

Insecticides for Field Crops

Excerpted from the 2016 UNL Extension Guide for Weed, Disease and Insect Management
Available at <http://extensionpubs.unl.edu>

Insect pest management includes several approaches — cultural practices (planting dates, harvest dates, tillage), resistant varieties, biological control, and insecticides. Regular monitoring (scouting) of fields is important to identify which insects are present and at what density and to determine the potential economic impact of pest populations and whether control measures will be cost effective.

Additional information and publications on crop insect identification and integrated pest management (IPM) practices for Nebraska can be found on the Web at CropWatch at <http://cropwatch.unl.edu> and at the UNL Department of Entomology at <http://entomology.unl.edu>

Information in the following tables provides a summary of label information for common insecticides for the control of insect and mite pests of field corn, soybeans, and wheat. Because of space considerations, all label information is not included. Always read and follow label instructions.

Insecticide Resistance Management

A key strategy to delay development of insecticide resistance is to avoid repeated applications of products with the same mode of action. See the table below on mode of action of common insecticides labeled for Nebraska field crops. This table includes a key to the mode of action code numbers used in the insecticide tables. It is based on information from the international Insecticide Resistance Action Committee (IRAC). A table showing modes of action of all commercially available insecticides is available at <http://www.irac-online.org/documents/moa-classification/?ext=pdf>.

Insecticide Mode of Action

Code Number*	Chemical Sub-group	Mode of Action	Site of Action
1A	carbamates	acetylcholine esterase inhibitors	nerve action
1B	organophosphate	acetylcholine esterase inhibitors	nerve action
2B	phenylpyrazoles (fiproles)	GABA-gated chloride channel antagonist	nerve action
3A	pyrethroids, pyrethrins	sodium channel modulators	nerve action
4A	neonicotinoids	nicotinic acetylcholine receptor agonists	nerve action
4C	sulfoxaflor	nicotinic acetylcholine receptor agonists	nerve action
4D	butenolides	nicotinic acetylcholine receptor agonists	nerve action
5	spinosyns	nicotinic acetylcholine receptor allosteric activators	nerve action
10A	clofentezine, hexythiazox	mite growth inhibitors	growth regulation
10B	etoxazole	mite growth inhibitors	growth regulation
11	<i>Bacillus thuringiensis</i> and the insecticidal proteins they produce	microbial disruptors of insect midgut membranes	insect midgut
12C	propargite	inhibitors of mitochondrial ATP synthase	energy metabolism
15	benzoylureas	inhibitors of chitin biosynthesis	growth regulation
18	diacylhydrazines	ecdysone receptor agonists	growth regulation
22A	indoxacarb	voltage-dependent sodium channel blockers	nerve action
23	tetronic and tetramic acid derivatives	inhibitors of acetyl CoA carboxylase	lipid synthesis, growth regulation
28	diamides	ryanodine receptor modulators	nerve and muscle action

*Based on international Insecticide Resistance Action Committee (IRAC) information on the Web at <http://www.irac-online.org>.

