

PLANT PROTECTION

Western Farm Service offers the most complete line of pest management products in the Pacific Region. In California, each of our field sales representatives is a licensed Pest Control Advisor. Many of them have passed the Certified Crop Advisor certification. In all areas they are available to make specific written recommendations for your pest management program and needs.



Olympic Horticultural Products, one of our key suppliers, prepared some of the following tables, which have been included as reference for some of the pest management, and growth regulation products that we carry. Every effort has been made to ensure that the information is reliable.

Products have been included in this catalog that are not registered in all states we service. Please contact your local Western Farm Service representative for complete labels and MSDS's for specific products. As always, please consult and follow manufacturer's label directions before application of any product. Western Farm Service assumes no responsibility for the use of this information.

Western Farm Service follows all Federal, State and local laws and regulations. We are required to obtain proper documentation such as a California Operator Identification number, restricted use permits or copy of certified applicators licenses before we can deliver any pesticide product.

REFERENCE GUIDE for ORNAMENTAL PRODUCTION INSECTICIDES

RESISTANCE MANAGEMENT*

When applying insecticides, always focus on resistance management. Do not rely on one insecticide, combination of insecticides or related insecticide classes.

Make 2 or 3 applications of an insecticide in sequence, then rotate to another class. Try to avoid applying the same insecticide to more than one generation of the pest.

NOTE: THIS IS ONE OF THE MAIN REASONS WHY IT IS VITALLY IMPORTANT TO PROPERLY DETECT THE PROBLEM PEST AND KEEP GOOD SPRAY RECORDS.

Using insecticides correctly also includes proper timing, understanding the pest life cycle, and the stage that each insecticide controls. The appropriate and labeled (legal) method of application is also a very important factor to consider.

Low volume (L.V.) applications (smoke generator, thermal fog, cold fog, aerosol, and electrostatic) are commonly used in greenhouses. Low volume sprays generally are more effective against adults than immature stages. Use high volume sprays, directed under the leaves for best results against eggs, nymphs and pupae.

Always read the label and check with local authorities for further information regarding resistance management.

* References - OFA Bulletin / Richard K. Lindquist, Ph.D.

Insecticides (by class)

CLASS	COMMON NAME	TRADE NAME	CALIF. REG.	REI	COMPANY
BENZOYLUREA	Diflubenzuron	Adept™	Yes	12	Uniroyal Chemical Co.
BIOLOGICAL	Azadirachtin	Azatin®XL	Yes	4	Olympic Horticultural Products
		Ornazin™	Yes	12	SePRO Corp.
	<i>Beauveria bassiana</i>	Naturalis®-T&O	No	4	Troy Biosciences
		BotaniGard®	Yes	4	Whitmire Micro-Gen
	<i>Bacillus thuringiensis</i>	DiPel®	Yes	12	Valent U.S.A. Corp.
		Gnatrol®	Yes	4	Valent U.S.A. Corp.
	Cinnamaldehyde	Cinnamite®	Yes	4	Whitmire Micro-Gen
	Spinosad	Conserve™	Yes	4	Dow AgroSciences
	Pyrethrins	Pyrethrum® TR	Yes	12	Whitmire Micro-Gen

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Insecticides (by class)

