings emerged}}{\text{number of seeds planted}} \times 100$$

7. Compare percent germination between the treated and nontreated groups. Percent germination should be within 5% of each other.

### Seed Protectants

Fungicide label registrations are always changing, thus the information provided in this publication may become invalid at anytime. Always read the entire, most recent label carefully and follow all directions and restrictions before using one of the recommended seed protectants.

#### Thiram and Captan

Thiram is the most commonly used seed-protectant fungicides for vegetable crops, however, Captan is also labeled as a seed protectant for many vegetables (Table 2). Purchase treated seed, or coat seed by placing seed and fungicide in a closed container and shaking until seeds are uniformly coated. **Do not use Thiram or Captan treated seeds for food or animal feed.**

**Table 2. Recommended seed treatment dosage rates for selected vegetable seeds**

Vegetable Crop	Thiram <sup>1</sup> 50WP Ounces (dry wt <sup>3</sup> )/100 lb seed	Captan <sup>2</sup> Fluid ounces/100 lb seed
Beans (Lima)	3	-. <sup>4</sup>
Beans (Snap)	2	2.5
Broccoli, Brussels sprouts, Cabbage, Cauliflower	8	1.5
Cantaloupe, Cucumber	4.5	2.5
Carrots	8	-
Cowpeas	2	2.5
Endive	8	-
Eggplant	6	-
Kale, Kohlrabi	8	-
Leafy greens (collard, lettuce, mustard, spinach, Swiss chard, turnip)	8	1.5
Okra	6	-
Pea	3	2.5
Peppers	8	2.5
Pumpkin, Squash, Watermelon	4.5	1.5
Radish	8	1.5
Tomato	6	-
All other vegetable seed	8	-

<sup>1</sup> Thiram belongs to the Fungicide Resistance Action committee (FRAC) group M3.

<sup>2</sup> Captan belongs to the Fungicide Resistance Action committee (FRAC) group M4.

<sup>3</sup> See table 4 for dry weight conversions.

<sup>4</sup> The dash indicates that the fungicide is not labeled for and/or recommended for the specified vegetable seeds.

**Fungicide Seed Protectants for Potatoes**

Properly treated seed potatoes can increase stand and improve stand uniformity. Proper application of seed potato protectants is essential because excess use of chemical can result in phytotoxicity and inadequate coverage can result in poor stand. **Dip treatments are not recommended** as pathogens can easily be spread from treated to nontreated seeds using this mode of application. **Do not use treated seeds for food or animal feed.**

**Table 3a. Recommended seed treatment dosage rates and Fungicide Resistance Action Committee (FRAC) group for Irish potatoes**

Active Ingredient	Product Name	Rate <sup>1</sup> /100lb	Rate/acre	FRAC <sup>2</sup> Group
fludioxonil + mancozeb	Maxim MZ	0.5 lb	- <sup>3</sup>	12, M
penflufen + prothioconazole	Ernesto Silver	0.37 oz	-	7, 3
flutolanil + mancozeb	MonCoat MZ	0.75 lb	-	7,M
flutolanil	Moncut DF	-	0.71-1.1 lb <sup>4</sup>	7

<sup>1</sup> Apply as a dust. See Table 4 for dry weight conversions.

<sup>2</sup> Abbreviation for Fungicide Resistance Action Committee.

<sup>3</sup> The dash indicates that the fungicide is not labeled for and/or recommended for the specified application.

<sup>4</sup> Apply uniformly over and around the seeds as an in-furrow spray. Refer to label for detailed application instructions.

**Table 3b. Recommended seed treatment dosage rates and Fungicide Resistance Action Committee (FRAC) group for sweet potatoes**

Active Ingredient	Product Name	Rate <sup>1</sup> /100lb	Rate/acre	FRAC <sup>2</sup> Group
dicloran	Botran 75W	-	3.0-5.0 lb <sup>3,4</sup>	14

<sup>1</sup> Apply as a dust. See Table 4 for dry weight conversions.

