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Insecticides, Miticides & Molluscicides Available to Florida's Floricultural Industry¹

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The floricultural industry (potted flowers, cut flowers, and bedding plants) in Florida was valued at over \$212.4 million in 2001 not including propagative floricultural products such as chrysanthemum cuttings and gladiolus corms. These products are valued for their aesthetic qualities and do not tolerate detectable insect and mite damage. As a result, growers practice intensive pest management to assure high quality and maximum value. Their management programs utilize biological, physical, regulatory, and cultural control components, but when damaging arthropods are present on floricultural crops, growers most often rely on chemical remediation.

Florida floricultural producers have more than 157 commercial products available to manage arthropod and gastropod pests (slugs and snails) derived from 76 chemical and biological pesticide active ingredients. The Ornamentals and Turf section of the Florida Insect Pest Management Guide offers assistance to growers in selecting products to include in pest management programs for various floricultural commodities. This publication adds information not available in the crop-specific guides.

The presently available commercial products registered for arthropod and gastropod management in Florida's commercial production sites are presented in Table 1. The list includes active ingredients, product registrants, restricted re-entry periods (REI), precautionary statements, and an indication of restricted use status of each product to enhance the wise selection and safe use among the pesticides. When available, label hyperlinks are provided in the electronic forms of this summary. Hyperlinks connect to business or governmental Web sites and not to any source maintained by the University of Florida and may change without notice. This information is provided in order to increase profitability of floriculture and enhance the safe and environmentally sound use of the pesticides now available.

1. This document is ENY-679, one of a series of the Entomology & Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Published: January 2003. For more publications related to horticulture/agriculture, please visit the EDIS Website at <http://edis.ifas.ufl.edu>.

2. James F. Price, associate professor, Curtis Nagle, biologist and Elzie McCord, adjunct professor, University of Florida Entomology and Nematology Department, Gulf Coast Research and Education Center, Cooperative Extension Service, Institute of Food and Agricultural Sciences, Bradenton, FL 34203. The use of trade names in this publication is solely for the purpose of providing specific information. UF/IFAS does not guarantee or warranty the products named, and references to them in this publication does not signify our approval to the exclusion of other products of suitable composition. All chemicals should be used in accordance with directions on the manufacturer's label. Use pesticides safely. Read and follow directions on the manufacturer's label.

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Table 1. Insecticides, Miticides and Molluscicides Available to Florida's Floricultural Industry.

Common Name	Trade Name ¹	Registrant	REI (Hrs) ²	Precaution	RUP ³
1,3-dichloropropene	Telone II	Dow Agrosciences	5 days	Warning	X
	Telone C-17 Telone C-35	Dow Agrosciences	5 days	Danger	X
Abamectin	Avid 0.15 EC	Syngenta	12	Warning	
Acephate	1300 Orthene TR	Whitmire Micro-Gen	24	Caution	
	Acephate Pro 75 Acephate Pro 75 WSP	Whitmire Micro-Gen	24	Caution	
	Address T/O	Dow Agrosciences	24	Caution	
	Orthene Turf, Tree & Ornamental Spray Orthene Turf, Tree & Ornamental Spray 97	Valent	24	Caution	
	Pinpoint 15 G	Valent	12	Caution	
	Sedagri Acephate 75 SP	Aventis Cropscience	24	Caution	
Azadirachtin	Azatin XL	Olympic	4	Caution	
	Ornazin 3% EC	AMVAC	12	Warning	
Azinphos-methyl	Guthion Solupak	Bayer	See Label	Danger	X
<i>Bacillus thuringiensis</i> <i>aizawai</i>	Xentari Xentari DF	Valent	4	Caution	
<i>Bacillus thuringiensis</i> <i>israelensis</i>	Gnatrol	Valent	4	Caution	
<i>Bacillus thuringiensis</i> <i>kurstaki</i>	Biobit HP Dipel 2X Dipel DF (and Pro DF)	Valent	4	Caution	
	Javelin WG	Certis	4	Caution	
	Troy-BT 2WP	Troy	4	Caution	
<i>Bacillus thuringiensis</i> <i>kurstaki</i> EG7841	Crymax WP	Ecogen	4	Caution	
<i>Beauveria bassiana</i> ATCC 74040	Naturalis T&O	Troy	4	Caution	
<i>Beauveria bassiana</i> Strain GHA	Botanigard 22WP	Mycotech	4	Caution	
	Botanigard ES	Mycotech	12	Warning	
Bifenazate	Floramite Floramite SC	Uniroyal Chemical	4	Caution	
Bifenthrin	Attain TR	Whitmire Micro-Gen	12	Warning	
	Talstar GH Prescription	Whitmire Micro-Gen	12	Caution	
	Talstar Flowable	FMC	12	Caution	
	Talstar N	Whitmire Micro-Gen	12	Caution	X
	Talstar Nursery	FMC	12	Caution	X
	Talstar Nursery Granular	FMC	12	Caution	
Capsaicin & other capsaicinoids	Hot Pepper Wax	Hot Pepper Wax	0	Caution	
Carbaryl	Sevin 80 WSP	Aventis Cropscience	12	Warning	
	Sevin SL	Aventis Cropscience	12	Caution	

