

Pesticides for the Treatment of Orchid Pests

by Sue Bottom, sbottom15@hotmail.com

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Chemical Name Active Ingredient	Application Rate (tsp/gal)	Spray or Drench?	Mobility	IRAC MoA Group	Scale	Mealybugs	Thrips	Whiteflies	Aphids	Mites	Cater- pillars	Fungus Ghats
Commonly Available Pesticides												
Bayer Products Imidacloprid varies	6 @ 1.47% 12 @ 0.74%	Spray Drench	Xylem Mobile	4A	X	X	suppression	X	X	if fluvalinate present		
Cygon 2E	1 - 2	Spray	Xylem Mobile	1B	X	X	X		X	X		
Malathion 50% EC	1 - 4	Spray	Contact	1	X	X	X	X	X			
Orthene Powder	1	Spray Drench	Locally Systemic	1	X	X	X	X	X			
OrtheneX	6	Spray	Locally Systemic	1	X	X	X	X	X	suppression		
Permetrol	1.3	Spray	Contact	3	X	X	X	X	X	X		
Pernethrin 10%	2.5	Spray	Contact	16	X	X	X	X		X		
Paraffinic Oil	2 - 4	Spray Drench	Contact	11							X	X
Bacillus Thuringensis 1												
Specialty Pesticides												
Akari 5 SC	0.96 - 1.4	Spray	Contact	21A		suppression		suppression		all mites but Tenuipalidae		
Fenpyroximate 5%	0.24-mites 0.48-thrips	Spray	Locally Systemic	6			suppression	suppression	suppression	all 4 groups of mites		
Avid 0.15 EC	0.6-thrips 1.2-mites	Spray	Locally Systemic	5			X				X	
Abamectin 2.0%	0.18-0.27	Spray	Contact	3	crawler stage	X	X	X	X		X	X
Conserve	0.5 - 1	Spray Drench	Xylem Mobile	4A	X	X	X	X	X		X	X
Spinosad 11.6%	0.24 - 0.48	Spray	Contact	25						spider mites		
Decathlon 20 WP												
Cyfluthin 20%												
Flagship 25 WG												
Thiamethoxam 25%												
Floramite SC												
Bifenazate 22.6%												
Kontos	.1 - 0.2	Spray Drench	Amphi- mobile	23	crawler stage	X	suppression	X	X	all mites but Tenuipalidae		
sprotramat 22.4%	0.10	Spray Drench	Xylem Mobile	4A	X	X	suppression	X	X			
Marathon II												
Imidacloprid 21.4%												

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Specialty Pesticides (continued)												
Marathon 60 WP	0.16	Spray Drench	Xylem Mobile	4A	X	X	suppression	X	X			
Imidacloprid 60%												
Mavrik Aqua Flow	0.24 - 0.6	Spray	Contact	3		X	X	X	X	suppression	X	
Fluvalinate 22.3%												
Merit 75 WP	0.10	Spray Drench	Xylem Mobile	4A	X	X		X	X			
Imidacloprid 75%												
Overture 35 WP	2.1	Spray	Locally Systemic	Unknown			X				X	
Pyridalyl 35%												
Safari 20 SG	0.5 - 1	Spray	Xylem Mobile	4A	X	X	suppression	X	suppression			
Dinotefuran 20%	1.5 - 3.0	Drench										
Sanmite 75 WP	1 - 1.5	Spray	Contact	21A				X		all mites but Eriophyid		
Pyridaben 75%										all mites but Tarsonemid		
Shuttle	0.38 - 0.77	Spray	Contact	20B								
Acetamiprid 15.8%												
Sirocco	0.18 - 0.36	Spray	Locally Systemic	6, unclassified			suppression	suppression	suppression	all mites but Tenuipalpidae		
Bifenazate 43.2%, Aba												
Sultan	0.82	Spray	Contact	25						spider mites		
Cyflumetofen 18.7%												
Talstar P	0.65 - 1.3	Spray	Contact	3	crawler stage	X	X	X	X	spider mites, broad mites		X
Bifenthrin 7.9%												
Tristar 8.5 SL	0.5-0.8 scale	Spray	Locally Systemic	4A	X	X	X	X	X			X
Acetamiprid 8.5%	0.75-1.5 thrip											
Insect Growth Regulators												
AzaGuard, Azatin	0.5 - 2	Spray	Contact	unclassified	X	X	X	X	X		X	use as drench
Azadirachtin 3%												
Distance	0.48 - 0.72	Spray	Locally Systemic	7C	X	suppression		X	suppression			use as drench
Pyriproxygen 11.23%												
Enstar AQ	1 - 2	Spray	Contact	7C	X	X	X	X	X			use as drench
Kinoprene 18.4%												
TetraSan 5 WDG	0.84 - 1.7	Spray	Locally Systemic	8						spider mites, Tenuipalpidae		
Etoxazole 5%												