<sup>2</sup> Abbreviation for Fungicide Resistance Action Committee.

<sup>3</sup> Apply uniformly over and around the seeds as an in-furrow spray. Refer to label for detailed application instructions.

<sup>4</sup> Do not plant tomatoes as a follow-up crop.

**Table 4. Metric conversions for dry weight measures.**

Imperial	Metric
1 pound	454 grams
1 ounce	28.4 grams
0.035 ounce	1 gram
1 teaspoon (0.16 ounces)	

# Soil Treatments

## Management of Nematodes and Soilborne Diseases

Several plant-parasitic nematodes and plant pathogens inhabit the soil and can cause disease in or damage to crops. Soil fumigants (Table 1) can kill plant-parasitic nematodes, soilborne pathogens, insects and weeds in the soil – thereby improving seedling and crop performance. Soil fumigants also kill any beneficial microorganisms in the soil, however, and should be combined with cultural practices that promote good soil health. In addition, many fumigants can be administered only in the presence of a certified applicator. Certified applicators must successfully complete one of the soil fumigant training programs listed on the EPA website (<http://www.epa.gov/fumiganttraining>). More information on fumigants registered for nematode management in various crops can be found in the nematode sections of this guide.

Unlike conventional farming systems, organic farming systems cannot rely on soil fumigants for disease management. Soil sterilants (Table 2) and microbial biopesticides (Table 3) are alternatives to fumigants. Soil sterilants are simple, safe and economical and are just as effective as fumigants when used in combination with good cultural practices. Although microbial biopesticides are less toxic than soil fumigants, they have a more limited target range, and the efficacy of microbial biopesticides is more variable than fumigants. Information on cultural practices and resistant varieties available to manage nematodes in home gardens can be found in the Nematode-Home Garden section of this guide.

**Table 1. Soil fumigants and rates for control of nematodes, soilborne pathogens and weeds.**

Product Choices <sup>1,2</sup>	Rate <sup>3</sup>	Pests Controlled
Metam CLR 42% Soil Fumigant	37.5-75 gal	Soilborne fungi and fungal-like micro-organisms <sup>4</sup> , Nematodes, Weeds
Nimitz	3.5-5 pt	Nematodes
Telone C-17 Soil Fungicide and Nematicide	10.8-45 gal	Garden centipedes, Nematodes, Soilborne fungi and fungal-like micro-organisms <sup>4</sup>
Vapam HL	37.5-75 gal	Nematodes, Weeds, Soilborne fungi and fungal-like micro-organisms <sup>4</sup>

<sup>1</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended nor endorsement of a particular product by LSU or the LSU AgCenter is implied.

<sup>2</sup> Not for use in greenhouses or other enclosed areas.

<sup>3</sup> Rates are the amount of formulation per treated acre for shank applications unless otherwise indicated. Rates vary depending on the crop and soil type. Always refer to the label for correct rates.

<sup>4</sup> Includes Clubroot of crucifers, Oak root fungus, *Phytophthora*, *Pythium*, *Rhizoctonia*, *Sclerotinia* and *Verticillium*.

**Table 2. Soil sterilants for control of soilborne plant pathogens, insects, nematodes and weeds.**

Sterilant	Method
Dry heat	180 F, 30 minutes
Steam heat	145-165 F, 30 minutes
Soil solarization	99 F, 2-4 weeks