Alfalfa

Forage or Hay Insecticides

Insecticide	Insects with Chewing Mouthparts											Insects with Piercing-Sucking Mouthparts						
	Alfalfa Caterpillar	Army Cutworm	Alfalfa Webworm	Alfalfa Weevil (Larvae)	Alfalfa Weevil (Adult)	Black Cutworm	Blister Beetle	Clover Root Curculio (Adult)	Garden Webworm	Grasshoppers	Green Cloverworm	Variagated Cutworm	Blue Alfalfa Aphid	Cowpea Aphid	Pea Aphid	Plant Bug	Potato Leafhopper	Spotted Alfalfa Aphid
Agree™ WG	X																	
Ambush®	X	X	X	X		X			X		X	X	X		X	X	X	X
Ambush® 25W	X	X	X	X		X			X		X	X	X		X	X	X	X
Baythroid® XL	X	X	X	X		X				X	X	X	X	X	X	X	X	
Besiege®	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Belt SC	X	X	X			X					X	X	X	X		X	X	X
BT sulfur 15-50 dust	X																	
Carbaryl 4L	X	X	X	X		X	X		X		X	X					X	
Cobalt™	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Cobalt™ Advanced	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
Coragen		X																
CoStar®	X										X							
Cygon™ LV										X			X	X	X	X	X	X
Declare®	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dimethoate 2.67				X						X			X	X	X	X	X	X
Dimethoate 400				X						X			X	X	X	X	X	X
Fyfanon® ULV Ag	X			X						X								
Imidan® 70W				X	X					X					X	X	X	
Intrepid® 2F	X		X						X									
Javelin® WG	X	X				X					X	X						
Lannate® LV	X			X								X	X	X				X
Lepinox® WDG	X		X						X									
Lorsban® 4E	X	X	X	X	X	X				X		X	X	X	X	X	X	
Lorsban® 75WG				X	X					X			X		X	X	X	
Lorsban® Advanced	X	X	X	X	X	X				X		X	X	X	X	X	X	
Malathion 57EC				X						X					X		X	X
Malathion 8 Aquamul										X			X	X	X		X	X
Malathion 8E				X						X			X	X	X		X	X
Malathion ULV	X			X						X								
Mustang Maxx®	X	X	X	X		X			X	X	X	X	X		X	X	X	X
Neemix® 4.5																	X	
Nufos® 4E	X		X	X	X					X			X		X	X	X	
Paradigm™	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Permethrin	X	X	X	X		X			X		X	X	X		X	X	X	X
Pounce™ 25WP	X	X	X	X		X			X		X	X	X		X	X	X	X
Proaxis™	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Renounce® 20WP	X	X		X		X				X		X	X	X	X	X	X	
Respect®	X	X	X	X		X			X	X	X	X	X		X	X	X	X
Seduce® Insect Bait		X				X						X						
Sevin® 80S	X	X	X	X		X	X		X		X	X					X	
Silencer®	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Silencer® VC	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sivanto 200 SC													X	X	X	X	X	
Stallion™	X	X	X	X		X			X	X	X	X	X		X	X	X	X
Steward® EC	X			X													X	
Tombstone™	X	X		X		X				X	X	X	X	X	X	X	X	
Tombstone™ Helios	X	X		X		X				X	X	X	X	X	X	X	X	
Troubadour 2F	X	X	X						X									
Voliam Xpress®	X	X	X	X		X	X	X	X	X	X		X	X	X	X	X	X
Vulcan™	X	X	X	X	X	X				X		X	X	X	X	X	X	X
Warhawk®	X	X	X	X	X	X				X		X	X	X	X	X	X	
Warrior with Zeon Technology®	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X
Warrior II with Zeon Technology®	X	X	X	X		X	X	X	X	X	X	X	X	X	X	X	X	X

X = insecticide labeled for control against this pest.

Alfalfa

Forage or Hay Insecticides

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Agree WG <i>Bacillus thuringiensis aizawai</i>	11	Alfalfa caterpillar	0.5-2.0 lb/A	REI is 4 hours. Use of a contact insecticide along with <i>Bt</i> product is recommended if 4th and 5th instar larvae are present.
Ambush** permethrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid, spotted alfalfa aphid, potato leafhopper 2. Plant bugs, alfalfa weevil larvae	1. 3.2-12.8 oz/A 2. 6.4-12.8 oz/A	REI is 12 hours. PHI is 14 days when rates greater than 0.1 lb active ingredient are used. Do not apply to mixed stands with intentionally grown forage grasses. Do not apply more than 0.2 lb active ingredient per cutting. Avoid application when bees are actively foraging.
Ambush 25 W** permethrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid, spotted alfalfa aphid, potato leafhopper 2. Plant bugs, alfalfa weevil larvae	1. 3.2-12.8 oz/A 2. 6.4-12.8 oz/A	REI is 12 hours. PHI is 14 days when rates greater than 0.1 lb active ingredient are used. Do not apply to mixed stands with intentionally grown forage grasses. Do not apply more than 0.2 lb active ingredient per cutting. Avoid application when bees are actively foraging.
Baythroid XL** beta-cyfluthrin	3A	1. Black cutworm, variegated cutworm, army cutworm, green cloverworm, potato leafhopper 2. Alfalfa caterpillar, alfalfa webworm, plant bugs, alfalfa weevil larvae 3. Grasshoppers 4. Blue alfalfa aphid, cowpea aphid, pea aphid	1. 0.8-1.6 oz/A 2. 1.6-2.8 oz/A 3. 2.0-2.8 oz/A 4. 2.8 oz/A	REI is 12 hours. PHI is 7 days. Maximum of 5.6 oz per cutting, and 22.4 oz/A for crop season. Allow at least 5 days between applications. Do not exceed 0.35 lb of active ingredient per season for cyfluthrin + beta-cyfluthrin products.
Belt SC Flubendiamide	28	Alfalfa caterpillar, armyworm, alfalfa looper, alfalfa webworm, cutworms, green cloverworm, loopers	2.0-4.0 fl. oz./acre	REI = 12 hours. PHI = 0 days Do not apply more than 4 fl. oz./cutting. Do not apply within 21 days of previous treatment. Do not apply more than 12 fl. oz./acre/year. May be applied through some irrigation systems. Minimum of 10 gpa by ground, 2 gpa by aerial application
Besiege** Lambda-cyhalothrin + chlorantraniliprole	3A, 28	1. Alfalfa caterpillar, cutworms, green cloverworm, leafhoppers, loopers, webworms and threecornered alfalfa hoppers 2. Alfalfa weevil, aphids, armyworms, bean leaf beetle adults, blister beetles, grasshoppers, weevils, stinkbugs, clover root curculio (adult), stink bugs and various adult beetles.	1. 5-8 fl oz/A 2. 6-10 fl oz/A	REI is 24 hours. PHI is 1 day for forage, 7 days for hay. Make applications when bees are not foraging by applying during early morning or evening hours. Remove bee shelters during and for 2-3 days following application. Do not exceed a total of 31 fl oz/A of Besiege or 0.12 lb/A active ingredient of lambda-cyhalothrin-containing products or 0.2 lb/A active ingredient of chlorantraniliprole-containing products per year. Do not apply more than 10 fl oz/A of Besiege per cutting, nor more than 1 application per cutting. Apply in a minimum of 5 GPA by air and 10 GPA by ground.