CLASS	COMMON NAME	TRADE NAME	CALIF. REG.	REI	COMPANY
BIO-RATIONAL	Kinoprene	Enstar®	Yes	4	Wellmark International
CARBAMATE	Bendiocarb	Closure™	No	12	The Scotts Company
		Dycarb®	No	12	The Scotts Company
	Carbaryl	Sevin®	Yes	12	Aventis
	Fenoxycarb	Preclude® TR	No	12	Whitmire Micro-Gen
		Precision® IGR	No	12	Whitmire Micro-Gen
	Methiocarb	MesuroI®	Yes	24	Gowan Company
CARBOXAMIDE	Hexythiazox	Hexygon®	Yes	12	Gowan Company
CARBOXYLE	Hydrazine	Floramite®	Yes	4	Uniroyal Chemical Co.
CHLORONICOTINYL	Imidacloprid	Marathon®	Yes	12*	Olympic Horticultural Products <small>*Exception for soil application.</small>
DRACYLHDRAZINE	Tebufenozide	Confirm® T/O	Yes	4	Dow AgroSciences
GLYCOSIDE	Abamectin	Avid®	Yes	12	Syngenta
OILS	Clarified Hydrophobic				
	Extract of Neem Oil	Triact® 70	Yes	4	Olympic Horticultural Products
	Paraffinic Oil	Sun Spray® Ultra-Fine® Spray Oil	Yes	4	Whitmire Micro-Gen
ORGANO CHLORINES	Dicofol	Kelthane®	Yes	48	Dow AgroSciences
	Endosulfan	Thiodan®	Yes	12	FMC Corp.
ORGANOPHOSPHATE	Acephate	Address	Yes	24	Dow AgroSciences
		Orthene®TT&O	Yes	24	Valent U.S.A. Corp.
		Pinpoint®*	Yes	12	Valent U.S.A. Corp.
		1300 Orthene®TR	Yes	24	Whitmire Micro-Gen
	Diazinon	KnoxOut® GH	Yes	12	Cleary Chemical Corp.
		PT® 1500 KnoxOut®	Yes	12	Whitmire Micro-Gen
		<small>*Pinpoint is labeled for use on container grown nursery stock only.</small>			
ORGANTIN	Fenbutatin-oxide	Vendex®	Yes	48	Griffin LLC
PHENOXYPYRAZOLE	Fenpyroximate	Akari®	No	12	SePRO Corp.
PYRETHROID	Bifenthrin	Talstar® GH	Yes	12	Whitmire Micro-Gen
		PT® 1800 Attain®	Yes	12	Whitmire Micro-Gen
	Cyfluthrin	Decathlon™	Yes	12	Olympic Horticultural Products
	Deltamethrin	Delta Gard®	Yes	12	Aventis
	Fenpropathrin	Tame®	Yes	24	Valent U.S.A. Corp.
	Fluvalinate	Mavrik®	Yes	12	Wellmark International
	<i>lambda-Cyhalothrin</i>	Scimitar® GC	Yes	24	Syngenta
	Permethrin	Astro™	Yes	12	FMC Corp.
PYRIDAZINONE	Pyridaben	Sanmite®	Yes	12	The Scotts Company
PYRIDINE	Pyriproxyfen	Distance®	Yes	12	Valent U.S.A. Corp.
	Pymetrozine	Endeavor®	Yes	12	Syngenta
PYRROLES	Chlorfenapyr	Pylon®	No	12	Olympic Horticultural Products
SOAPS	Potassium salts of fatty acids	Insecticidal			
		Soap 49.52 CF	Yes	12	Olympic Horticultural Products
		M-Pede®	Yes	12	Dow AgroSciences
TETRAZINE	Clofentezine	Ovation™	No	12	The Scotts Company
TRIAZINE	Cyromazine	Citation®	Yes	12	Syngenta



FORMULATION TABLE

Dry Flowable	DF	Liquid Concentrate	LC
Emulsified	E	Micro-Encapsulated	ME
Emulsified Concentrate	EC	Water Dispersible Granule	WDG
Extruded Granule	EG	Water Soluble Bag	WSB
Flowable	F	Water Soluble Packet	WSP
Granular	G	Wettable Powder	WP

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REFERENCE GUIDE FOR ORNAMENTAL PRODUCTION FUNGICIDES

Many leading plant pathologists recommend the rotation of fungicides as an additional strategy against resistance development. To rotate from one product to another does not achieve the goal, rather one must rotate from class and mode of action to successfully fight the potential of resistance development.



Always read the label and check with local authorities for further information regarding resistance management.

Fungicides (by class)

