

INSECTICIDE EFFECTIVENESS

Most insecticides are not equally effective against all groups of insects. The following table categorizes the insecticides that are registered for use on vegetable crops on the basis of general effectiveness against broad groups of insects (for example, effectiveness against beetles or aphids, F = fair, G = good), relative length of residual activity, estimated mammalian toxicity, etc. These generalities will not hold true under all conditions (such as particular host crops or pests, weather conditions, soil conditions, etc.) but they should help the grower choose materials. Materials listed with a "dash" under effectiveness are ineffective or there was no data available (presumed to be ineffective).

General Insecticide Effectiveness

Common Name	Treatment Type	Aphids	Leaf-hoppers	Plant Bugs	Thrips	Caterpillars	Beetles	Root Maggots	Residual Activity	Mammalian Toxicity	Bee Toxicity ¹	Runoff/Leaching Potential ²	Restricted Use Pesticide	Comments
abamectin (<i>Agri-Mek</i>)	foliar spray	—	—	—	—	—	G	—	moderate	low	HT	L/S	yes	effective on mites and leafminers
acephate (<i>Orthene Acephate UP</i>)	foliar spray	G	G	G	G	G	F	—	long	low	HT	S/S	no	—
acetamiprid (<i>Assail</i>)	foliar spray	G	F	G	G	-	G	-	moderate	low	MT	-	no	
<i>Bacillus thuringiensis</i> <i>kurstaki</i> (<i>Agree, Biobit, Dipel, Javelin, Lepinox Xentari</i>)	foliar spray	—	—	—	—	G	—	—	short	none	NT	—	no	biological insecticide, good selective treatment
<i>Bacillus thuringiensis</i> <i>tenebrionis</i> (<i>Novodor</i>)	foliar spray	—	—	—	—	—	—	—	short	none	NT	—	no	small Colorado potato beetle larvae only
Bifenthrin (<i>Capture, Brigade, Bifenture</i>)	foliar spray	F	G	G	G	G	G	---	Moderate	Moderate	HT		yes	
carbaryl (<i>Sevin</i>)	foliar spray	—	G	G	G	G	G	—	short	low	HT	M/S	no	may cause aphid build-up
carbofuran (<i>Furadan</i>)	foliar spray	F	G	G	G	—	G	—	very long	very high oral, low dermal	HT	S/L	yes	
chlorpyrifos (<i>Lorsban</i>)	soil treatment, foliar spray	—	—	—	—	G	—	G	moderate	moderate oral, low dermal	HT	L/S	no	—
clothianidin (<i>Poncho, Clutch</i>)	seed treatment foliar spray	-	-	-	-	-	G	G	moderate	low	LT	-	No	commercial seed treatment
cyfluthrin (<i>Baythroid</i>)	foliar spray	F	G	G	G	G	G	—	moderate	low	HT	L/S	yes	—
Cyhalothrin (<i>Warrior, Proaxis, Lambda-Cy</i>)	foliar spray	F	G	G	G	G	G	—	moderate	low	HT	S/L	yes	—
cypermethrin (<i>Ammo, Mustang, UP-Cyde</i>)	foliar spray	—	G	G	G	G	G	—	moderate	moderate	HT	L/XS	yes	—

1. HT=HIGHLY TOXIC. This group includes materials that kill bees on contact during application and for one or more days after treatment. Bees should be moved from the area if highly toxic materials are used on plants the bees are visiting.

MT= MODERATELY TOXIC. These materials can be used with limited danger to bees if not applied over bees in the field or the hives. Correct dosage, timing and method of application are essential.

NT=RELATIVELY NONTOXIC. Materials in this group can be used with few precautions and a minimum of injury to bees.

2. Xs = extra small, S= small, M= medium, L = Large. These leaching/runoff potential ratings are from the NRCS WIN-PST Pesticide Properties Database at <http://www.wcc.nrcs.usda.gov/pestmgmt>

General Insecticide Effectiveness (continued)

