



UNIVERSITY OF  
FLORIDA

Institute of Food and Agricultural Sciences

Central Florida Research  
and Education Center

Cut Foliage Research Note

CFREC Cut Foliage Research Note RH-96-A

## Selected Insecticides, Miticides, and Nematicides with General Ornamental Plant Labeling

Robert H. Stamps and Diane K. Rock<sup>1</sup>

There are so many different species and cultivars of ornamental plants being produced today, and so many new ones being introduced each year, that the effects of individual pesticides on most of these ornamental crops have not been determined. Without tests showing that a pesticide is safe to use on a particular crop, no company can put that crop on the label of that product. Since pesticides can only be used as labeled (“the label is the law”), and most products are only labeled for a very limited number of plants, growers often have a problem finding pesticides that they can use to control various pests. While programs like the Interregional Research Project No. 4 (IR-4) help to generate needed data to register products for some minor use crops, they can only address a small percentage of the pesticide and crop combinations for which phytotoxicity and efficacy data are needed. This leaves growers and plant maintenance personnel with few or no pesticides labeled specifically for many of their crops.

Fortunately, many pesticides have general labeling that allows them to be used on a broad range of crops not specifically listed on the label *at the grower’s risk*. An example of the wording used on these labels is given below. Some labels are even more general and do not list specific crops but are labeled for “ornamentals”; “trees and shrubs”; “ornamentals, flowers and shrubs”; “foliage, flowering plants, woody and herbaceous ornamentals”; etc.

**NOTICE TO USER:** Plant tolerances to SuperStuff have been found to be acceptable for the specific genera and species listed on this label. Due to the large number of species and varieties of ornamentals and nursery plants, it is impossible to test every one for tolerance to SuperStuff. Neither the manufacturer nor the seller has determined whether or not SuperStuff can be used safely on ornamental and nursery plants not specified on this label. The user should determine if SuperStuff can be used safely prior to commercial use. In a small area, test the recommended rates for a particular group of unlabeled plants, i.e., bedding plants, foliage, etc., for phytotoxicity prior to widespread use.

Example of labeling allowing use of a pesticide on a wide range of ornamental plants *at the user’s risk*. The manufacturer and distributors accept no liability for product use on crops *not listed* on the product label.

Prudent growers should test multiple applications of a pesticide if it is likely that it will be used more than once. In addition, surfactants and adjuvants should be included as recommended

<sup>1</sup>Professor of Environmental Horticulture and Cut Foliage Specialist, and Technical Assistant, respectively, Central Florida Research and Education Center, 2807 Binion Road, Apopka, FL 32703-8504.

and sufficient time should be allowed so that phytotoxicity symptoms would have time to develop. If a new product will be used in tank mixes or in close sequences with other pesticides, plant tolerance tests should take into consideration the potential interactions with other pesticides used in the pest control program.

Pesticide users are reminded that all restrictions on where each product can be used (field, shadehouse, greenhouse, interiorscape), how it can be applied (chemigation, spray, aerial, etc.), on what soils it can be used, etc., must be adhered to. State and local labeling may differ from and be more restrictive than federal labeling. Pesticide applicators should always review product labels before using any pesticide and have all pertinent labels (including supplemental labels) in their possession prior to use of any pesticide.

Lists of pesticides with broad crop clearances can be an aid in identifying potentially useful products for controlling various pests on minor use crops. For example, *Fungicides with Broad Crop Clearance* by Dr. Gary Simone (Univ. of Florida, Inst. of Food and Agr. Sci., Fact Sheet PP-59) lists general crop types (bulbs, flowers, ornamentals, etc.), diseases, and fungicides with broad crop clearances. The following list of selected insecticides, miticides, and nematicides with general ornamental crop labeling (Table 1) provides information on active ingredients, trade names, formulations, labeling (application sites, restricted use, chemigation, restricted entry intervals [REI]), and names of manufacturers/distributors. Table 2 lists the addresses of the manufacturers/distributors of the pesticides listed in Table 1.