CLASS	COMMON NAME	TRADE NAME	CALIF. REG.	REI	COMPANY
ACYLALANINES	Mefenoxam	Quell®	Yes	12	Sipcam Agro USA
		Subdue® MAXX™	Yes	0	Syngenta
BENZAMIDES	Flutolanil	Contrast™	Yes	12	The Scotts Company
BENZIMIDAZOLES	Thiophanate-methyl	3336™	Yes	12	Cleary Chemical Corp.
		Banrot®*	No	12	The Scotts Company
		Fungo Flo®	Yes	12	The Scotts Company
		OHP 6672™	No	12	Olympic Horticultural Products
		SysTec 1998®	Yes	12	Regal Chemical Co.
		Zyban® **	Yes	24	The Scotts Company
	* Banrot is a combination of Thiophanate methyl and Etridiazole.	** Zyban is a combination of Thiophanate methyl and Mancozeb.			
BENZONITRILE	Chlorothalonil	Concorde® SST	No	12	Griffin LLC
		Daconil® Ultrex	Yes	12	Syngenta
		Echo™ 90	Yes	48	Sipcam Agro USA
		PathGuard™	Yes	12	Whitmire Micro-Gen
		ConSyst® ***	No	48	Regal Chemical Co.
		Spectro 90® ****	Yes	12	Cleary Chemical Corp.
	*** ConSyst is a combination of Thiophanate methyl and Chlorothalonil.	**** Spectro 90 is a combination of Thiophanate methyl and Chlorothalonil.			
BICARBONATE	Potassium bicarbonate	FirstStep®	No	4	Cleary Chemical Corp.
BIOLOGICAL	<i>Trichoderma harzianum</i>	Rootshield®	No	0	BioWorks
		Cinnamaldehyde	Yes	4	Whitmire Micro-Gen
		<i>Gliocladium virens</i>	Yes	4	Olympic Horticultural Products
CARBAMATE	Propamocarb	Banol®	No	12	Aventis
CHLORINATED HYDROCARBON	PCNB	Defend®	No	12	Cleary Chemical Corp.
		Terraclor®	Yes	12	Uniroyal Chemical Co.
COPPER, COMPLEXES	Copper sulfate	Camelot®	Yes	12	Whitmire Micro-Gen
		Phyton 27®	Yes	24	Source Tech Bio, Inc.
COPPER, FIXED	Copper hydroxide	Junction®	Yes	24	Griffin LLC
		Kocide® T/N/O	Yes	24	Griffin LLC
DICARBOXIMIDE	Iprodione	Chipco® GT	Yes	12	Aventis
		Sextant™	No	12	Olympic Horticultural Products
	Vinclozolin	Curalan®	Yes	12	The Scotts Company
		Ornalin®	Yes	12	The Scotts Company

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LIQUID CONVERSION TABLE

Rate/Acre	Rate/1,000 sq. ft.	Rate/100 sq. ft.
1 Pint	3/4 Tablespoon	1/4 Teaspoon
1 Quart	1-1/2 Tablespoons	1/2 Teaspoon
1 Gallon	6 Tablespoons	2 Teaspoons
25 Gallons	4-1/2 Pints	1 Cup
100 Gallons	9 Quarts	1 Quart

DRY CONVERSION TABLE

Rate/Acre	Rate/1,000 sq. ft.	Rate/100 sq. ft.
1 Pound	2-1/2 Teaspoons	1/4 Teaspoon
3 Pounds	2-1/4 Tablespoons	3/4 Teaspoon
4 Pounds	3 Tablespoons	1 Teaspoon
5 Pounds	2 Tablespoons	1-1/4 Teaspoon
10 Pounds	1/2 Cup	2 Teaspoons

Fungicides (by class)

CLASS	COMMON NAME	TRADE NAME	CALIF. REG.	REI	COMPANY
DICHLOROBENZOATE	Piperalin	Pipron®	Yes	12	SePRO Corp.
DITHIOCARBAMATE	Mancozeb	Dithane®	Yes	24	Dow AgroSciences
		Fore®	Yes	24	Dow AgroSciences
		Manzate®	Yes	24	Griffin LLC
		Pentathlon®	Yes	24	Griffin LLC
		Manganese + Zinc	Protect® T/O	Yes	24
HYDROGEN DIOXIDE		ZeroTol	Yes	0	Biosafe Systems
HYDROXYANILIDE	Fenhexamid	Decree®	Yes	4	SePRO Corp.
IMIDAZOLE	Triflumizole	Terraguard®	Yes	24	Uniroyal Chemical Co.
OILS	Clarified hydrophobic extract of Neem Oil	Triact® 70	Yes	4	Olympic Horticultural Products
ORGANIC PHOSPHATE	Fosetyl-AL	Chipco® Aliette®	Yes	12	Aventis
PHENYLPYROLE	Fludioxonil	Medallion™	Yes	12	Syngenta
PYRIMIDINE	Fenarimol	Rubigan®	Yes	12	SePRO Corp.
STROBILURIN	Azoxystrobin	Heritage®	Yes	4	Syngenta
	Kresoxim-methyl	Cygnus®	Yes	12	The Scotts Company
	Trifloxystrobin	Compass™ O	Yes	12	Olympic Horticultural Products
THIADIAZOLE	Etridiazole	Truban®	No	12	The Scotts Company
		Terrazole®	No	12	Uniroyal Chemical Co.
TRIAZOLE	Propiconazole	Banner® MAXX™	Yes	24	Syngenta
	Triadimefon	Strike® 50	Yes	12	Olympic Horticultural Products
	Myclobutanil	Sythane®	Yes	24	Dow AgroSciences

Other Chemical Products

Western Farm Service offers many other chemicals used in nursery and greenhouse production. They include but are not limited to:

