

**TABLE 1**

<b>Insect or Mite Pest</b>	<b>Pest Control Material Common Name</b>	<b>Pest Control Material Trade Name(s)</b>	<b>Restricted Entry Interval (REI)</b>	<b>Mode of Action</b>
<b>APHIDS</b>	Abamectin	Avid	12 hours	GABA <sup>1</sup> chloride channel activator
	Acephate	Orthene/Precise	24/12 hours	Acetylcholine esterase inhibitor
	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Beauveria bassiana</i>	BotaniGard/Naturalis	4 hours	
	Bifenazate + Abamectin	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride channel activator
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Clarified hydrophobic extract of neem oil	Triact	4 hours	Suffocation or membrane disruptor
	Cyantraniliprole	Mainspring	4 hours	Selective activation of ryanodine receptors
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Flonicamid	Aria	12 hours	Selective feeding blocker/blocks action of potassium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	<i>Isaria fumosoroseus</i>	NoFly/Preferal	4 hours	
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	Methiocarb	MesuroI	24 hours	Acetylcholine esterase inhibitor
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
Pymetrozine	Endeavor	12 hours	Selective feeding blocker	
Pyrethrins	Pyreth-It/Pyrethrum	12 hours	Prolong opening of sodium channels	
Pyrifluquinazon	Rycar	12 hours	Unknown mode of action	
Spinetoram + sulfoxaflor	XXpire	12 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator + nicotinic acetylcholine receptor disruptor	
Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor	
Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor	
Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor	
<b>BROAD MITE</b>	Abamectin	Avid	12 hours	GABA chloride channel activator
	Bifenazate +	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride

	Abamectin			channel activator
	Chlorfenapyr	Pylon	12 hours	Oxidative phosphorylation uncoupler
	Fenpyroximate	Akari	12 hours	Mitochondria electron transport inhibitor
	Pyridaben	Sanmite	12 hours	Mitochondria electron transport inhibitor
	Spiromesifen	Judo	12 hours	Lipid biosynthesis inhibitor
<b>CATERPILLARS</b>	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Bacillus thuringiensis</i> subsp. <i>kurstaki</i>	Dipel	4 hours	Midgut membrane disruptor
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Chlorfenapyr	Pylon	12 hours	Oxidative phosphorylation uncoupler
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Cyantraniliprole	Mainspring	4 hours	Selective activation of ryanodine receptors
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pyrethrins	Pyreth-It/Pyrethrum	12 hours	Prolong opening of sodium channels
	Pyridalyl	Overture	12 hours	Unknown mode of action
	Methoxyfenozide	Intrepid	4 hours	Ecdysone agonist (mimics action of molting hormone)
	Novaluron	Pedestal	12 hours	Chitin synthesis inhibitor
	Spinetoram + sulfoxaflor	XXpire	12 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator + nicotinic acetylcholine receptor disruptor
	Spinosad	Conserve	4 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator
	Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor
<b>CYCLAMEN MITE</b>	Abamectin	Avid	12 hours	GABA chloride channel activator
	Bifenazate + Abamectin	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride channel activator
	Chlorfenapyr	Pylon	12 hours	Oxidative phosphorylation uncoupler
	Fenpyroximate	Akari	12 hours	Mitochondria electron transport inhibitor
	Spiromesifen	Judo	12 hours	Lipid biosynthesis inhibitor
<b>FUNGUS GNAT LARVAE</b>	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Bacillus thuringiensis</i> subsp. <i>israelensis</i>	Gnatrol	4 hours	Midgut membrane disruptor
	Chlorfenapyr	Pylon	12 hours	Oxidative phosphorylation uncoupler
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Cyromazine	Citation	12 hours	Chitin synthesis inhibitor
	Diflubenzuron	Adept	12 hours	Chitin synthesis inhibitor

	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	Pyriproxyfen	Distance/Fulcrum	12 hours	Juvenile hormone mimic
	<i>Steinernema feltiae</i>	Nemasys, NemaShield, Scanmask, and Entonem		
	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
<b>FUNGUS GNAT ADULTS</b>	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
<b>LEAFHOPPERS</b>	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Beauveria bassiana</i>	BotainGard/Naturalis	4 hours	
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Buprofezin	Talus	12 hours	Chitin synthesis inhibitor
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Clarified hydrophobic extract of neem oil	Triact	4 hours	Suffocation or membrane disruptor
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Flonicamid	Aria	12 hours	Selective feeding blocker/blocks action of potassium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	<i>Isaria fumosoroseus</i>	NoFly	4 hours	
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pyrethrins	Pyreth-It/Pyrethrum	12 hours	Prolong opening of sodium channels
	Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor
	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
	Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor
<b>LEAFMINERS</b>	Abamectin	Avid	12 hours	GABA chloride channel activator
	Acephate	Orthene/Precise	24 hours	Acetylcholine esterase inhibitor
	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	Bifenazate +	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride

	abamectin			channel activator
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Cyantraniliprole	Mainspring	4 hours	Selective activation of ryanodine receptors
	Cyfluthrin + Imidacloprid	Discus	4 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Cyromazine	Citation	12 hours	Chitin synthesis inhibitor
	Diflubenzuron	Adept	12 hours	Chitin synthesis inhibitor
	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	<i>Isaria fumosorosea</i>	Preferal	4 hours	
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor
	Novaluron	Pedestal	12 hours	Chitin synthesis inhibitor
	Spinosad	Conserve	4 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator
	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
<b>MEALYBUGS</b>	Acephate	Orthene/Precise	24/12 hours	Acetylcholine esterase inhibitor
	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Beauveria bassiana</i>	BotaniGard/Naturalis	4 hours	
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Buprofezin	Talus	12 hours	Chitin synthesis inhibitor
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Clarified hydrophobic extract of neem oil	Triact	4 hours	Suffocation or membrane disruptor
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Flonicamid	Aria	12 hours	Selective feeding blocker/blocks action of potassium channels
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	<i>Isaria fumosoroseus</i>	NoFly/Preferal	4 hours	
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pyrifluquinazon	Rycar	12 hours	Unknown mode of action
	Spineotram + sulfoxaflo	XXpire		Nicotinic acetylcholine receptor agonist and GABA chloride channel activator + nicotinic acetylcholine receptor disruptor
	Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor

	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
	Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor
<b>PLANT BUGS</b>	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
<b>SCALES (HARD AND SOFT)<sup>a</sup></b>	Acephate	Orthene/Precise	24/12 hours	Acetylcholine esterase inhibitor
	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Buprofezin	Talus	12 hours	Chitin synthesis inhibitor
	Clarified hydrophobic extract of neem oil	Triact	4 hours	Suffocation or membrane disruptor
	Cyantraniliprole	Mainspring	4 hours	Selective activation of ryanodine receptors
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Flonicamid	Aria	12 hours	Selective feeding blocker/blocks action of potassium channels
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pyriproxyfen	Fulcrum	12 hours	Juvenile hormone mimic
	Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor
	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
	Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor
<b>SHORE FLY</b>	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Cyromazine	Citation	12 hours	Chitin synthesis inhibitor
	Diflubenzuron	Adept	12 hours	Chitin synthesis inhibitor
	Pyriproxyfen	Distance/Fulcrum	12 hours	Juvenile hormone mimic
	Spinosad	Conserve	4 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator
<b>SLUG AND SNAIL</b>	Iron phosphate	Sluggo	0 hours	Inhibits calcium metabolism
	Metaldehyde	Deadline	Refer to Label	Central nervous system toxin
	Methiocarb	Mesurool	24 hours	Acetylcholine esterase inhibitor
<b>SPIDER MITE (TWOSPOTTED)</b>	Abamectin	Avid	12 hours	GABA chloride channel activator
	Acequinocyl	Shuttle	12 hours	Mitochondria electron transport inhibitor
	Bifenazate	Floramite	4 hours	Mitochondria electron transport inhibitor
	Bifenazate + Abamectin	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride channel activator
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels

	Chlorfenapyr	Pylon	12 hours	Oxidative phosphorylation uncoupler
	Clarified hydrophobic extract of neem oil	Triact	4 hours	Suffocation or membrane disruptor
	Clofentezine	Ovation	12 hours	Growth and embryogenesis inhibitor
	Cyflumetofen	Sultan	12 hours	Mitochondria electron transport inhibitor
	Etoxazole	TetraSan	12 hours	Chitin synthesis inhibitor
	Fenazaquin	Magus	12 hours	Mitochondria electron transport inhibitor
	Fenbutatin-oxide (Hexakis)	ProMite	48 hours	Oxidative phosphorylation inhibitor
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Fenpyroximate	Akari	12 hours	Mitochondria electron transport inhibitor
	Hexythiazox	Hexygon	12 hours	Growth and embryogenesis inhibitor
	<i>Isaria fumosorosea</i>	Preferal	4 hours	
	<i>Metarhizium anisopliae</i>	Met52	4 hours	
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pyridaben	Sanmite	12 hours	Mitochondria electron transport inhibitor
	Spiromesifen	Judo	12 hours	Lipid biosynthesis inhibitor
	Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor
<b>THRIPS</b>	Abamectin	Avid	12 hours	GABA chloride channel activator
	Acephate	Orthene/Precise	24/12 hours	Acetylcholine esterase inhibitor
	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Beauveria bassiana</i>	BotaniGard/Naturalis	4 hours	
	Bifenazate + Abamectin	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride channel activator
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Chlorfenapyr	Pylon	12 hours	Oxidative phosphorylation uncoupler
	Chlorpyrifos	DuraGuard	24 hours	Acetylcholine esterase inhibitor
	Cyantraniliprole	Mainspring	4 hours	Selective activation of ryanodine receptors
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Flonicamid	Aria	12 hours	Selective feeding blocker/blocks action of potassium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
	<i>Isaria fumosoroseus</i>	NoFly/Preferal	4 hours	
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	<i>Metarhizium anisopliae</i>	Met52	4 hours	
	Methiocarb	Mesurol	24 hours	Acetylcholine esterase inhibitor
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor

	Novaluron	Pedestal	12 hours	Chitin synthesis inhibitor
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pyrethrins	Pyreth-It/Pyrethrum	12 hours	Prolong opening of sodium channels
	Pyridalyl	Overture	12 hours	Unknown mode of action
	Spinetoram + sulfoxaflor	XXpire	12 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator + nicotinic acetylcholine receptor disruptor
	Spinosad	Conserve	4 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator
	Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor
	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
	Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor
<b>WHITEFLIES</b>	Abamectin	Avid	12 hours	GABA chloride channel activator
	Acephate	Orthene/Precise	24/12 hours	Acetylcholine esterase inhibitor
	Acetamiprid	TriStar	12 hours	Nicotinic acetylcholine receptor disruptor
	Azadirachtin	Azatin/Ornazin/Molt-X/Azatrol <sup>2</sup>	4/12/4/4 hours	Ecdysone antagonist (inhibits action of molting hormone)
	<i>Beauveria bassiana</i>	BotaniGard/Naturalis	4 hours	
	Bifenthrin	Attain/Talstar	12 hours	Prolong opening of sodium channels
	Bifenazate + Abamectin	Sirocco	12 hours	Mitochondria electron transport inhibitor + GABA chloride channel activator
	Buprofezin	Talus	12 hours	Chitin synthesis inhibitor
	Clarified hydrophobic extract of neem oil	Triact	4 hours	Suffocation or membrane disruptor
	Cyantraniliprole	Mainspring	4 hours	Selective activation of ryanodine receptors
	Cyfluthrin	Decathlon	12 hours	Prolong opening of sodium channels
	Cyfluthrin + Imidacloprid	Discus	12 hours	Prolong opening of sodium channels + nicotinic acetylcholine receptor disruptor
	Diflubenzuron	Adept	12 hours	Chitin synthesis inhibitor
	Dinotefuran	Safari	12 hours	Nicotinic acetylcholine receptor disruptor
	Fenazaquin	Magus	12 hours	Mitochondria electron transport inhibitor
	Fenoxycarb	Preclude	12 hours	Juvenile hormone mimic
	Fenpropathrin	Tame	24 hours	Prolong opening of sodium channels
	Flonicamid	Aria	12 hours	Selective feeding blocker/blocks action of potassium channels
	Fluvalinate	Mavrik	12 hours	Prolong opening of sodium channels
	Imidacloprid	Marathon/Benefit/Mantra	12 hours	Nicotinic acetylcholine receptor disruptor
	<i>Isaria fumosoroseus</i>	NoFly/Preferal	4 hours	
	Kinoprene	Enstar	4 hours	Juvenile hormone mimic
	Mineral oil	Ultra-Pure Oil/SuffOil-X	4 hours	Suffocation or membrane disruptor
	Novaluron	Pedestal	12 hours	Chitin synthesis inhibitor
	Potassium salts of fatty acids	M-Pede	12 hours	Desiccation or membrane disruptor
	Pymetrozine	Endeavor	12 hours	Selective feeding blocker
	Pyrethrins	Pyreth-It/Pyrethrum	12 hours	Prolong opening of sodium channels

	Pyridaben	Sanmite	12 hours	Mitochondria electron transport inhibitor
	Pyrifluquinazon	Rycar	12 hours	Unknown mode of action
	Pyriproxyfen	Distance/Fulcrum	12 hours	Juvenile hormone mimic
	Spinetoram + sulfoxaflor	XXpire	12 hours	Nicotinic acetylcholine receptor agonist and GABA chloride channel activator + nicotinic acetylcholine receptor disruptor
	Spiromesifen	Judo	12 hours	Lipid biosynthesis inhibitor
	Spirotetramat	Kontos	24 hours	Lipid biosynthesis inhibitor
	Thiamethoxam	Flagship	12 hours	Nicotinic acetylcholine receptor disruptor
	Tolfenpyrad	Hachi-Hachi	12 hours	Mitochondria electron transport inhibitor

<sup>a</sup> Refer to label for specific scale species.

<sup>1</sup> GABA=Gamma-aminobutyric acid.

<sup>2</sup> Additional azadirachtin products include the following: AzaGuard, Aza-Direct, and AzaSol.

For more information contact Dr. Raymond A. Cloyd, Professor and Extension Specialist in Horticultural Entomology/Plant Protection at Kansas State University, Department of Entomology, 123 Waters Hall, Manhattan, KS 66506-4004  
Phone: (785) 532-4750; Email: rclloyd@ksu.edu

Updated: March 26, 2015