



Insecticide and Fungicide Options for Herbs- 2008

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****Not all of the products mentioned in this bulletin are registered in all states, contact your Griffin branch if there is a question about a specific product ****

Information in this bulletin is believed to be correct but it is the responsibility of the grower to read and follow all label directions!!! Labels do change without notice. Pesticides other than those mentioned may be safe, legal and effective.

Mode of Action Groups (MOA's)

Resistance to pesticides of all kinds is a significant issue for growers. Resistance drives up the cost of controlling pests and threatens to deplete our available options. Most new pesticides contain resistance management statements on their labels in an attempt to make sure growers rotate pesticides properly. In order to help growers make effective and responsible pesticide choices Griffin has begun to include Mode Of Action group designations (MOA) for insecticides and fungicides that have been classified. The codes are those established by the Insecticide Resistance Action Committee (www.irc-online.org/) and the Fungicide Resistance Action Committee (www.frac.info/frac/index.htm).

Pesticides with the same MOA group number share the same mode of action and therefore should not be used in rotation with each other. Griffin's Technical Services department is available to help you integrate this information into your pesticide decision making process.

All recommendations for insecticides are foliar sprays except as noted. Most foliar sprays listed will perform better with a surfactant such as CapSil added at ½ teaspoon per gallon, (8 oz per 100 gallons), to increase coverage and reduce visible residue. Some product labels state that surfactants should not be added.

Aphids-

Botanigard ES - (EPA Reg. # 65626-8)

2 teas per gallon or 1 qt per 100 gallons as a foliar spray. Naturally occurring fungus, not a quick kill. Use a minimum of three times in a row at 3-5 day intervals. Very little visible residue but burns some open blooms. 4 hr REI. 0 day PHI. MOA UN.

Broad and Cyclamen Mites-

Ultra-Fine oil - (EPA Reg. # 862-23-499)

1.25- 2.5 TBSL per gallon or 1-2 gallons per 100 gallons as a foliar spray. Full coverage is essential for control because it smothers mites. Apply when rapid drying will occur and when air temperatures are below 85 degrees to avoid phytotoxicity. Keep agitated, as it wants to separate. Leaves a shiny residue behind and burns some open blooms. 4 hr REI. MOA UN.

Caterpillars-

Conserve SC - (EPA Reg. # 62719-291)

Apply ½ teas/gallon or 8 oz per 100 gallons as a foliar spray. Short residual control. No visible residue or bloom safety concerns. No more than three consecutive applications in a 30-day period without rotating to another class of chemistry. 4 hr REI. MOA 5.

Dipel Pro DF - (EPA Reg.# 73049-39)

2 to 4 teaspoons per gallon or 1-2 lbs per 100 gallons as a foliar spray. Works best on immature caterpillars. Slight residue, safe on open blooms. 4 hr REI. MOA 11B2.

Pyreth-It - (EPA Reg # 1021-1091-499)

Natural pyrethrum with a synergist added. ½ teaspoon per gallon or 8 oz per 100 gallons as a foliar spray. No residue but burns many open blooms. 12 hr REI. MOA 3.

Fungus Gnats and Shoreflies

Azatin XL - (EPA Reg. # 70051-27-59807)

½ teaspoon per gallon or 8 oz per 100 gallons as a soil drench. Insect growth regulator activity. No visible residue and safe on most open blooms. 4 hr REI. MOA 18B.

Gnatrol - (EPA Reg. # 73049-11)

Drench soil to control larvae by running undiluted through a 1:100 injector to wet the top inch or so of soil. Can be used on herbs and vegetables in the transplant stage. Three applications at 7-day intervals are needed for heavy infestations. Treat crops and under benches. Does not control Shorefly larvae. 4 hr REI. MOA 11A1.

Nemasys or Nemashield -

Beneficial nematode, *Steinernema feltiae* applied to the soil as a spray or drench to control the larval stage. Repeat applications at 14-21 day intervals. No re-entry interval required. Does not control Shorefly larvae. MOA UN.