**Table 3. Microbial biopesticides for the management of soilborne plant pathogens in organic farming.<sup>1</sup>**

Product Choices <sup>2</sup>	Biocontrol Organism	Target Diseases	Rate <sup>3</sup>	Crop <sup>5</sup>
Actinovate AG	<i>Streptomyces lydicus</i>	Damping-off and root rots ( <i>Fusarium</i> spp., <i>Phytophthora</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Verticillium</i> spp.); Root decay ( <i>Phymatotrichum omnivorum</i> )	3-12 oz <sup>4</sup>	Food crops grown from seed
Actinovate SP	<i>Streptomyces lydicus</i>	Damping-off and root rots ( <i>Fusarium</i> spp., <i>Phytophthora</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Verticillium</i> spp.); Root decay ( <i>Phymatotrichum omnivorum</i> )	4-6 oz/100 gal (ornamentals), 18-54 oz/100 gal (turf)	Ornamentals, Turfgrass
Cease	<i>Bacillus subtilis</i>	Sclerotinia diseases ( <i>S. minor</i> , <i>S. sclerotiorum</i> )	3-6 qt/100 gal	Leafy vegetables
Contans WG	<i>Coniothyrium minitans</i>	Sclerotinia diseases ( <i>S. minor</i> , <i>S. sclerotiorum</i> )	1-4 lb	Most crops
Mycostop	<i>Streptomyces griseoviridis</i> Strain K61	Damping-off and root rots ( <i>Alternaria</i> spp., <i>Fusarium</i> spp., <i>Phomopsis</i> spp., <i>Pythium</i> spp.)	1-2 g/cubic yard	Container ornamentals, Vegetable transplants
Plant Shield® HC Biological Foliar and Root	<i>Trichoderma harzianum</i>	Damping-off and root rots ( <i>Fusarium</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp.)	4 oz/100 gal <sup>4</sup>	Container ornamentals, Vegetable transplants
Regalia	Extract of <i>Reynoutria sachalinensis</i>	Damping-off and root rots ( <i>Fusarium</i> spp., <i>Phytophthora</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp., <i>Verticillium</i> spp.); Sclerotinia diseases ( <i>S. minor</i> , <i>S. sclerotiorum</i> ), Southern blight ( <i>Agroathelia rolfsii</i> ), Clubroot ( <i>Plasmodiophora brassicae</i> ), Common scab ( <i>Streptomyces scabies</i> )	1-4 qt	Cotton, Oil seed crops, Peanut, Tobacco, Vegetables
Root Shield® Granules	<i>Trichoderma harzianum</i>	Damping-off and root rots ( <i>Pythium</i> spp., <i>Rhizoctonia</i> spp.), Wilts ( <i>Fusarium</i> spp.)	3-12 lb	Bedding plants, Flowers, Herbs, Hydroponic crops, Oil seed crops, Ornamentals, Pome and stone fruit, Tree nuts, Vegetables
SoilGard12G	<i>Trichoderma virens</i>	Damping-off and root rots ( <i>Pythium</i> spp., <i>Rhizoctonia</i> spp.)	See label <sup>5</sup>	Bedding plants, Herbs, Ornamentals, Vegetables
T22 HC	<i>Trichoderma harzianum</i>	Damping-off and root rots ( <i>Fusarium</i> spp., <i>Pythium</i> spp., <i>Rhizoctonia</i> spp.)	16-32 oz	Herbs, Vegetables

<sup>1</sup> For more information on microbial biopesticides for the management of soilborne pathogens in organic farming, refer to the Ohio State University factsheet HYG-3310-08 (Raudales and McSpadden Gardener, 2008).

<sup>2</sup> Reference to commercial or trade names is made with the understanding that no discrimination is intended or endorsement of a particular product implied by LSU or the LSU AgCenter.

<sup>3</sup> Rates are the amount of formulation per acre unless otherwise indicated.

<sup>3</sup> For agronomic field and row crops, alfalfa hay and forage, small grains and corn apply 1-3 oz/acre.

<sup>4</sup> For use on plants in containers, plug trays or flats.

<sup>5</sup> Rates vary considerably depending on crop and production stage. Refer to labels for specific rates and timing.

The soil treatments section was revised October 2023 by R. Singh.





# 2025 Louisiana Plant Disease Management Guide

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Cover photos by T. Paul Price

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