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Chemical Name Active Ingredient	Application Rate (tsp/gal)	Spray or Drench?	Mobility	IRAC MoA Group	Comments and Caveats - Always Check Product Label for Information on Proper Use and Precautions
Commonly Available Pesticides					
Bayer Products Imidacloprid varies	6 @ 1.47% 12 @ 0.74%	Spray Drench	Xylem Mobile	4A	Many products of differing imidacloprid strengths; some contain fluvinate. Do not use with summer oil. Use with weak fertilizer to enhance uptake.
Cygon 2E	1 - 2	Spray	Xylem Mobile	1B	Not labeled for use on orchids, some growers have reported severe phytotoxicity after use. Use in cool weather only. Not for use on toliumias.
Dimethoate 23%					
Malathion 50% EC	1 - 4	Spray	Contact	1	Harms some ferns.
Malathion 50% EC					
Orthene Powder	1	Spray Drench	Locally Systemic	1	Repeat at 2 week intervals if crawlers continuously appearing. Apply no more than 3 times consecutively. Can be mixed with fungicide.
Accephate 97%					
OrtheneX Accephate, Fenbutatin oxide	6	Spray	Locally Systemic	1	Fenbutatin oxide is a miticide, Accephate is an insecticide. Same additional comments as for Orthene above.
Permetrol					
Permethrin 10%	1.3	Spray	Contact	3	
Ultra Pure Oil	2.5	Spray	Contact	16	Use only if temperatures below 90°F. Don't apply within 30 days of using sulfur or mix with fungicide, copper or Captan. Don't apply to ferns or palms.
Paraffinic Oil					
Thuricide	2 - 4	Spray Drench	Contact	11	
Bacillus Thuringensis 1					
Specialty Pesticides					
Akari 5 SC	0.96 - 1.4	Spray	Contact	21A	Primarily active on larval stages, no translaminar activity.
Fenprothimate 5%					
Avid 0.15 EC	0.24-mites 0.48-thrips	Spray	Locally Systemic	6	Harms some ferns and shasta daisies. Use weekly for 3 weeks when thrips immature then alternate. Residual control may be enhanced by adding summer oil.
Abamectin 2.0%					
Conserve	0.6-thrips 1.2-mites	Spray	Locally Systemic	5	Can be used 3 times consecutively on one generation of thrips then alternate. Can spray flowers for thrips without damage.
Spinosad 11.6%					
Decathlon 20 WP	0.18-0.27	Spray	Contact	3	
Cyfluthrin 20%					
Flagship 25 WG	0.5 - 1	Spray Drench	Xylem Mobile	4A	Effective for armored scale, not soft scale.
Thiamethoxam 25%					
Floramite SC	0.24 - 0.48	Spray	Contact	25	Alternate use with other miticides, does not control broad mites or flat mites. Spray should have a pH below 7.
Bifenazate 22.6%					
Kontos	.1 - 0.2	Spray Drench	Amphi- mobile	23	Label says it is not recommended for use on orchids, among other crops.
spirotetramat 22.4%					
Marathon II	0.10	Spray Drench	Xylem Mobile	4A	Apply to cattleyas only, no dendrobiums and no thin leafed orchids. Do not use with summer oil. Use with weak fertilizer to enhance uptake.
Imidacloprid 21.4%					

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Specialty Pesticides (continued)					
Marathon 60 WP	0.16	Spray Drench	Xylem Mobile	4A	Apply to cattleyas only, no dendrobiums and no thin leafed orchids. Do not use with summer oil. Use with weak fertilizer to enhance uptake.
Imidacloprid 60%					
Mavrik Aqua Flow	0.24 - 0.6	Spray	Contact	3	At low to medium use rates, controls aphids, thrips, whiteflies, leaf-feeding caterpillars; at higher rates, mites will also be suppressed or controlled.
Fluvalinate 22.3%					
Merit 75 WP	0.10	Spray	Xylem Mobile	4A	See Marathon comments; Merit is 3 times stronger and the same application rate is listed, my results suggest it is phytotoxic at this application rate.
Imidacloprid 75%		Drench	Mobile		
Overture 35 WP	2.1	Spray	Locally Systemic	Unknown	Translaminar, controls insects by both contact and ingestion activity, although contact activity is dominant and faster than ingested activity
Pyridaly 35%					
Safari 20 SG	0.5 - 1	Spray	Xylem Mobile	4A	Use spreader sticker to increase effectiveness.
Dinotefuran 20%	1.5 - 3.0	Drench	Mobile		
Sanmite 75 WP	1 - 1.5	Spray	Contact	21A	Alternate use with other miticides.
Pyridaben 75%					
Shuttle	0.38 - 0.77	Spray	Contact	20B	Do not tank mix with Allette or surfactant
Acetaminocyl 15.8%					
Sirocco	0.18 - 0.36	Spray	Locally Systemic	6, unclassified	Not compatible with many products in tank mixes, check label.
Bifenazate 43.2%, Aba					
Sultan	0.82	Spray	Contact	25	
Cyflumetofen 18.7%					
Talstar P	0.65 - 1.3	Spray	Contact	3	Mite control most effective in spring to early summer. Treat late in day. Thorough coverage necessary.
Bifenthrin 7.9%					
Tristar 8.5 SL	0.5-0.8 scale	Spray	Locally Systemic	4A	Use higher rate when insect populations high. Do not apply more than 5 times per year. Systemic with translaminar, not labeled for drench applications.
Acetaminiprid 8.5%	0.75-1.5 thrip				
Insect Growth Regulators					
AzaGuard, Azatin	0.5 - 2	Spray	Contact	unclassified	Controls insects in the larval, pupal, and nymphal stages, tank mix with chemicals for adult control. Keep solution pH between 5.5 and 6.5.
Azadirachtin 3%					
Distance	0.48 - 0.72	Spray	Locally Systemic	7C	Harms some ferns.
Pyriproxygen 11.23%					
Enstar AQ	1 - 2	Spray	Contact	7C	
Kinoprene 18.4%					
TetraSan 5 WDG	0.84 - 1.7	Spray	Locally Systemic	8	Kills mite eggs and nymphs but not adult, apply with adulticide if infested, treated adult mites will not produce viable eggs. Translaminar.
Etoxazole 5%					