Disinfectants

Phyisan
Greenshield

Wetting Agents

Psi Matrix
Capsil
Water Maxx

Baits

Deadline
Durham/Amvac Metaldehyde
Mesuro! Pro
First Choice Sluggo
Carbaryl Bait

Vertebrate Controls

Wilco Gopher & Squirrel Baits
Rozol Gopher & Squirrel Baits
Boothill Rat & Mice Baits
Hot Sauce Repellent
Fumitoxin

Fumigants

Basamid
Methyl Bromide

Spray Indicators

Blazon
SPI Max

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Herbicides (by class)

CLASS	COMMON NAME	TRADE NAME	CALIF. REG.	REI	COMPANY
DINITROANILINE	prodiamine	Barricade	Yes	12	Syngenta
DINITROANILINE	pendimethalin	Corral G	Yes	24	Scotts
SUBSTITUTED AMIDE	napropamide	Devrinol	Yes	12	United Phosphorous
PYRIDINE	dithiopyr	Dimension	Yes	12	Dow Agro
UNCLASSIFIED	glufosinate-ammonium	Finale	Yes	4	Aventis
DIPHENYLETHER	oxyfluorfen	Goal	Yes	24	Dow Agro
DINITROANILINE + DIPHENYLETHER	pendimethalin + oxyfluorfen	OH II	Yes	24	Scotts
DINITROANILINE	pendimethalin	Pendulum	Yes	12	BASF
ACETANILDE	metolochlor	Pennant	Yes	24	Syngenta
OXADIAZOLE + DIPHENYLETHER	oxadiazon + oxyfluorfen	Regal O-O	Yes	24	Regal
OXADIAZOLE	oxadiazon	Regal Ronstar AC	Yes	12	Regal
BIPYRIDILIUM	diquat	Reward	Yes	24	Syngenta
OXADIAZOLE	oxadiazon	Ronstar G	Yes	12	Aventis
OXADIAZOLE	oxadiazon	Ronstar WSP	Yes	12	Aventis
UNCLASSIFIED	glyphosate	Round Up Pro	Yes	4	Monsanto
UNCLASSIFIED	glyphosate	Round Up Pro Concentrate	Yes	4	Monsanto
UNCLASSIFIED	glyphosate	Round Up Pro Dry	Yes	4	Monsanto
DINITROANILINE + DIPHENYLETHER	oryzalin + oxyfluorfen	Rout	Yes	24	Scotts
FATTY ACID	pelargonic acid	Scythe	Yes	24	Dow Agro
BENZAMIDE + DINITROANILINE	isoxaben + trifluralin	Snapshot	Yes	12	Dow Agro
DINITROANILINE	oryzalin	Surflan	Yes	12	Dow Agro
UNCLASSIFIED	glyphosate	Touchdown® Pro	Yes	4	Syngenta
DINITROANILINE	trifluralin	Treflan	Yes	12	Monterey
DINITROANILINE	benefin + oryzalin	XL	Yes	12	Setre

Plant Growth Regulators (by class)

CLASS	COMMON NAME	TRADE NAME	CALIF. REG.	REI	COMPANY
PYRIMIDINE	Ancymidol	A-Rest	Yes	12	SePRO
FATTY ACID ESTER	Dikegulac	Atrimmec	Yes	12	PBI Gordon
HYDRAZIDE	Daminozide	B-Nine	Yes	24	Uniroyal
TRIAZOLE	Paclobutrazol	Bonzi	Yes	12	Uniroyal
QUATERNARY AMMONIA	Chlormequat chloride	Cycocel	Yes	12	Olympic
EXOGENOUS HORMONES	IBA/NAA	Dip N Gro	Yes	24	Astoria Pacific
ETHYLENE INHIBITOR	Methylcycloprene	Ethyl Bloc	Yes	4	Floralife
EXOGENOUS HORMONES	Benzyl Adenine/Gibberellin	Fascination	No	12	Valent
ORGANIC PHOSPHOROUS	Ethephon	Florel/Pistill	Yes	48	Monterey
EXOGENOUS HORMONE	IBA	Hormex	Yes	12	Brooker
GIBBERELLINS	Gibberellic Acid	Pro Gibb T & O	No	12	Valent
TRIAZOLE	Uniconazole-P	Sumagic	Yes	12	Valent
PYRIMIDINE	Flurprimidol	Topflor	No	12	SePRO

Optimum pH

Most pesticides and fungicides perform more effectively when pH of tank mix is below 6.5 on the pH scale. Always check your pesticide label for optimum pH.