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Common Name	Trade Name ¹	Registrant	REI (Hrs) ²	Precaution	RUP ³
Carbofuran	Furadan 4F	FMC	48	Danger	X
Chlorfenapyr	Pylon	Olympic	12	Caution	
Chlorpyrifos	Chlorpyrifos Pro 2 Chlorpyrifos Pro 4	Micro-Flo	24	Warning	X
	Duraguard ME	Whitmire Micro-Gen	24	Caution	X
	Dursban 50W	Dow Agrosiences	24	Danger	X
Chlorpyrifos & Cyfluthrin	Duraplex TR	Whitmire Micro-Gen	24	Warning	X
Cinnamaldehyde	Cinnamite	Mycotech	4	Caution	
Clarified Hydrophobic Extract of Neem Oil	Triact 70	Olympic	4	Caution	
	Triact 90 EC	Certis	4	Caution	
Clofentezine	Ovation SC	Scotts-Sierra	12	Caution	
Cryolite	Kryocide	Cerexagri	12	Caution	
	Prokil Cryolite 96	Gowan	12	Caution	
Cyfluthrin	Decathlon 20WP & WSP	Olympic	12	Caution	
Cyromazine	Citation	Syngenta	12	Caution	
Deltamethrin	Deltagard GC 5 SC	Aventis Env. Sci.	12	Caution	X
Diazinon	Diazinon 50W Diazinon AG 500	Micro-Flo	12	Caution	X
	Diazinon 50W	Platte Chemical	12	Caution	X
	Diazinon 5WB	Agriliance	12	Caution	X
	Diazinon AG500	Helena	12	Caution	X
	Diazinon	Drexel	12	Caution	X
	KnoxOut GH	Cleary	12	Caution	
	KnoxOut NL	Cleary	12	Caution	X
Dicofol	Kelthane 50 WSP	Dow Argosciences	48	Danger	
	Kelthane Turf & Ornamental	Dow Argosciences	12	Danger	
Diflubenzuron	Adept Dimilin 25W Dimilin SC	Uniroyal Chemical	12	Caution	
	Dimilin 25W IGR	Uniroyal Chemical	12	Caution	X
Dimethoate	5 Lb. Dimethoate	Helena	48	Danger	
	Dimethoate 4 EC	Helena	48	Warning	
	Dimethoate 267 Dimethoate 4E	Micro-Flo	48	Warning	
	Dimethoate 400	Platte Chemical	48	Warning	
Disulfoton	Di-Syston 15%	Bayer	48	Danger	X
Endosulfan	Endosulfan 50WP	Micro-Flo	24	Danger	
	Phaser 3EC Phaser 50WSB	Aventis Cropscience	24	Danger	
	Thiodan 3 EC	FMC	24	Danger	
Ethoprop	Mocap	Aventis Cropscience	48	Danger	X
Fenbutatin-oxide	Vendex 50WP	Griffin	48	Danger	X
Fenoxycarb	Award Fire Ant Bait Precision	Syngenta	12	Caution	
	Preclude TR	Whitmire Micro-Gen	12	Caution	
Fenpropathrin	Tame 2.4EC	Valent	24	Warning	X
Fenpyroximate	Akari 5SC	Sepro	12	Warning	

