OHP POINSETTIA SOLUTIONS®

GREENHOUSE & NURSERY PRODUCTION

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An American Vanguard Company

Insects

The main insect and mite pests of poinsettia are fungus gnats, whiteflies (including the greenhouse whitefly B, Q biotypes of *Bemisia tabaci* whiteflies, and silverleaf whitefly), two-spotted spider mites and Lewis spider mites. Other insects that occasionally cause problems include shore flies, mealybugs, thrips and leafroller caterpillars.


Whiteflies


Fungus gnats


Lewis spider mite


Mealybug


Thrips

Insect and Mite Management on Poinsettias

The following application program is designed to control all of the major and occasional insect and mite pests of poinsettias. Information on pesticide mode of action can be found in the OHP Chemical Class Chart, available through an OHP Regional Technical Manager or on the OHP website, ohp.com.

OHP Products Labeled for Insect and Mite Control

OHP Product(s)	Chemical Class	MOA Group	Target Pest(s)	Residual Control	REI
Azatin®O	Biological IGR	UN	Fungus gnats, whiteflies, thrips, caterpillars	5 to 7 days	4
Decathlon®	Pyrethroid	3	Fungus gnats, whiteflies, thrips, caterpillars	3 to 7 days	12
Discus® L	Pyrethroid + Neonicotinoid	3 + 4A	Fungus gnats, whiteflies, thrips, caterpillars	30 days	12
Floramite®	Carbazate	20D	Lewis mites	21 to 28 days	12
Marathon®	Neonicotinoid	4A	Whiteflies, mealybugs, fungus gnats, thrips	6 to 8 weeks	12
Pycana®	Pyrethrins + Oil	3 + UNE	Aphids, beetles, earwigs, leafhoppers, mealybugs, plant bugs, psyllids, sawfly larvae, spider mites, tent caterpillars, thrips, whiteflies	7 to 14 days	12
Pradia®	Anthrallic Diamide + Pyridine Carboxamides	28 + 29	Aphids, armyworms, flea beetles, Japanese beetles, lace bugs, whiteflies, thrips, mealybugs	3 to 4 weeks	12
Sarisa®	Anthrallic Diamide	28	Armyworms, flea beetles, plant bugs, loopers, thrips, whiteflies	3 to 4 weeks	4

Suggested Insect and Mite Control Program for Poinsettias

Application*	Treatment	Rate/100 gallons	Target Pests	Remarks
1	**Azatin® O** + **Decathlon®**	12 fluid ounces + 1.9 ounces	Fungus gnats, whiteflies, thrips, caterpillars	Two sprench applications, 7 days apart
2	**Floramite®**	4 to 8 fluid ounces	Spider mites, Lewis mites	Foliar spray as needed
3	**Pradia®**	10 to 17 fluid ounces	Aphids, armyworms, whiteflies, thrips and others	Foliar Spray or Sprench
4	**Marathon®**	See label for appropriate rate	Whiteflies, mealybugs, fungus gnats, thrips	Granular or Drench** Apply when root system is developed
5	**Azatin® O** + **Decathlon®**	12 fluid ounces + 1.9 ounces	Fungus gnats, whiteflies, thrips, caterpillars	Two sprench applications, 7 days apart

* It probably will not be necessary to make all of the above applications, but the products are listed in the suggested order in which they should be made.

** Note: Discus L can be used in place of Marathon. As with Marathon, the drench rate depends on container size. Foliar spray application rate is 25 fluid ounces per 100 gallons.

Diseases

Plant Disease Management on Poinsettias

The most serious disease problems of poinsettias are pythium root rot, rhizoctonia root and stem rot, botrytis, powdery mildew, fungal leaf spots, and bacterial issues.

The products listed in the table below will help to manage all of the major and occasional plant disease pathogens affecting poinsettias. Information on pesticide mode of action can be found in the OHP Chemical Class Chart, available through an OHP technical sales manager or on the OHP website, ohp.com.