**Note:** Mention of a commercial or proprietary product or chemical does not constitute a recommendation or warranty of the product by the authors or the University of Florida, Institute of Food and Agricultural Sciences, nor does it imply its approval to the exclusion of other products that may also be suitable. Products should be used according to label instructions and safety equipment required on the label and by federal or state law should be employed. Users should avoid the use of chemicals under conditions that could lead to ground water contamination. Pesticide registrations may change so **it is the responsibility of the user to ascertain if a pesticide is registered by the appropriate local, state and federal agencies for an intended use.**

**Table 1. Selected insecticides, miticides and nematicides with broad ornamental plant labeling.**

Active ingredient	Tradename	Formulation	Location <sup>1</sup>	Restricted use	Labeled for Chemigation	REI <sup>2</sup> (hours)	Manufacturer/distributor	Comments
acephate	Orthene T, T & O	75 S	G,O	No	No	24	Valent USA	
	PT 1300 Orthene	aerosol (3.0% ai <sup>3</sup> )	G	No	na <sup>4</sup>	24	Whitmire Research Laboratories	Total release aerosol
	PT 1300 DS Orthene	aerosol (3.0% ai)	G,I,O	No	na	ni <sup>5</sup>	Whitmire Research Laboratories	Directed spray aerosol
abamectin	Avid	0.15 EC (1.9% ai)	G,O	No	No	12	Merck & Co., MSD AGVET	
azadirachtin	Azatin	0.265 EC (3.0% ai)	G,I,O	No	Yes	12	Biosys	Can use as soil drench
	Neemazad	L (4.5% ai)	G,I,On	No	No	12	Grace	
azinphos-methyl	Azinphos-M	50 W	O	Yes	No	48	Gowan	
	Azinphos-M	50 WSB	O	Yes	No	48	Gowan	
	Azinphosmethyl	2 EC (22.2% ai)	O	Yes	No	48	Micro Flo	
	Azinphosmethyl	50 W	O	No	No	48	Micro Flo	
	Azinphosmethyl	50 WSP	O	No	No	48	Micro Flo	
<i>Bacillus thuringiensis</i>	Mattech	FL (12% ai)	G,O	No	Yes	4	Mycogen	
<i>Bacillus thuringiensis</i> var. <i>aizawai</i>	XenTari	WDG (10.3% ai)	G,O	No	No	4	Abbott Laboratories	
<i>Bacillus thuringiensis</i> var. <i>israelensis</i>	Gnatrol	L (0.6% ai)	G,I	No	Yes	4	Abbott Laboratories	For fungus gnat control
<i>Bacillus thuringiensis</i> var. <i>kurstaki</i>	Dipel 2 X	WP (6.4% ai)	G,O	No	Yes	4	Abbott Laboratories	Chemigation: Florida only
	Javelin, Steward	WG (6.4% ai)	G,O	No	No	12	Sandoz Agro	
	MVP II	FL (20% ai)	G,O	No	Yes	4	Mycogen	
bendiocarb	Dycarb	76 WP	G,I,O	No	No	12	Scotts	
	Turcam	2½ G	OI	Yes	na	12	AgrEvo USA	
	Turcam	76 WP	G,I,O	Yes	No	12	AgrEvo USA	
bifenthrin	PT 1800 Attain	aerosol (0.5% ai)	G	No	na	12	Whitmire Research Laboratories	Total release aerosol
	Talstar T & O	0.67 F (7.9% ai)	G,I,OI	No	No	12	FMC, Scotts	
	Talstar T & O	10 WP	G,I,OI	No	No	12	FMC, Scotts	
carbaryl	Carbaryl	2 L (22.5% ai)	O	No	No	ni	Drexel Chemical	
	Carbaryl	4 L (43.4% ai)	O	No	Yes	ni	Drexel Chemical	
	Carbaryl	80 S	O	No	No	ni	Drexel Chemical	
	Carbaryl	90 DF	O	No	Yes	12	Riverside/Terra	