Mites- (see also Broad and Cyclamen Mites)

Ultra-Fine oil - (EPA Reg. # 862-23)

1.25- 2.5 TBLS per gallon or 1-2 gallons per 100 gallons as a foliar spray. Full coverage is essential for control because it smothers mites. Apply when rapid drying will occur and when air temperatures are below 85 degrees to avoid phytotoxicity. Keep agitated, as it wants to separate. Leaves a shiny residue behind and burns some open blooms. 4 hr REI. MOA UN

Scale and Mealybugs-

Azatin XL - (EPA Reg. # 70051-27-59807)

1 teaspoon per gallon or 16 oz per 100 gallons applied as a foliar spray for insect growth regulator activity. No residue and safe on most blooms. 4 hr REI. MOA 18B.

Ultra-Fine Oil - (EPA Reg. # 862-23)

1.25- 2.5 TBLS per gallon or 1-2 gallons per 100 gallons as a foliar spray. Full coverage is essential for control because it smothers insects. Apply when rapid drying will occur and when air temperatures are below 85 degrees to avoid phytotoxicity. Keep agitated, as it wants to separate. Leaves a shiny residue behind and burns some open blooms. 4 hr REI. MOA UN.

Thrips-

Azatin XL - (EPA Reg. # 70051-27-59807)

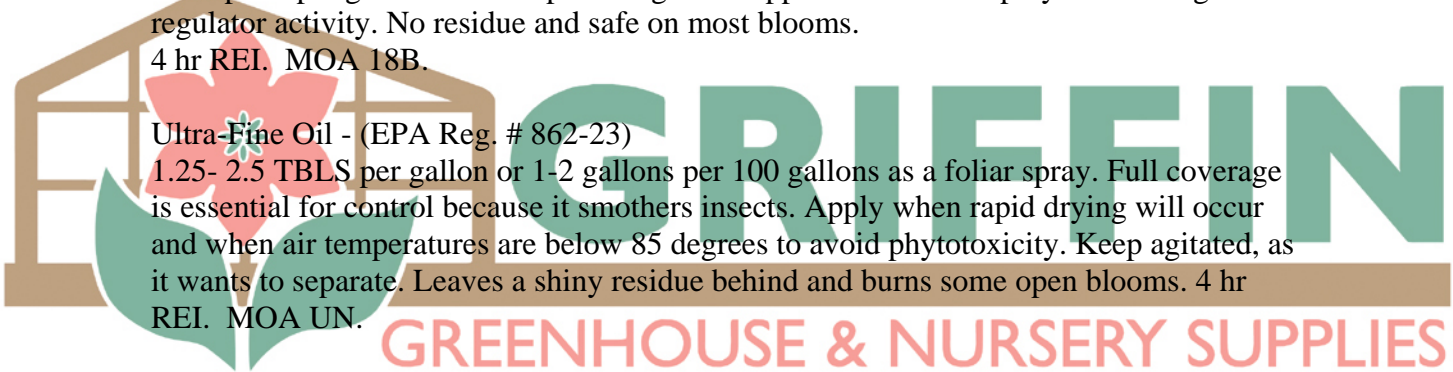
1 teaspoon per gallon or 16 oz per 100 gallons applied as a foliar spray for insect growth regulator activity. No residue and safe on most blooms. 4 hr REI. MOA 18B.

Botanigard ES - (EPA Reg. # 65626-8)

2 teas per gallon or 1 qt per 100 gallons as a foliar spray. Naturally occurring fungus, not a quick kill. Use a minimum of three times in a row at 3-5 day intervals. Safe on foliage, may burn some open blooms. May damage tomato foliage. More effective when tank mixed with Azatin or Ultra-Fine oil. 4 hr REI. 0 day PHI. MOA UN.