OHP products labeled for Disease Control on Poinsettias

Product (s)	Chemical Class	MOA Group	Target Disease(s)	Application Rate/100 gallons	Residual	REI
Areca®	Ethyl phosphonates	P 07	*Pythium* root rot, xanthomonas	1.25 to 5 lbs as foliar spray, 6.4 to 12.8 oz as drench	30 days	12
Astun®	Thiopene amides	7	*Botrytis*	10 to 17 fl oz	7 to 14 days	12
OHP Chipco® 26019	Dicarboxamides	2	*Botrytis*, *Rhizoctonia* root and stem rot, fungal leaf spots	1 to 2 lb as foliar spray, 6.5 oz as drench	14 days	12

Product (s)	Chemical Class	MOA Group	Target Disease(s)	Application Rate/100 gallons	Residual	REI
Grotto™	Inorganic	M01	*Rhizoctonia*, bacterial blight, *Botrytis*, powdery mildew, fungal leaf spot	0.5 to 2 gal	14 days	4
OHP 6672® 4.5 F or **OHP 6672® 50 WP**	Benzimidazoles	1	*Rhizoctonia* root and stem rot	OHP 6672 4.5 F: 10 to 20 fl oz as foliar spray, 20 fl oz as drench; OHP 6672 50 WP: 8 to 24 oz as foliar spray, 12 to 16 oz as drench	7 days	12
Segway® O	Cyano-imidazole	21	*Pythium* crown and root rots and damping off; phytophthora crown and root rots and foliar blights, downy mildew	1.5 to 6 fl oz	28 days	12
Terraclor®	Aromatic hydrocarbons	14	*Rhizoctonia* root and stem rot	6 to 12 fl oz as a drench	28 days	12
Terraguard® SC	Imidazoles	3	*Botrytis*, powdery mildew, fungal leaf spots and *Rhizoctonia* root rot	4 to 16 fl oz as foliar spray, 4 to 8 fl oz as drench	30 days	12
Terrazole®	Thiadiazole	14	*Pythium* root rot	3.5 to 10 oz as drench; California rates 4 to 6 fl oz	28 days	12
Triathlon® BA	*Bacillus* sp. and the fungicidal lipopeptides produced	BM 02	*Botrytis*, powdery mildew, rusts, leaf spots, scab, rhizoctonia and bacterial spot	0.5 to 6 quarts foliar	7 to 14 days	4

It is not practical to suggest that a certain fungicide be applied during a specific week of production so the following listing will provide a rotation/alternation program for the major poinsettia disease problems.

***Pythium* root rot:** Areca®, Segway® O, Terrazole®, Triathlon® BA

***Rhizoctonia* root and stem rot:** OHP Chipco® 26019, OHP 6672™, Terraclor®, Terraguard®, Triathlon® BA

***Botrytis*:** Astun®, Grotto™, OHP Chipco® 26019, Terraguard®, Triathlon® BA

Powdery mildew: Grotto™, OHP Chipco® 26019, Terraguard®, Triathlon® BA

Fungal leaf spots: Grotto™, OHP Chipco® 26019, Terraguard®, Triathlon® BA

Bacterial leaf spots: Areca®, Grotto™, Triathlon® BA

Regulating Plant Height of Poinsettias (PGRs)

Along with managing light and spacing a grower often will use a good plant growth regulator (PGR) to manage plant height. When using a PGR, growers should error on the side of caution. Using a product that is generally forgiving and cost effective is the key.

OHP markets three PGRs that can be used on poinsettias: Cycocel, B-Nine WSG and Pac O. PGRs regulate plant growth by reducing stem elongation. The result is a compact appearance, darker green leaves and better shipping quality.

B-Nine or Cycocel are best used as a foliar spray and provide excellent growth control with reduced risk of excessive stunting. They can be used separately or more commonly, as a tank mix. Applications are made post pinch when new growth is from 1½ to 3 inches long (see photo below). Repeat spray applications are used as needed to control growth.

Pac O applied as an early spray to new lateral breaks also works to effectively control growth. Overspray of Pac O to soil surface will increase Pac O uptake and could result in shorter plants. Poinsettias are extremely sensitive to an early drench application of Pac O; therefore a single early drench is not recommended. However, recent research has shown low-dose applications of Pac O are effective in controlling plant height.