**Table 1. Selected insecticides, miticides and nematocides with broad ornamental plant labeling.**

Active ingredient	Tradename	Formulation	Location <sup>1</sup>	Restricted use	Labeled for Chemigation	REI <sup>2</sup> (hours)	Manufacturer/distributor	Comments
carbaryl (continued)	Carbaryl Sprayable	80 WP	O	No	No	12	Micro Flo	
	Sevimol	AS (40.0% ai)	O	No	No	ni	Rhône-Poulenc	
	Sevin	4 FL (43.3% ai)	O	No	Yes	12	Micro Flo	Avoid foliage on bedding plants.
	Sevin	4 FL (42.9% ai)	O	No	No	12	SureCo	
	Sevin	SL (41.2% ai)	O	No	No	ni	Lesco	
	Sevin	50 WP	O	No	Yes	12	Micro Flo	
	Sevin	50 WP	O	No	No	12	SureCo	
carbofuran	Furadan	4 F (44.0% ai)	O	Yes	No	48	FMC	Containerized: root weevil larvae control.
chlorpyrifos	Chlorpyrifos	4 E (44.7% ai)	O	No	No	12	Micro Flo	
	Chlorpyrifos Pro 2	2 E (24.7% ai)	O	No	No	12	Micro Flo	
	Dursban	2 E (23.5% ai)	O	No	No	12	SureCo	
	Dursban	2.5 G (2.5% ai)	O	No	na	12	SureCo	Containers only
	Dursban	4 E (44.4% ai)	O	No	No	12	SureCo	
	Dursban	50 WSP	O	No	No	12	Dow AgroSciences	
	Dursban Nursery	50 WSP	O	No	No	12	Dow AgroSciences	
	Dursban Pro	2 EC (23.5% ai)	I,OI	No	No	na	Dow AgroSciences	For aesthetic plant use only, not for plants grown for sale.
	PT 1325 ME Dura-Guard	LC (20.0% ai)	G,I,O	No	No	12	Whitmire Research Laboratories	
cyfluthrin	Decathlon	20 WP	G,I,O	No	No	12	Olympic Horticultural Products	
	Tempo	2 EC (24.3% ai)	I,OI	No	No	na	Bayer	Not for use in commercial greenhouses or nurseries.
	Tempo	20 WP	I,OI	No	No	na	Bayer	Not for use in commercial greenhouses or nurseries.
cyromazine	Citation	75 WSP	G,I,O	No	No	12	Ciba Crop Protection	
diazinon	D-264	4 E (48.2% ai)	O	No	No	ni	Drexel Chemical	
	Diazinon	50 WP	O	No	No	ni	Drexel Chemical	
	Diazinon	50 WP	O	Yes	No	12	Gowan	
	Diazinon	50 WP	O	Yes	No	12	Micro Flo	

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diazinon (continued)	Diazinon	50 WP	O	Yes	No	ni	SureCo	
	Diazinon AG500	4 E (48.2% ai)	O	Yes	No	12	Micro Flo	
	Diazinon AG500	4 E (48.0% ai)	O	Yes	No	ni	SureCo	
	Diazinon Insecticide	4 E (48.2% ai)	O	No	Yes	ni	Drexel Chemical	
	D•z•n	50 WP	O	Yes	No	12	Ciba Crop Protection	
	D•z•n AG500	4 E (48.0% ai)	O	Yes	No	12	Ciba Crop Protection	
	Knox Out GH	2 F (23.0% ai)	G,I,O	Yes	No	12	W. A. Cleary Chemical	Not for use on golf courses or sod farms.
dicofol	Kelthane T/O	50 WP	G,O	No	No	12	Rohm and Haas	
dienochlor	Pentac	50 WP	G,I	No	No	12	Sandoz Agro	
	Pentac Aquaflow	4 F (38.0% ai)	G,I	No	No	12	Sandoz Agro	
diflubenzuron	Dimilin	4 L (40.0% ai)	I,OI	Yes	No	na	Uniroyal Chemical	For aesthetic plant use only, not for plants for sale.
endosulfan	Endosulfan	2 EC (24.6% ai)	G,O	No	No	ni	Drexel Chemical	
	Endosulfan	3 EC (34.0% ai)	G,O	No	No	24	Gowan	
	Endosulfan	3 EC (33.7% ai)	G,O	No	No	24	Micro Flo	
	Endosulfan	50 WP	G,O	No	No	24	Micro Flo	
	Endosulfan	50 WSB	G,O	No	No	24	Gowan	
	Thiodan	2 EC (23.1% ai)	G,O	No	No	24	FMC	
	Thiodan T&O	3 EC (33.7% ai)	G,O	No	No	24	FMC	
	Thiodan T&O	50 WP	G,O	No	No	24	FMC	
	Thiodan	WSP (49.6% ai)	G,O	No	No	24	FMC	
ethion	Ethion	4 EC (46.5% ai)	G,O	No	No	48	Micro Flo	Use for soil treatment in greenhouses.
fenamiphos	Nemacur	10 G	O	Yes	na	48	Bayer	Refer to label for clarification on REI.
fenoxycarb	Precision	25 WP	G,I,O	No	No	12	Ciba Plant Protection	
	PT 2100 Preclude	aerosol (0.6% ai)	G	No	na	12	Whitmire Research Laboratories	
fenpropathrin	Tame	2.4 EC (30.0% ai)	G,On	No	No	24	Valent USA	Container only
fluvialinate	Mavrik Aquaflow	2 F (22.3% ai)	G,O	No	No	12	Sandoz Agro	