*REI = Restricted Entry Interval PHI = Preharvest Interval

**Restricted Use Insecticide

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
<i>BT</i> Sulfur 15-50 dust <i>Bacillus thuringiensis kurstaki</i>	11	Alfalfa caterpillar	1. 10.0-20.0 lb/A	REI is 24 hours. Use of a contact insecticide along with a <i>Bt</i> product is recommended if 4th and 5th instar larvae are present. Do not apply materials containing sulfur just prior to or during periods of excessively high temperatures or within 2 weeks of an oil spray.
Carbaryl 4L carbaryl	1A	1. Alfalfa weevil larvae 2. Blister beetles 3. Alfalfa caterpillar, green cloverworm, potato leafhopper 4. Black cutworm, variegated cutworm, army cutworm, alfalfa webworm, garden webworm	1. 24.0 oz/A 2. 16.0-32.0 oz/A 3. 32.0 oz/A 4. 32.0-48.0 oz/A	REI is 12 hours. PHI is 7 days. Do not apply more than once per cutting. Do not apply this product to crops or weeds in bloom.
Cobalt** chlorpyrifos + gamma-cyhalothrin	1B, 3A	1. Grasshoppers, potato leafhopper 2. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid 3. Cowpea aphid, plant bugs, alfalfa weevil adult, alfalfa weevil larvae, blister beetle, clover root curculios adult	1. 7.0-13.0 oz/A 2. 13.0-26.0 oz/A 3. 19.0-38.0 oz/A	REI is 24 hours. PHI is 7 days for less than 13.0 oz, 14 days for 13.0-26.0 oz, and 21 days for more than 26.0 oz. Do not apply if nearby bees are clustered outside hives and are actively foraging in the treated area. Do not irrigate within 24 hours of application. Do not exceed 0.06 lb of active ingredient per year for gamma cyhalothrin. Do not make a second application of a product containing chlorpyrifos within 10 days of first application.
Cobalt Advanced* chlorpyrifos + gamma-cyhalothrin	1B, 3A	1. Grasshoppers, potato leafhopper 2. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid 3. Cowpea aphid, plant bugs, alfalfa weevil adult, alfalfa weevil larvae, blister beetle, clover root curculios adult	1. 6.0-13.0 oz/A 2. 11.0-26.0 oz/A 3. 16.0-38.0 oz/A	REI is 24 hours. PHI is 7 days for less than 13.0 oz, 14 days for 13.0-26.0 oz, and 21 days for more than 26.0 oz. Do not apply if nearby bees are clustered outside hives and are actively foraging in the treated area. Do not irrigate within 24 hours of application. Do not exceed 0.06 lb of active ingredient per year for gamma cyhalothrin. Do not make a second application of a product containing chlorpyrifos within 10 days of first application.
Coragen Chlorantraniliprole	28	Armyworms	3.5-5.0 fl.oz./acre	REI = 4 hours. PHI = 0 days Make no more than 4 applications/acre/crop Do not apply more than once/cutting. Do not apply more than 15.4 oz.acre of Coragen or 0.2 lbs. active ingredient of chlorantraniliprole containing products per acre per crop
Costar <i>Bacillus thuringiensis kurstaki</i>	11	Alfalfa caterpillar, green cloverworm	0.25-1.5 lb/A	REI is 4 hours. Use of a contact insecticide along with a <i>Bt</i> product is recommended if 4th and 5th instar larvae are present.
Cygon LV Dimethoate	1B	Aphids, grasshoppers, leafhoppers, lygus bugs. Reduction of alfalfa weevil larvae	9.6-19.1 fl oz/A	REI is 48 hours. PHI is 10 days. Do not apply to alfalfa in bloom. Do not apply if bees are visiting areas to be treated when crop or weeds are in bloom. Make only one application per cutting. Make no more than 3 applications per year.