Conserve SC - (EPA Reg. # 62719-291)

Apply ½ teas/gallon or 8 oz per 100 gallons as a foliar spray. Short residual control. No visible residue or bloom safety concerns. No more than three consecutive applications in a 30-day period without rotating to another class of chemistry. 4 hr REI. MOA 5.



Pyreth-It - (EPA Reg # 1021-1091-499)

Natural pyrethrum with a synergist added. ½ teaspoon per gallon or 8 oz per 100 gallons as a foliar spray. No residue but burns many open blooms. 12 hr REI. MOA 3.

Ultra-Fine oil - (EPA Reg. # 862-23)

1.25- 2.5 TBLS per gallon or 1-2 gallons per 100 gallons as a foliar spray. Full coverage is essential for control because it smothers mites. Apply when rapid drying will occur and when air temperatures are below 85 degrees to avoid phytotoxicity. Keep agitated, as it wants to separate. Leaves a shiny residue behind and burns some open blooms. 4 hr REI. MOA UN.

Whiteflies-

Azatin XL - (EPA Reg. # 70051-27-59807)

2/3 to 1 teaspoon per gallon or 12-16 oz per 100 gallons applied as a foliar spray for insect growth regulator activity. No residue and safe on most blooms. 4 hr REI. MOA 18B.

Botanigard ES - (EPA Reg. # 65626-8)

2 teas per gallon or 1 qt per 100 gallons as a foliar spray. Naturally occurring fungus, not a quick kill. Use a minimum of three times in a row at 3-5 day intervals. Very little visible residue but burns some open blooms. Some minor damage has been noted on tomato foliage 4 hr REI. 0 day PHI. MOA UN.

Pyreth-It - (EPA Reg # 1021-1091-499)

Natural pyrethrum with a synergist added. ½ teaspoon per gallon or 8 oz per 100 gallons as a foliar spray. No residue but burns many open blooms. 12 hr REI. MOA 3.

Ultra-Fine Oil - (EPA Reg. # 862-23)

1.25- 2.5 TBLS per gallon or 1-2 gallons per 100 gallons as a foliar spray. Full coverage is essential for control because it smothers insects. Apply when rapid drying will occur and when air temperatures are below 85 degrees to avoid phytotoxicity. Keep agitated, as it wants to separate. Leaves a shiny residue behind and burns some open blooms. 4 hr REI. MOA UN.

Fungicides

Botrytis-

All recommendations are for foliar sprays except as noted. Most foliar sprays listed will perform better with a surfactant such as CapSil added at ½ teaspoon per gallon, (8 oz per 100 gallons), to increase coverage and reduce visible residue. Some product labels state that surfactants should not be added.

Actinovate SP- (EPA Reg # 73314-1)

1 tsp per gallon or 12 oz per 100 gallons as a foliar spray. Leaves some visible residue, safe on open blooms. Edible crops on the label. 1 hr REI. OMRI listed. MOA 25.

Decree DF- (EPA Reg. #66330-35-67690)

1 rounded teaspoon per gallon, (16 oz per 100 gallons), safe on open blooms, minimal visible residue. Rain fast (won't wash off) two hours after application. Very effective long residual control. 12 hr REI. MOA 17. Several herbs are now on the label.

Milstop - (EPA Reg. # 70870-1-68539)

1.5 tsp to 3.5 teaspoons per gallon, or 1.25-2.5 lbs per 100 gallons as a foliar spray. Formulated with a surfactant so do not add another. Exempt from food tolerances. Leaves some visible residue. 1 hour REI. 0 day PHI. OMRI listed. MOA NC.

