

SHEET 180 - EFFECT OF CHEMICALS

Effect of Chemicals on Biological Control Agents

This data is compiled from various sources, including the IOBC (International Organization for Biological Control) working group on pesticides, and from commercial growers' field results over a number of years. Results will vary depending on temperature, crop and type of greenhouse cover. Pesticides with residuals over 14 days (*) should rarely be used as they may disrupt biological control programs for an entire season. Contact your biocontrol supplier if in doubt before purchasing or applying any chemical.

Note: Although some compounds, particularly sulphur sprays or dusts are not directly toxic, they have been found to interfere with biological control programs and repeated use will be detrimental.

Never use wetting agents or spreader-stickers (except for 0.25% magnesium sulphate) as these are themselves toxic to biocontrol agents.

Every effort has been made to ensure that all the information in this table is correct at the time of printing, but Applied Bio-Nomics and its distributors do not accept liability for any error of omission in the context or for any losses, damages or other accidents resulting from products listed herein. Although this table lists pesticides registered on different crops in many countries, it is in no way implies that such pesticides are registered for use in your location. Check with local officials of the Environment and Agriculture for registrations and follow instructions on the label. (Revised 2006)

PESTICIDE		EFFECT ON BIOLOGICAL CONTROL AGENT ¹				
Trade Name application ²	Common name	<i>Encarsia</i> <i>Aphidius</i>	<i>Persimilis</i> (for <i>Fallacis</i> see sheet 201)	<i>Cucumeris</i> <i>Hypoaspis</i> ³	<i>Aphidoletes</i>	<i>Orius</i> Harmonia Delphastus Dicyphus
Admiral*	pyriproxifen	H(35)	S	S	H(7)	H(7)
Afugan*	pyrazofos	H(21)	H(0)	H(1)	H(21)	H
Aliette	fosetyl	S	S	S	S	S
Ambush*	permethrin	H(56)	H(14)	H(30)	H(56)	H
Apex	methoprene	S	S	S	S	?
Apollo	clofentezine	H(3)	S	S	S	S
Applaud	buprofezin	H(3)	I	S	H(7)	H(3)
Avid	abamectin	H(7)	H(5)	H(5)	H(7)	H(7)
Azatin	azadarachtin	I	S	S	S	S
B-Nine	daminozide	S	S	S	S	?
Bayleton	triadimefon	S	S	S	?	S
Baygon*	propoxur	H(60)	H(14)	H(42)	H	H
Basamid	dazomet	S	S	S	S	S
Benlate, S	benomyl	S	H(14)	H(14)	S	H
Benlate, DR	benomyl	S	H(14)	H(14)	S	I
Botran	DCNA	S	S	S	S	S
Bravo	Chlorothalonil	I(7)	S	S	S	S
Captan	captan	S	S	S	S	S

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Trade Name application ²	Common name	<i>Encarsia Aphidius</i>	<i>Persimilis (for Fallacis see sheet 201)</i>	<i>Cucumeris Hypoaspis³ Degenerans</i>	<i>Aphidoletes</i>	<i>Orius Harmonia Delphastus Dicyphus</i>
Citation	cyromazine	S	S	S	H	I(7)
Copper	copper	I(7)	S	S	S	S
Confirm	tebufenozide	?	I	I	I	I
Conserve	spinosad	H(7)	I	I	H	H
Cycozel	chlormequat	S	S	S	S	S
Cygon*	dimethoate	H(60)	H(60)	H(60)	H(14)	H
Daconil	chlorothalonil	S	S	I	S	S
DDVP F	dichlorvos	H(7)	H(3)	H(3)	H(3)	H(7)
Decis, S*	deltamethrin	H(56)	H(56)	H(56)	H(56)	H(56)
Derris	rotenone	H(42)	H	H	H(14)	H
Diazinon*	diazinon	H(42)	I(7)	H(21)	H(42)	I
Dibrom F	naled	H(7)	H(3)	H(3)	H(7)	H(3)
Dimilin	diflubenzuron	S	S	S	S	S
Dipel /Foray	<i>Btk</i>	S	S	S	I	S
Dursban*	chlorpyrifos	H(28)	H(3)	H(14)	H(28)	H(28)
Dynomite*	pyridaben	H(21)	H (14)	H (14)	H(21)	H(21)
Dithane	maneb	I	S	S	I	H
Endeavor	pymetrozine	I	S	S	I	I (7) Orius
Enstar	kinoprene	I	S	S	S	S
Epsom Salts	Mg S04	S	S	S	S	S
Exotherm	chlorothalonil	I(7)	S	S	S	S
Floramite	bifenazate	?	I (7)	I (7)	S	S
Formaldehyde	formaldehyde	H	H	H	H	H
Fungaflor	imazalil	S	H(3)	S	H(3)	S
Funginex	triforine	S	I	S	I	S
Gardona*	tetrachlorviniphs	H(56)	I	H(42)	H(42)	H
Impower	imidacloprid	H(14)	H (14)	H(14)	H(14)	H(21)
Intercept (DR)	imidacloprid	S	I	H Hypo.	I	I(7)
Karathane	dinocap	H(7)	S	I	H(7)	I
Kelthane*	dicofol	H(7)	I(14)	H(30)	H(4)	I
Kumulus	sulphur	H(7)	I(7)	I(7)	I	I
Lannate*	methomyl	H(48)	H(21)	H(42)	H(56)	H(56)
Lindan*	lindane	H(56)	H(42)	H(42)	H(56)	H
Lorsban*	chlorpyrifos-methyl	H(42)	H(7)	H(42)	H(7)	H
Magnesium-sulphate	use only a 0.25% solution	S	S	S	S	S
Malathion*	malathion	H(56)	I(7)	H(56)	I(20)	H
Manzate 200	mancozeb	I	I	S	S	S
Manzate	maneb	S	S	S	S	S