**Table 1. Selected insecticides, miticides and nematicides with broad ornamental plant labeling.**

Active ingredient	Tradename	Formulation	Location <sup>1</sup>	Restricted use	Labeled for Chemigation	REI <sup>2</sup> (hours)	Manufacturer/distributor	Comments
hexythiazox	Hexygon	50 WP	O	No	No	12	Gowan	
imidacloprid	Marathon	1 G	G,On	No	na	12	Olympic Horticultural Products	
	Merit	75 WP	I,OI	No	No	na	Bayer	Not for use in commercial greenhouses or nurseries.
	Merit	75 WSP	I,OI	No	No	na	Bayer	Not for use in commercial greenhouses or nurseries.
kinoprene	Enstar II	5 E (65.1% ai)	G,I	No	No	12	Sandoz Agro	
lamda-cyhalothrin	Topcide	10 WSP	G,On	No	No	24	Uniroyal Chemical	
lindane	Lindane	1.65 EC (20.0% ai)	O	Yes	No	ni	Drexel Chemical	
malathion	Malathion 50%	4.33 EC (50.0% ai)	O	No	No	ni	SureCo	
	Malathion	5 EC (57.0% ai)	O	No	No	ni	Drexel Chemical	
	Malathion	5 EC (56.0% ai)	O	No	No	12	Micro Flo	
	Malathion	5 EC (56.8% ai)	O	No	No	12	Riverside/Terra	
	Malathion	8 EL (79.5% ai)	O	No	No	12	Gowan	
	Malathion	8 F (79.5% ai)	O	No	No	12	Gowan	
	Malathion	25 WP	O	No	No	12	Micro Flo	
	Malathion	25 WP	O	No	No	12	SureCo	
methoxychlor	Methoxychlor	4 L	O	No	No	ni	Drexel Chemical	
metaldehyde	Deadline Granules	4 G	G,O	No	No	ni	Valent U.S.A.	
	Snail & Slug Killer	pellets (0.13% ai)	G,On	No	na	12	Micro Flo	
	Snail & Slug Killer	meal (0.13% ai)	G,On	No	na	12	Micro Flo	
oil, neem	Triact	90 EC	G,O	No	No	4	Grace	
oil, paraffinic	SunSpray Ultra-Fine Spray Oil	(98.8% ai)	G,I,O	No	No	12	Sun	
oil, petroleum	Horticultural Oil	EC (98.8%)	O	No	No	na	Lesco	For aesthetic plant use only, not for plants for sale.
	Soluble Oil 97	EC (99.0% ai)	G,O	No	No	12	Micro Flo	
	Target	EC (80.0% ai)	G,O	No	No	12	Florikan E.S.A.	
oxydemeton-methyl	Metasystox-R 2	2 EC (25.0% ai)	I,OI	Yes	No	na	Gowan	For aesthetic plant use only, not for plants for sale. Soil injection only.

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Active ingredient	Tradename	Formulation	Location <sup>1</sup>	Restricted use	Labeled for Chemigation	REI <sup>2</sup> (hours)	Manufacturer/distributor	Comments
oxythioquinox	Joust	4 F (38.4% ai)	On	No	No	24	Olympic Horticultural Products	
	Morestan	4 F (38.4% ai)	OI	No	No	na	Bayer	For aesthetic plant use only, not for plants for sale.
permethrin	Ambush	25 W	O	Yes	No	24	Zeneca Ag Products	Field grown only
	Astro	3.2 EC (36.8% ai)	G,I,O	No	Yes	24	FMC	
	Astro T & O	3.2 EC (38.4%)	On	Yes	Yes	24	FMC	
	Astro	25 WP	On	Yes	Yes	24	FMC	
	Pounce	3.2 EC (38.4% ai)	On	Yes	Yes	24	FMC	Field grown only
	Pounce	WSP	On	Yes	Yes	24	FMC	Field grown only
	Pounce T & O	25 WP	On	Yes	Yes	24	FMC	Field grown only
propargite	Ornamite	30 WP	On	No	No	7days	Uniroyal Chemical	
pyrethrins + piperonyl butoxide	PT 1100 Pyrethrum	aerosol (0.5% ai + 1.0% ai)	G	No	na	12	Whitmire Research Laboratories	
pyridaben	Sanmite	75 WP	G	No	No	12	BASF	
resmethrin	PT 1200 DS Resmethrin	aerosol (1.0% ai)	G	No	na	24	Whitmire Research Laboratories	Total release aerosol
	PT 1200 TR Resmethrin	aerosol (1.0% ai)	G	No	na	ni	Whitmire Research Laboratories	Directed spray aerosol
soap (potassium salts of fatty acids)	Insecticidal Soap	LC (25% ai)	I,O	No	No	12	Olympic Horticultural Products	
	M-Pede	LC (49% ai)	G,I,O	No	No	12	Mycogen	
sodium aluminofluoride	PROKIL Cryolite 96	(96.0% ai)	O	No	No	12	Gowan	
<i>Steinernema feltiae</i>	X-GNAT	(15.0% ai)	G,I,O	No	Yes	ni	Biosys	
<i>Steinernema carpocapsae</i>	Savior	(20.0% ai)	G,I,O	No	Yes	ni	Biosys	
Trichlorfon	Dylox	80 SP	OI	No	No	na	Bayer	Not for use in commercial greenhouses or nurseries.
	Proxol	80 SP	OI	No	No	24	AgrEvo	