Oxidate - (EPA Reg. # 70299-2)

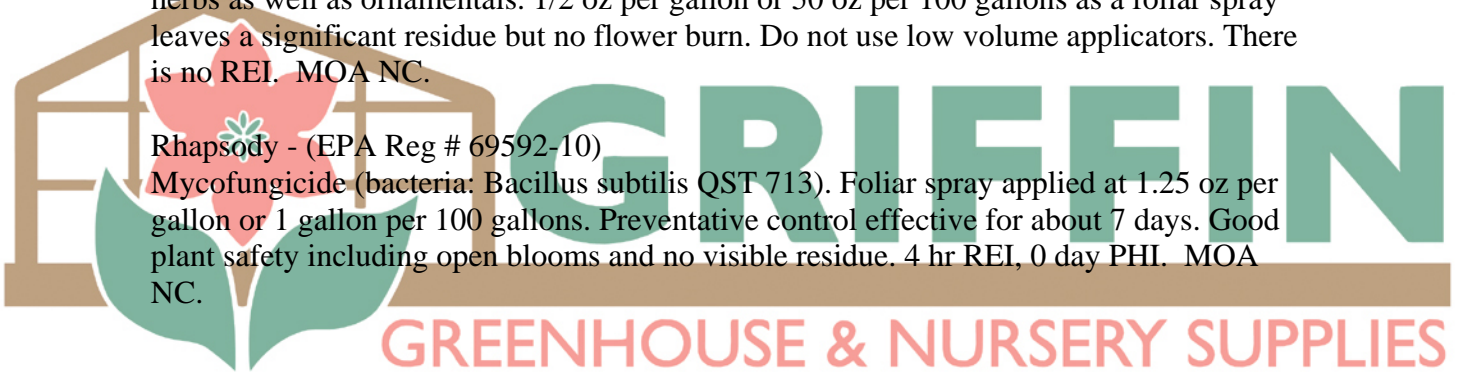
.5 oz per gallon or 50 oz per 100 gallons as a preventative and 1.5 ounces per gallon or 150 oz per 100 gallons as a curative. No visible residue and safe on most open blooms. Contact control, no residual. Identical to Zero-Tol except that it is labeled for edible crops. There is no REI. MOA NC.

Plantshield HC - (EPA Reg. # 68539-4)

Naturally occurring fungus that works as a protectant. Labeled for use on vegetable and herbs as well as ornamentals. 1/2 oz per gallon or 50 oz per 100 gallons as a foliar spray leaves a significant residue but no flower burn. Do not use low volume applicators. There is no REI. MOA NC.

Rhapsody - (EPA Reg # 69592-10)

Mycofungicide (bacteria: *Bacillus subtilis* QST 713). Foliar spray applied at 1.25 oz per gallon or 1 gallon per 100 gallons. Preventative control effective for about 7 days. Good plant safety including open blooms and no visible residue. 4 hr REI, 0 day PHI. MOA NC.



Fusarium-

All of the following recommendations are for soil drenches. Re-apply at 21-28 day intervals, with the exception of Actinovate SP and Plantshield HC. Chemicals have limited success controlling Fusarium, but the following products will help protect healthy plants.

Actinovate SP- (EPA Reg # 73314-1)

1 tsp per 2 gallon or 4-6 oz per 100 gallons. Protectant only, apply as early in the crop cycle as possible. Typically only one application per growing season is needed. 1 hr REI, 0 if no contact with drenched surfaces. OMRI listed. MOA 25.

Oxidate - (EPA Reg. # 70299-2)

Soil drench at 1.25 oz per gallon or 1 gallon per 100 gallons. Contact control, no residual. Identical to Zero-Tol except that it is labeled for edible crops. There is no REI. MOA NC.

Plantshield HC - (EPA Reg. # 68539-4)

4 ounces per 100 gallons applied as early in the crop cycle as possible. Naturally occurring fungus that grows along with the roots to protect them. Will not clean up an existing problem. Typically only one application per growing season is needed. Long term crops should be retreated with a half-rate application midway through the crop. No re-entry time. MOA NC.

Pythium and Phytophthora –

All of the following recommendations are for soil drenches. Re-apply at 21-28 day intervals, with the exception of Actinovate SP and Plantshield HC.