Lateral breaks ready for PGR application

Cycocel®

For natural-season crops in the North, Cycocel should typically not be used after Oct. 15. Cycocel may be used at reduced rates until Oct. 21 if conditions are warm and sunny. In the South, Cycocel should not be used after Nov. 1. Late application times or excessive rates can cause reduced bract size and/or delayed flowering. If the crop is being produced for other than natural season, the last application should be no later than 6 weeks prior to flower maturity.

Spray applications can be made at rates between 800 and 1,500 ppm. Multiple applications may be made as needed at intervals between 3 and 14 days. Frequent reapplications may be needed if lowest application rates are used. At rates of 1,000 to 1,500 ppm, less frequent reapplication is needed.

B-Nine®

Applications should begin when new growth is 1½ - 2 inches long. The recommended rate range is 2000-3000 ppm. The lower rate should be used in areas north of the sunbelt and the higher rate used in the sunbelt. Two applications will give better growth control than a single application.

Late season applications will reduce plant height but may also reduce bract size and delay flowering. For crops scheduled for early December flowering, applications should not be made after the start of short days. As a general guide, do not apply B-Nine after October 1 in areas outside Florida, or after October 25 in Florida.

Tank Mixes of Cycocel® and B-Nine®

Combinations of Cycocel and B-Nine have shown true synergism, meaning the combination is stronger than either by themselves. This combination provides stronger height control and can minimize concerns with phytotoxicity. The application rate for Cycocel and B-Nine can be altered to adjust the degree of height re-

duction resulting from a spray treatment. In general, the highest Cycocel rate that does not cause excessive leaf yellowing can be used, and then the B-Nine rate can be raised or lowered to adjust the activity of the tank mix application.

The following table gives a range of application rates for Cycocel and B-Nine to use.

Activity	Cycocel (ppm)	B-Nine (ppm)
Very High	1,500	5,000
High	1250	2,500
Medium	1,250	1,250
Low	1,000	800

Pac O™

Recommended spray application rates are 10 to 30 ppm in most areas of the U.S. In southern Florida, higher rates of 15 to 45 ppm are recommended. Single applications can be made using the higher rates, but sequential applications using lower rates will provide a better safety margin against too much growth retardation.

Applications to slower growing varieties in cooler areas should begin when new shoot growth is 2 to 3 inches long. For fast growing varieties in warmer areas, begin applications when new shoot growth is 1½ to 3 inches long.

Pac O applications should not be applied after initiation of short days. As a guide, do not apply Pac O sprays after October 1 in areas outside of Florida, or after October 25 in Florida. Drench applications for late season growth control to plants that have initiated bract formation or are about 1 inch from their final height. Recommended rates are ½ to 1 ppm for northern growers and 1 to 3 ppm for southern growers. These late season applications can be made with little effect on bract size.

PGR Program for Poinsettia from Pinch to Finish

Suggested rates below will vary dependent on grower location, growing conditions and poinsettia varieties.

Early September- Post pinch, new growth 1½" long	B-Nine spray, or Cycocel spray, or B-Nine+Cycocel spray, or Pac O spray Pac O low-dose drench	1250 - 2500 PPM 1000 - 1500 PPM 1250 +1250 PPM* 15 - 30 PPM 1/10 PPM apply as needed**
Mid-September- About 2-3 weeks after first application.	B-Nine spray, or Cycocel spray, or B-Nine+Cycocel spray	1250 - 2500 PPM 1000 - 1500 PPM 1250 +1250 PPM*
Late September (short days)- B-Nine Spray applications past short days will disrupt bract development. Follow label guidelines.	B-Nine spray, or Cycocel spray, or B-Nine+Cycocel spray	1250 - 2500 PPM 1000 - 1500 PPM 1250 +1250 PPM*

Early October to Mid - October (15th)	Cycocel sprays	500 - 700 PPM
Mid - late November Apply 1 inch before finish height	Pac O late drench	½ - 1 PPM Southern states may need higher rates.

* Adjust B-Nine rate up or down while using Cycocel at a constant rate will provide maximum height control from the combination spray program. i.e. 2500 ppm B-Nine+1000 ppm Cycocel.

** Early "Low-Dose" Pac O drench is effective, best used through chemigation systems. Contact your OHP representative for more information on how to design such a program. Rates higher than 1/10 ppm will dramatically affect crop finish, care must be taken to follow directions.