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**Restricted Use Insecticide

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Declare** Gamma-cyhalothrin	3A	1. Army cutworm 2. Alfalfa caterpillar, cutworms, green cloverworm, leafhoppers, loopers, threecornered alfalfa hopper, webworms 3. Alfalfa weevil, armyworm, bean leaf beetle, blister beetles, blue alfalfa aphid, clover leaf weevils, clover root curculios, cowpea aphid, grasshoppers, pea aphid, plant bugs (including Lygus), spotted alfalfa aphid, stinkbugs	1. 0.51-0.77 fl oz/A 2. 0.77-1.28 fl oz/A 3. 1.02-1.54 fl oz/A	REI is 24 hours. PHI is 1 day for forage, 7 days for hay. Apply only to fields planted to pure stands of alfalfa. Apply in a minimum of 2 gpa by air and 10 gpa by ground. Use higher gallons per acre when foliage is dense and/or pest populations are high. Avoid application when bees are actively foraging by applying during early morning or evening hours. Avoid direct application to bee shelters. It may be advisable to remove bee shelters during and for up to 2-3 days following application. Do not apply more than 0.015 lb active ingredient (0.096 pt) per acre per cutting. Do not apply more than 0.06 lb active ingredient (0.038 pint) per acre per year. If both gamma-cyhalothrin and lambda-cyhalothrin products are used on a crop during the same growing season, refer to charts found on labels for maximum total annual allowance of cyhalothrin-containing products.
Dimethoate 2.67 dimethoate	1B	Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, potato leafhopper, alfalfa weevil adult, grasshoppers	12.0-20.0 oz/A	REI is 48 hours. PHI is 10 days. Do not apply if bees are actively visiting the field or if weeds or alfalfa are in bloom. Maximum of 0.5 lb active ingredient per year. Only one application of 2.67 EC per year is allowed.
Dimethoate 400 dimethoate	1B	Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, potato leafhopper, alfalfa weevil adult, grasshoppers	8.0-16.0 oz/A	REI is 48 hours. PHI is 10 days. Do not apply if bees are actively visiting the field or if weeds or alfalfa are in bloom. Maximum of 0.5 lb active ingredient per year.
Fyfanon ULV AG Malathion	1B	Alfalfa caterpillars, western yellow striped armyworm, alfalfa weevil larvae, beet armyworms, grasshoppers	8 fl oz/A	REI is 12 hours. PHI is 0 days. Do not apply to alfalfa in bloom. For beet armyworm and alfalfa caterpillar control, apply when caterpillars are small. For alfalfa weevil larvae, apply when day temperature is expected to be above 65°F. Maximum of 2 applications per cutting, with minimum of 14 days between applications.
Imidan 70 W phosmet	1B	Pea aphid, plant bugs, potato leafhopper, alfalfa weevil adult, alfalfa weevil larvae, grasshoppers	1.0-1.33 lb/A	REI is 5 days. PHI is 7 days. Do not apply more than once per cutting. Do not apply to alfalfa in bloom. Do not apply when bees are in the area. Do not use with latex- or pineolene-based adjuvants or any agricultural sticker or extender.
Intrepid 2F methoxyfenozide	18	Alfalfa caterpillar, alfalfa webworm, garden webworm	4.0-8.0 oz/A	REI is when dry. PHI is 7 days. No more than 1 application per cutting, 32.0 oz per year.