Actinovate SP- (EPA Reg # 73314-1)

1 tsp per 2 gallon or 4-6 oz per 100 gallons. Protectant only, apply as early in the crop cycle as possible. Typically only one application per growing season is needed. 1 hr REI, 0 if no contact with drenched surfaces. OMRI listed. MOA 25.

Oxidate - (EPA Reg. # 70299-2)

Soil drench at 1.25 oz per gallon or 1 gallon per 100 gallons. Contact control, no residual. Identical to Zero-Tol except that it is labeled for edible crops. There is no REI. MOA NC.

Plantshield HC - (EPA Reg. # 68539-4)

4 ounces per 100 gallons applied as early in the crop cycle as possible. Naturally occurring fungus that grows along with the roots to protect them. Will not clean up an existing problem. Typically only one application per growing season is needed. Long term crops should be retreated with a half-rate application midway through the crop. No re-entry time. MOA NC.

Powdery Mildew-

All recommendations are for foliar sprays except as noted. Most foliar sprays listed will perform better with a surfactant such as CapSil added at ½ teaspoon per gallon, (8 oz per 100 gallons), to increase coverage and reduce visible residue. Some product labels state that surfactants should not be added

Actinovate SP- (EPA Reg # 73314-1)

1 tsp per gallon or 12 oz per 100 gallons as a foliar spray. Has shown protectant and eradicant properties. Leaves some visible residue, safe on open blooms. 1 hr REI. OMRI listed. MOA 25.

Milstop - (EPA Reg. # 70870-1-68539)

1.5 tsp to 3.5 teaspoons per gallon, or 1.25-2.5 lbs per 100 gallons as a foliar spray. Formulated with a surfactant so do not add another. Exempt from food tolerances. Leaves some residue but has good plant safety. 1 hour REI. 0 day PHI. OMRI listed. MOA NC.

Oxidate - (EPA Reg. # 70299-2)

.5 oz per gallon or 50 oz per 100 gallons as a preventative and 1.5 ounces per gallon or 150 oz per 100 gallons as a curative. No visible residue and safe on most open blooms. Contact control, no residual. Identical to Zero-Tol except that it is labeled for edible crops. There is no REI. MOA NC.

Rhapsody - (EPA Reg # 69592-10)

Mycofungicide (bacteria: Bacillus subtilis QST 713). Foliar spray applied at 1.25 oz per gallon or 1 gallon per 100 gallons. Preventative control effective for about 7 days. Good plant safety including open blooms and no visible residue. Tank mixable with most common pesticides. 4 hr REI, 0 day PHI. MOA NC.

Ultra-Fine Oil - (EPA Reg. # 862-23)

1.25- 2.5 TBLS per gallon or 1-2 gallons per 100 gallons as a foliar spray. Apply when rapid drying will occur and when air temperatures are below 85 degrees to avoid phytotoxicity. Keep agitated, as it wants to separate. Leaves a shiny residue behind and burns open blooms. 4 hr REI. MOA NC.

Rhizoctonia and Thielaviopsis-

All of the following recommendations are for soil drenches.

Actinovate SP- (EPA Reg # 73314-1)

1 tsp per 2 gallon or 4-6 oz per 100 gallons. Protectant only, apply as early in the crop cycle as possible. Typically only one application per growing season is needed. 1 hr REI, 0 if no contact with drenched surfaces. OMRI listed. MOA 25.

Oxidate - (EPA Reg. # 70299-2)

Soil drench at 1.25 oz per gallon or 1 gallon per 100 gallons. Contact control, no residual. Identical to Zero-Tol except that it is labeled for edible crops. There is no REI. MOA NC.

Plantshield HC - (EPA Reg. # 68539-4)

4 ounces per 100 gallons applied as early in the crop cycle as possible. Naturally occurring fungus that grows along with the roots to protect them. Will not clean up an existing problem. Typically only one application per growing season is needed. No re-entry time. MOA NC.