OHP QUICK REFERENCE PRODUCT RATE GUIDE

Fungicides

Products	Rate per 100 gallons	Rate per 1 gallon
Areca®	1.25, 2.5, 5 pounds	1 1/4 tsp, 2 1/2 tsp, 5 tsp
Astun®	10 to 17 fluid ounces	1 tsp (3 mL to 5 mL)
Grotto™	0.5 to 2 gallons	3 3/4 tsp to 15 tsp (5 TBS)
Kalmor®	0.5 to 2 pounds per acre	1/2 TBS to 1 1/2 TBS
OHP Chipco® 26019	1 to 2 pounds	1 1/3 tsp to 2 2/3 tsp
OHP 6672® 4.5 F	20 fluid ounces	1 1/5 tsp
OHP 6672® 50 WP	8 to 24 ounces	N/A
Segway® O	1.5 to 6 fluid ounces	1/8 to 1/3 tsp (0.44 mL to 1.77 mL)
SoilGard® 12G	0.5 to 2 pounds	1/2 tsp to 2 tsp
Terraclor® 400 SC (Drench Rates)	6 to 12 fluid ounces	3/8 tsp to 3/4 tsp
Terraguard® SC	2 to 8 to 16 fluid ounces	1/8 tsp, 1/2 tsp, 1 tsp
Terrazole® 35% WP	3.5 to 10 ounces	1/2 tsp to 1 1/2 tsp
Terrazole® L or **Terrazole® L CA**	4 to 6 fluid ounces	3/4 tsp to 1 tsp
Triact® 70	0.5 gallon, 1 gallon, 2 gallons	3 3/4 tsp to 7 1/2 tsp to 15 tsp (5 TBS)
Triathlon® BA	0.5 to 6 quarts	1 tsp to 11 1/5 tsp (4.8 mL to 57 mL)

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OHP QUICK REFERENCE PRODUCT RATE GUIDE

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Insecticides / IGRs/ Miticides

Products	Rate per 100 gallons	Rate per 1 gallon
Adept®	1 to 2 ounces (spray)	See label for more information
Azatin® O	5 to 16 fluid ounces	1/3 tsp to 1 tsp
Decathlon® 20 WP	1.3 to 1.9 ounces	1/5 tsp to 1/4 tsp
Discus® L	25 fluid ounces	1 1/2 tsp
Floramite® SC	4 to 8 fluid ounces	1/4 tsp to 1/2 tsp
Kopa™ Insecticidal Soap	1 to 2 gallons	1.3 to 2.6 fluid ounces (39 to 76 mL)
Marathon® 1% G	see label	1/8 to 1 1/2 tsp per pot depending on size
Marathon® II	1.7 fluid ounces	1/10 tsp
Pradia®	10 to 17.5 fluid ounces	3 mL to 6 mL
Pedestal®	6 to 8 fluid ounces	3/8 tsp to 1/2 tsp
Pycana®	1 to 2 gallons	1.3 to 2.6 mL (39 mL to 76 mL)
Sarisa®	10.9 to 27 fluid ounces	3.2 mL to 8 mL
Triact® 70	0.5 gallon, 1 gallon, 2 gallons	3 3/4 tsp to 7 1/2 tsp to 15 tsp (5 TBS)

Plant Growth Regulators*

Products	Parts per Million (PPM)	Rate per 1 gallon
B-Nine® WSG - Spray	1000 to 2500 to 7500 PPM	4/5 TBS to 2 TBS to 6 TBS
Cycocel® - Spray	200 PPM to 1250 PPM to 4000 PPM	0.22 to 1.36 to 4.34 fluid ounces
Hormodin®	— See label for more information. —	
Pac O™ - Spray or Drench	1 to 30 Drench, 5 to 100 Spray	1 PPM = 1 mL/gl; 5 PPM = 4.7 mL/gl; 30 PPM = 1 fl oz/gl

* Users should read entire label for full information and application instructions.

Herbicides

General weed control	Rate per 100 gallons
FireWorxx™	Weed control in GH and under benches. use 4 to 8 fl oz per gallon

TBS = Tablespoon tsp = teaspoon 1 mL = 1 cc 1 fl oz = 29.6 mL g = grams 1 tsp = 5 mL 1 TBS = 15 mL

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