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Trade Name	Common	<i>Encarsia</i>	<i>Persimilis</i>	<i>Cucumeris</i>	<i>Aphidoletes</i>	<i>Orius</i>
Application	name	<i>Aphidius</i>		<i>Hypoaspis</i> ³		<i>Harmonia</i>
				<i>Degenerans</i>		<i>Delphastus</i>
						<i>Dicyphus</i>
Meltatox	dodemorph- acetate	S(7)	S	I(7)	I	I
M-Systox-R*	oxydemeton					
	methyl	H(56)	H(7)	H	H	H
Micro-Niasul	sulphur	H(7)	I	I	I	I
Mitac*	amitraz	H(21)	H(21)	H(21)	H(14)	I(21)
Morestan	oxythioquinox	I	H(14)	H(14)	I	I
Nicotine F	nicotine sulfate	I(7)	H(7)	H(7)	H(1)	H
Monitor*	methamidophos	H(28)	H(56)	H(20)	H(21)	H(21)
Nova	mycobutanil	I	I	I	I	S
Nimrod	bupirimate	S	I(4)	S	S	I(0)
Oil	refined oils	H(0)	H(0)	H(0)	H(0)	H(0)
Omite	propargite	I(7)		H	I	I
Orthene*	acephate	H(56)	H(21)	H(21)	H(56)	H
Parathion F*	parathion	H(56)	I(5)	H(42)	H(56)	H
Pentac*	dienochlor	H(30)	I(14)	H(21)	S	?
Phosdrin	mevinphos	H(7)	I(7)	H(7)	H(7)	H
Pirliss	pirimicarb	I(7)	I	I	I(21)	I(3)
PlantFume*	sulfotep	H(70)	H(70)	H(70)	H(70)	H
Previcur	Propamocarb	S	S	S	S	S
Pristine	Azoxystrobin	S	S	S	S	S
Endeavor	pymetrozine	S	S	S	S	I
Pyrethrum	pyrethrins	H(7)	H(7)	H(7)	H(7)	I
Ridomil	metalaxyl	S	I	I	S	?
Rovral	iprodione	S	S	S	S	S
Rubigan	fenarimol	S	S	S	S	S
Sevin*	carbaryl	H (28)	H(14)	H(30)	H(30)	H
Success	spinosad	H (7)	S	S	I (7)	I (3)
Sulfur F	sulphur	H(7) I	S I(7)	I(7)	II	I I
Sulfur	sulphur	H(49)	H(21)	I(7)	H(49)	H
Temik*	aldicarb			H(21)		
Thiodan	endosulfan	H(7)	H(14)	H(7)	H(14)	H (14)
Thiram	thiram	I(14)	I(2)	I(2)	I(2)	I
Trumpet	bendiocarb	H(21)	H(21)	H(21)	H(21)	H
Trounce	Fatty acids+					
	Pyrethrin	I(7)	I	I	I(7)	I(7)
Vendex	fenbutatinoxide	S	I	S	S	S
Vydate*	oxamyl	H(56)	H(56)	H(56)	H(56)	H(56)
Zineb	zineb	S	S	S	I	I

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1. H(3)=harmful for # days, I=intermediate, some survival and reproduction, low residual effect.
S=safe or negligible effect, ?=no data, presume toxic.
2. Applications are all foliar sprays unless indicated as F=fumigant, FS=floor spray, or DR=drench
3. Spray will affect foliage-inhabiting *Cucumberis* more than the soil dwelling *Hypoaspis*.
Drenches with nonsystemic pesticides will affect *Hypoaspis* more than *Cucumberis*.

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