<sup>1</sup>Location: G = greenhouse; I = interiorscape; OI = outdoor landscape; On = outdoor and shadehouse nurseries; O = outdoor (includes landscape and nurseries).

<sup>2</sup>REI = restricted entry interval.

<sup>3</sup>ai = active ingredient.

<sup>4</sup>na = not applicable.

<sup>5</sup>ni = no information.

**Table 2. List of Insecticide, Miticide and Nematicide Manufacturers/Distributors.**

<b>Company</b>	<b>Division</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
Abbott Laboratories	Chemical & Agricultural Products	1401 Sheridan Road	North Chicago	IL	60064
AgrEvo USA Company		2711 Centerville Road	Wilmington	DE	19808
BASF Corporation	Agricultural Products Group	P.O. Box 13528	Research Triangle Park	NC	27709-3528
Bayer Corporation	Agriculture Speciality Products	P.O. Box 4913	Kansas City	MO	64120
Biosys		1057 East Meadow Circle	Palo Alto	CA	94303
Ciba Crop Protection		410 Swing Road	Greensboro	NC	27419-8300
W. A. Cleary Cemical Corporation	Sales and Distribution Center	178 Ridge Road, Suite A	Dayton	NJ	08810
Dow AgroSciences		9330 Zionsville Road	Indianapolis	IN	46268-1054
Drexel Chemical Company		1700 Channel Avenue	Memphis	TN	38113
Florikan E.S.A. Corporation		1523 Edger Place	Sarasota	FL	34240
FMC Corp Corporation	Agricultural Chemical Group	1735 Market Street	Philadelphia	PA	19103
Gowan Company		P.O. Box 5569	Yuma	AZ	85366
W.R. Grace & Company	Grace Biopesticides	7379 Route 2	Columbia	MD	21044
Lesco		20005 Lake Road	Rocky River	OH	44116
Merck & Company	MSD AgVet	P.O. Box 2000	Rahway	NJ	07065
Micro Flo Company		P.O. Box 5948	Lakeland	FL	33807
Mycogen Corporation		4980 Carroll Canyon Road	San Diego	CA	92121
Olympic Horticultural Products		P.O. Box 230	Mainland	PA	19451-0230
Rhône-Poulenc	Rhône-Poulenc Ag Company	P.O. Box 12014	Research Triangle Park	NC	27709
Terra International	Riverside/Terra	P.O. Box 6000	Sioux City	IA	51102-6000
Rohm and Haas Company		100 Independence Mall West	Philadelphia	PA	19106
Sandoz Agro		1300 E. Touhy Avenue	Des Plaines	IL	60018
"The" Scotts Company		14111 Scottslawn Road	Marysville	OH	43041

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<b>Company</b>	<b>Division</b>	<b>Address</b>	<b>City</b>	<b>State</b>	<b>Zip Code</b>
Sun Company		P.O. Box 1135	Marcus Hook	PA	19061
SureCo		10008 N. Dale Mabry, Suite 121	Tampa	FL	33618
Uniroyal Chemical Company		Benson Road	Middlebury	CT	06749
Valent USA Corporation		1333N. California Boulevard, Suite 600	Walnut Creek	CA	94596-8025
Whitmire Research Laboratories		3568 Tree Court Industrial Blvd.	St. Louis	MO	63122
Zenca Ag Products		1800 Concord Pike	Wilmington	DE	19897

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