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Common Name	Trade Name ¹	Registrant	REI (Hrs) ²	Precaution	RUP ³
<i>Heterorhabditis megidis</i>	Nemasys H	Mycotech	0	None	
Hexythiazox	Hexygon Hexygon DF	Gowan	12	Caution	
Hydramethylnon	Amdro Pro	BASF	12	Caution	
Imidacloprid	Marathon 1% Granular Marathon 60 WP Marathon II	Olympic	12	Caution	
	Provado 1.6 Flowable	Bayer	12	Caution	
Lambda-cyhalothrin	Scimitar GC	Syngenta	24	Caution	X
Malathion	Atrapa 5E	Griffin	12	Caution	
	Gowan Malathion 8 F	Gowan	12	Caution	
	Malathion 5	AgriLiance	12	Warning	
	Malathion 5 EC	Micro-Flo	12	Warning	
	Prozap Malathion 57EC	Loveland	12	Caution	
Metaldehyde	Deadline Bullets Deadline M-Ps	Pace International	12	Caution	
	Durham Granules 3.5 Durham Granules 7.5 Trails End 3.5 Trails End LG	AMVAC	12	Caution	
	Prozap	HACCO	12	Caution	
Metam-sodium	Vapam HL	AMVAC	48	Danger	
	Metam CLR	UCB Chemicals	48	Danger	
Methidathion	Supracide 25-W	Gowan	48	Warning	X
Methiocarb	Mesuro 75-W	Gowan	24	Danger	X
	Measuro Pro	Gowan	24	Caution	X
Methyl Bromide & Chloropicrin	98-2 Preplant Soil Fumigant 67-33 Preplant Soil Fumigant 75-25 Preplant Soil Fumigant	Hy Yield-Bromine	48 See label	Danger	X
Naled	Dibrom 8 Emulsive	AMVAC	48 variable See label	Danger	
Novaluron	Pedestal	Crompton	12	Caution	
Oxydemeton-methyl	Metasystox-R	Gowan	48 See label	Warning	X
Permethrin	Ambush	Zeneca	12	Warning	X
	Ambush 25W	AMVAC	12	Warning	X
	Astro	FMC	12	Caution	
	Perm-Up 3.2EC	United Phosphorus	12	Caution	X
	Pounce 25 WP Pounce WSB	FMC	12	Warning	X
	Pounce 3.2 EC	FMC	12	Caution	X
Pheromone	Stirrup M	Troy	12	Caution	
Polyhedral Occlusion Bodies (POBs) of the nuclear polyhedrosis virus of <i>Helicoverpa zea</i>	Gemstar LC	Certis	4	Caution	

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Common Name	Trade Name ¹	Registrant	REI (Hrs) ²	Precaution	RUP ³
Polyhedral Occlusion Bodies (POBs) of the nuclear polyhedrosis virus of <i>Spodoptera exigua</i>	Spod-X LC	Certis	4	Caution	
Potassium Salts of Fatty Acids	Insecticidal Soap 49.52 CF	Olympic	12	Warning	
	M-Pede	Mycogen	12	Warning	
Propargite	Omite 30WS Ornamite	Uniroyal Chemical	7 days	Danger	
Pymetrozine	Endeavor	Syngenta	12	Caution	
Pyrethrins & Piperonyl Butoxide	1100 Pyrethrum TR	Whitmire Micro-Gen	12	Warning	
	Diatect Multipurpose	Diatect International	12	Caution	
	Pyrenone Crop Spray	Aventis Env. Sci.	12	Caution	
	Pyreth-It	Whitmire Micro-Gen	12	Caution	
Pyrethrins, Rotenone & other Cube Resins	Pyrellin E.C.	Webb Wright	12	Caution	
Pyridaben	Sanmite	BASF	12 See label	Warning	
Pyriproxyfen	Distance Fire Ant Bait Distance IGR	Valent	12	Caution	
	Pyrigro	Whitmire Micro-Gen	12	Caution	
Refined Petroleum Distillate	Saf-T-Side Spray Oil	Brandt Consolidated	4	Caution	
	Ultra-Fine Oil	Whitmire Micro-Gen	4	Caution	
S-Kinoprene	Enstar II	Wellmark International	4	Warning	
S-Methoprene	Extinguish	Wellmark International	4	Caution	
Spinosad	Conserve SC	Dow Agrosciences	4	Caution	
<i>Steinernema carpocapsae</i>	Millenium	Certis	0	Caution	
<i>Steinernema feltiae</i>	Nemasys	Mycotech	0	None	
Sulfur	Microthiol	Elf Atochem	24	Caution	
Tau-Fluvalinate	Mavrik Aquaflow	Wellmark International	12	Caution	
Tebufenozide	Confirm T/O	Dow Agrosciences	4	Caution	
Tefluthrin	Fireban Granular	Uniroyal Chemical	48	Caution	

¹ Usually only one example of each formulation is given. There may be other products available that are as effective as those listed.

² REI = Re-entry Interval or period between application and earliest normal entry into treated area.

³ RUP indicates Restricted Use Pesticide for which an applicator's license is required.