*REI = Restricted Entry Interval PHI = Preharvest Interval

**Restricted Use Insecticide

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Javelin WG <i>Bacillus thuringiensis kurstaki</i> strain SA-11	11	Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm	0.25-1.5 lb/A	REI is 4 hours. Use of a contact insecticide along with a <i>Bt</i> product is recommended if 4th and 5th instar larvae are present.
Lannate LV methomyl	1A	1. Variegated cutworm 2. Alfalfa caterpillar, blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid 3. Alfalfa weevil larvae	1. 12.0-48.0 oz/A 2. 24.0-48.0 oz/A 3. 48.0 oz/A	REI is 48 hours. PHI is 7 days. Do not apply to dormant or semi-dormant alfalfa when minimum daily temperature is less than 50°F. Do not apply more than 12.0 pints or 10 applications of product per acre per crop.
Lepinox WDG <i>Bacillus thuringiensis kurstaki</i> strain EG7826	11	Alfalfa caterpillar, alfalfa webworm, garden webworm	1.0-2.0 lb/A	REI is 12 hours. Use of a contact insecticide along with a <i>Bt</i> product is recommended if 4th and 5th instar larvae are present.
Lorsban 4E chlorpyrifos	1B	1. Potato leafhopper, grasshoppers 2. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, blue alfalfa aphid, cowpea aphid, pea aphid, plant bugs, alfalfa weevil adult, alfalfa weevil larvae 3. Alfalfa webworm	1. 8.0-16.0 oz/A 2. 16.0-32.0 oz/A 3. 24.0 oz/A	REI is 24 hours. PHI is 7 days for less than 8.0 oz, 14 days for 8.0-16.0 oz, and 21 days for more than 16.0 oz/A. Do not make a second application of a product containing chlorpyrifos within 10 days of first application. One application per cutting, no more than 4 applications per acre per crop. Do not apply if nearby bees are clustered outside hives and are actively foraging in the treated area.
Lorsban 75 WG chlorpyrifos	1B	1. Potato leafhopper, grasshoppers 2. Blue alfalfa aphid, pea aphid, plant bugs, alfalfa weevil adult, alfalfa weevil larvae	1. 0.33-0.67 lb/A 2. 0.67-1.33 lb/A	REI is 24 hours. PHI is 7 days for less than 0.33 lb, 14 days for 0.33-0.67 lb, and 21 days for more than 0.67 lb/A. Do not make a second application of a product containing chlorpyrifos within 10 days of first application. One application per cutting, no more than 4 applications per acre per crop. Do not apply if nearby bees are clustered outside hives and are actively foraging in the treated area.
Lorsban® Advanced chlorpyrifos	1B	1. Potato leafhopper, grasshoppers 2. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, blue alfalfa aphid, cowpea aphid, pea aphid, plant bugs, alfalfa weevil adult, alfalfa weevil larvae 3. Alfalfa webworm	1. 8.0-16.0 oz/A 2. 16.0-32.0 oz/A 3. 24.0 oz/A	REI is 24 hours. PHI is 7 days for less than 8.0 oz, 14 days for 8.0-16.0 oz, and 21 days for more than 16.0 oz/A. Do not make a second application of a product containing chlorpyrifos within 10 days of first application. One application per cutting, no more than 4 applications per acre per crop. Do not apply if nearby bees are clustered outside hives and are actively foraging in the treated area.
Malathion 57 EC malathion	1B	Pea aphid, spotted alfalfa aphid, potato leafhopper, alfalfa weevil larvae, grasshoppers	20.0-36.0 oz/A	REI is 12 hours. Apply to alfalfa in bloom only when bees are not working in the field.
Malathion 8 Aquamul malathion	1B	Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, potato leafhopper, grasshoppers	20-32 oz/A	REI is 12 hours. PHI is 7 days for rates greater than 24.0 oz/A. Apply to alfalfa in bloom only when bees are not working in the field.