Common Name	Treatment Type	Aphids	Leaf-hoppers	Plant Bugs	Thrips	Caterpillars	Beetles	Root Maggots	Residual Activity	Mammalian Toxicity	Bee Toxicity ¹	Runoff/Leaching Potential ²	Restricted Use Pesticide	Comments
cyromazine (<i>Trigard</i>)	foliar spray for leaf miners	—	—	—	—	—	—	—	moderate	low	—	M/L	yes	insect growth regulator
diazinon (<i>Diazinon</i>)	foliar spray, soil treatment	G	G	—	G	G	G	F	moderate	moderate	HT	L/S	no	—
dicofol (<i>Kelthane</i>)	foliar spray	—	—	—	—	—	—	—	short	low	LT	L/XS	no	specific miticide
deltamethrin (<i>Decis</i>)	foliar spray	G	F	G	F	--	G	--	moderate	low	HT	--	no	--
dinotefuran (<i>Venom</i>)	foliar spray or soil treatment	G	F	G	F	--	G	--	moderate	low	MT	--	no	--
dimethoate (<i>Cygon</i>)	foliar spray	G	G	G	G	—	—	—	moderate	moderate	HT	S/M	no	good selective insecticide, miticide
disulfoton (<i>Di-Syston</i>)	soil systemic or foliar spray	G	G	—	G	—	G	—	very long	very high	MT	M/S	yes	—
endosulfan	foliar spray	G	G	G	—	G	G	—	moderate	high	MT	L/XS	no	—
esfenvalerate (<i>Asana</i>)	foliar spary	F	G	G	G	G	G	—	moderate	low	HT	M/S	yes	—
ethoprop (<i>Mocap</i>)	soil treatment	—	—	—	—	G	G	G	long	high	MT	M/L	yes	good nematicide
flonicamid (<i>Beleaf</i>)	Foliar spray	G	—	G	—	—	—	—	moderate	low	LT	—	No	—
imidacloprid (<i>Admire, Provado, Nuprid, Gaucho, Genesis</i>)	foliar spray or in-furrow	G	F	G	F	—	G	—	long	low	MT	unknown	no	—
indoxacarb (<i>Avaunt</i>)	foliar spray	—	—	—	—	G	—	—	moderate	low	—	—	—	Helps conserve beneficials
malathion	foliar spray	G	G	G	G	G	G	—	short	low	MT	S/S	no	—
metaldehyde	bait	—	—	—	—	—	—	—	moderate	moderate	LT	M/S	no	effective for controlling slugs and snails
methamidophos (<i>Monitor</i>)	foliar spray	G	G	G	G	G	G	—	long	high	—	S/M	yes	—
methomyl (<i>Lannate</i>)	foliar spray	G	G	G	G	G	F	—	moderate	high oral, low dermal	HT	M/L	yes (except soluble package)	—
methoxyfenozide (<i>Intrepid</i>)	foliar spray	—	—	—	—	G	—	—	Moderate	Low	LT	—	no	—
naled (<i>Dibrom</i>)	foliar spray	G	G	G	—	G	F	—	short	moderate	—	S/S	no	good miticide
novaluron (<i>Rimon</i>)	foliar spray	-	-	-	-	G	G	-	Short	low	NT	unknown	no	small larvae only – a molting disruptor

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Oxamyl (<i>Vydate</i>)	foliar spray	G	G	—	—	—	G	—	moderate	high oral, low dermal	MT	S/S	yes	good miticide & nematicide; good for leafminers
oxydemetonmethyl (<i>Meta-Systox R</i>)	foliar spray	G	G	G	F	—	—	—	moderate	high oral, moderate dermal	MT	S/L	yes	good miticide, good selective insecticide
permethrin (<i>Ambush, Pounce, Perm-Up</i>)	foliar spray	F	G	G	G	G	G	G	long	low	HT	L/XS	yes	—
phorate (<i>Thimet</i>)	soil systemic	G	G	—	G	G	G	—	very long	very high	MT	L/S	yes	—
phosmet (<i>Imidan</i>)	foliar spray	G	G	G	—	—	—	G	moderate	moderate oral, low dermal	HT	M/S	no	—
piperonyl butoxide (<i>Butacide, PBO-8</i>)	foliar spray	—	—	—	—	—	—	—	short	none	NT	—	no	not directly toxic, blocks some resistance mechanisms
rotenone (<i>Rotenox, Rotacide</i>)	foliar spray	G	—	—	—	G	G	—	short	moderate oral, low dermal	NT	—	no	excellent for resistant Colorado potato beetles
spinetoram (<i>Radiant</i>)	foliar spray	-	-	-	G	G	G	-	long	low	MT	---	no	
spinosad (<i>SpinTor, Entrust</i>)	foliar spray	-	-	-	G	G	G	-	moderate	low	MT	low	no	-
spiromesifin (<i>Oberon</i>)	foliar spray	--	--	--	--	--	--	--	moderate	low	LT	--	no	miticide
pyriproxifen	foliar spray	--	--	--	--	--	--	--	moderate	low	LT	--	no	action on whiteflies
tefluthrin (<i>Force</i>)	soil treatment	—	—	—	—	G	G	—	long	low	—	low	no	—
terbufos (<i>Counter</i>)	soil treatment	—	—	—	—	—	G	G	long	very high	MT	M/S	yes	good nematicide
thiodicarb (Larvin)	foliar spray	—	F	F	—	G	G	—	short	moderate oral, low dermal	HT	M/S	no	—
thiamethoxam (<i>Actara, Cruiser, Platinum</i>)	foliar spray soil treatment or seed treatment	G	G	G	—	—	G	—	long	low	MT	unknown	no	—

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