Malathion 8E malathion	1B	Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, potato leafhopper, alfalfa weevil larvae, grasshoppers	16.0-24.0 oz/A	REI is 12 hours. PHI is 7 days for rates greater than 24.0 oz/A. Apply to alfalfa in bloom only when bees are not working in the field.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Malathion ULV malathion	1B	1. Alfalfa caterpillar, grasshoppers 2. Alfalfa weevil larvae	1. 8 oz/A 2. 16 oz/A	REI is 12 hours. PHI is 0 days for 8.0 oz/A rate and 10 days for 16.0 oz/A rate. Apply to alfalfa in bloom only when bees are not working in the field.
Mustang Maxx** zeta-cypermethrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid, spotted alfalfa aphid, potato leafhopper, alfalfa weevil larvae 2. Plant bugs, grasshoppers	1. 2.24-4.0 oz/A 2. 2.8-4.0 oz/A	REI is 12 hours. PHI is 3 days. Do not make applications less than 7 days apart. Do not apply more than 4.0 oz/A per cutting. Do not apply more than 12.0 oz/A per year.
Neemix 4.5 azadirachtin	U***	Potato leafhopper	7.0-16.0 oz/A	REI is 12 hours. Do not apply when weather conditions favor drift or likelihood of runoff is high.
Nufos 4E Chlorpyrifos	1B	1. Corn rootworm adults, grasshoppers, leafhoppers 2. Alfalfa caterpillar, alfalfa weevil adults and larvae, armyworms, blue alfalfa aphid, cowpea aphid, pea aphid, cutworms, plant bugs, (suppression of spotted alfalfa aphid)	1. 8-16 fl oz/A 2. 16-32 fl oz/A	REI is 24 hours. PHI is 7 days for 8.0 fl oz, 14 days for 16.0 fl oz, 21 days for more than 16.0 fl oz. Highly toxic to bees exposed to direct treatment on alfalfa. Do not apply if nearby bees are clustered outside of hives and bees are foraging in the treated areas. Do not flood irrigate within 24 hours following application of Nufos 4E to avoid contamination of irrigation tail waters. Do not make more than 4 applications per season of products containing chlorpyrifos, or apply such products more than once per cutting. Do not make a second application of a product containing chlorpyrifos within 10 days of first application.
Paradigm** lambda-cyhalothrin	3A	1. Alfalfa caterpillar, army cutworm, black cutworm, variegated cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curculio adult, grasshoppers	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A	REI is 24 hours. PHI is 1 day for forage and 7 days for hay harvest. Do not apply more than 3.84 oz/A per cutting or more than 15.36 oz/A per year. Do not apply when bees are actively foraging.
Permethrin** permethrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid, spotted alfalfa aphid 2. Plant bugs, potato leafhopper, alfalfa weevil larvae	1. 2.0-8.0 oz/A 2. 4.0-8.0 oz/A	REI is 12 hours. PHI is 14 days when rates greater than 0.1 lb active ingredient are used. Do not apply to mixed stands with intentionally grown forage grasses. Do not apply more than 0.2 lb active ingredient per cutting. Avoid application when bees are actively foraging.
Pounce 25WP** permethrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid, spotted alfalfa aphid 2. Plant bugs, potato leafhopper, alfalfa weevil larvae	1. 3.2-12.8 oz/A 2. 6.4-12.8 oz/A	REI is 12 hours. PHI is 14 days when rates greater than 0.1 lb active ingredient are used. Do not apply to mixed stands with intentionally grown forage grasses. Do not apply more than 0.2 lb active ingredient per cutting. Avoid application when bees are actively foraging.

*REI = Restricted Entry Interval PHI = Preharvest Interval

**Restricted Use Insecticide

***Unclassified

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Proaxis** gamma-cyhalothrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curculios adult	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A	REI is 24 hours. PHI is 1 day for forage and 7 days for hay. Do not apply more than 0.24 pt per cutting or 0.96 pt/A per year. Apply only to fields planted to pure stands of alfalfa. Avoid application when bees are actively foraging.
Renounce®20WP** cyfluthrin	3A	1. Black cutworm, variegated cutworm, army cutworm 2. Alfalfa caterpillar, alfalfa weevil larvae, plant bugs 3. Grasshoppers 4. Blue alfalfa aphid, cowpea aphid, pea aphid	1. 1.0-2.0 oz/A 2. 2.0-3.5 oz/A 3. 2.5-3.5 oz/A 4. 3.5 oz/A	REI is 12 hours. PHI is 7 days. Do not exceed 0.35 lb of active ingredient per season. Do not apply more than 7.0 oz per cutting/A, 28.0 oz/A per year. Do not apply to alfalfa stands with intentionally grown forage grasses.
Respect** zeta-cypermethrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, blue alfalfa aphid, pea aphid, spotted alfalfa aphid, potato leafhopper, alfalfa weevil larvae 2. Plant bugs, grasshoppers	1. 2.24-4.0 oz/A 2. 2.8-4.0 oz/A	REI is 12 hours. PHI is 3 days. Do not make applications less than 7 days apart. Do not apply more than 4.0 oz/A per cutting. Do not apply more than 12.0 oz/A per year.
Seduce Insect Bait spinosad	5	Black cutworm, variegated cutworm, army cutworm	20-44 lb/A	REI is 4 hours. PHI is 0 days for forages and 3 days for hay or fodder. Do not make more than 3 applications in 21 days.
Sevin 80S carbaryl	1A	1. Blister beetle 2. Alfalfa caterpillar, green cloverworm, potato leafhopper 3. Black cutworm, variegated cutworm, army cutworm, alfalfa webworm, garden webworm 4. Alfalfa weevil larvae	1. 0.625-1.25 lb/A 2. 1.25 lb/A 3. 1.25-1.625 lb/A 4. 1.875 lb/A	REI is 12 hours. PHI is 7 days. Do not apply more than once per cutting. Do not apply this product to crops or weeds in bloom.
Steward EC indoxacarb	22	Alfalfa caterpillar, alfalfa weevil larvae	6.7-11.3 oz/A	REI is 12 hours. PHI is 7 days. Do not apply more than 11.3 oz/A per cutting or 45.0 oz/A per year.
Silencer** lambda-cyhalothrin	3A	1. Alfalfa caterpillar, army cutworm, black cutworm, variegated cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curculio adult, grasshoppers	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A	REI is 24 hours. PHI is 1 day for forage and 7 days for hay harvest. Do not apply more than 3.84 oz/A per cutting or more than 15.36 oz/A per year. Do not apply when bees are actively foraging.
Silencer VC** lambda-cyhalothrin	3A	1. Alfalfa caterpillar, army cutworm, black cutworm, variegated cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curculio adult, grasshoppers	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A	REI is 24 hours. PHI is 1 day for forage and 7 days for hay harvest. Do not apply more than 3.84 oz/A per cutting or more than 15.36 oz/A per year. Do not apply when bees are actively foraging.

*REI = Restricted Entry Interval PHI = Preharvest Interval
**Restricted Use Insecticide

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Sivanto 200 SL Flupyradiflurone	4D	1. Aphids, leafhoppers 2. Threecornered alfalfa hopper, whiteflies	7.0-10.5 fl. oz./acre 10.5-14 fl. oz./acre	REI = 4 hours. PHI = 7 days Do not apply within 10 days of previous treatment. Do not apply more than 28 fl. oz./acre/year. May be applied through some irrigation systems. Minimum of 10 gpa by ground, 2 gpa by aerial application
Stallion** chlorpyrifos + zeta-cypermethrin	1B, 3A	1. Black cutworm, variegated cutworm, army cutworm 2. Alfalfa caterpillar, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 3. Blue alfalfa aphid, pea aphid, spotted alfalfa aphid, alfalfa weevil larvae, grasshoppers 4. Plant bugs	1. 2.5-11.75 oz/A 2. 5.0-11.75 oz/A 3. 9.25-11.75 oz/A 4. 11.75 oz/A	REI is 24 hours. PHI is 7 days. Do not make applications less than 10 days apart. Do not make more than 4 applications per season or apply more than once per cutting. Do not apply if bees are actively foraging in the treated area.
Tombstone** cyfluthrin	3A	1. Black cutworm, variegated cutworm, army cutworm, green cloverworm, potato leafhopper 2. Alfalfa caterpillar, plant bugs, alfalfa weevil larvae 3. Grasshoppers 4. Blue alfalfa aphid, cowpea aphid, pea aphid	1. 0.8-1.6 oz/A 2. 1.6-2.8 oz/A 3. 2.0-2.8 oz/A 4. 2.8 oz/A	REI is 12 hours. PHI is 7 days. Do not apply more than 3.2 oz per cutting/A, 12.8 oz/A per year. Do not apply to alfalfa stands with intentionally grown forage grasses.
Tombstone Helios** cyfluthrin	3A	1. Black cutworm, variegated cutworm, army cutworm, green cloverworm, potato leafhopper 2. Alfalfa caterpillar, plant bugs, alfalfa weevil larvae 3. Grasshoppers 4. Blue alfalfa aphid, cowpea aphid, pea aphid	1. 0.8-1.6 oz/A 2. 1.6-2.8 oz/A 3. 2.0-2.8 oz/A 4. 2.8 oz/A	REI is 12 hours. PHI is 7 days. Do not apply more than 3.2 oz/A per cutting, 12.8 oz/A per year. Do not apply to alfalfa stands with intentionally grown forage grasses.
Troubadour 2F Methoxyfenozide	18	Armyworms, alfalfa caterpillars, alfalfa loopers, webworms	4.0-8.0 fl. oz./acre	REI = 4 hours PHI = 0 days for grazing, 7 days for hay harvest Do not apply more than 32 fl oz./year. Do not make more than 1 application/cutting. Apply in a minimum of 10 gpa by ground, 5 gpa by air.
Voliam Xpress** lambda-cyhalothrin + chlorantraniliprole	3A, 28	1. Alfalfa caterpillar, army cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curcuilos adult, grasshoppers	1. 5.0-8.0 oz/A 2. 6.0-9.0 oz/A	REI is 24 hours. Do not apply more than 9.0 oz/A per cutting or 31.0 oz/A per year. Do not exceed 0.12 lb ai/A of lambda-cyhalothrin or 0.2 lb ai of chlorantraniliprole-containing products per acre per growing season.

*REI = Restricted Entry Interval PHI = Preharvest Interval

**Restricted Use Insecticide

Alfalfa

Forage or Hay Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Vulcan chlorpyrifos	1B	1. Grasshoppers, leafhoppers 2. Alfalfa caterpillar, alfalfa weevil (adults and larvae), armyworms, blue alfalfa aphid, cutworms, pea aphid, plant bugs, spotted alfalfa aphid 3. Alfalfa webworm	1. 8.0-16.0 oz/A 2. 16.0-32.0 oz/A 3. 24.0 oz/A	REI is 24 hours. PHI is 7 days after application of 8.0 oz/A, 14 days after application of 16.0 oz/A, and 21 days if rate is above 16.0 oz/A. Do not make more than four applications of products containing chlorpyrifos per year, or apply more than once per cutting. Do not make a second application within 10 days of first application. Do not apply if bees are clustered outside of hives and are foraging.
Warhawk chlorpyrifos	1B	1. Potato leafhopper, grasshoppers 2. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, blue alfalfa aphid, cowpea aphid, pea aphid, plant bugs, alfalfa weevil adult, alfalfa weevil larvae 3. Alfalfa webworm	1. 8-16 oz/A 2. 16-32 oz/A 3. 24 oz/A	REI is 24 hours. PHI is 7 days for less than 8.0 oz, 14 days for 8.0-16.0 oz, and 21 days for more than 16.0 oz/A. Do not make a second application of a product containing chlorpyrifos within 10 days of first application. One application per cutting, no more than 4 applications per acre per crop. Do not apply if nearby bees are clustered outside hives and are actively foraging in the treated area.
Warrior with Zeon Technology** lambda-cyhalothrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curculios adult, grasshoppers	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A	REI is 24 hours. PHI is 1 day for forage and 7 days for hay. Do not apply more than 0.03 lb ai/A per cutting or 0.12 lb ai/A per year. Do not make applications when bees are actively foraging.
Warrior II with Zeon Technology** lambda-cyhalothrin	3A	1. Alfalfa caterpillar, black cutworm, variegated cutworm, army cutworm, green cloverworm, alfalfa webworm, garden webworm, potato leafhopper 2. Blue alfalfa aphid, cowpea aphid, pea aphid, spotted alfalfa aphid, plant bugs, alfalfa weevil larvae, blister beetle, clover root curculios adult, grasshoppers	1. 0.96-1.6 oz/A 2. 1.28-1.92 oz/A	REI is 24 hours. PHI is 1 day for forage and 7 days for hay. Do not apply more than 0.03 lb ai/A per cutting or 0.12 lb ai/A per year. Do not make applications when bees are actively foraging.

*REI = Restricted Entry Interval PHI = Preharvest Interval

**Restricted Use Insecticide

Corn

Seed, Soil, and Foliar Insecticides

Insecticide	Armyworm	Chinch Bug	Common Stalk Borer	Corn Flea Beetle	Corn Leaf Aphid	Corn Rootworm Larvae	Corn Rootworm Adult	European Corn Borer	Grasshopper	Soil Cutworm	Spider Mite	Western Bean Cutworm	White Grubs	Wireworm
Seed Treatment														
Avicta Complete Corn		X		X									X	X
Cruiser 5FS		X		X	X	X				X			X	X
Gaucho 600		X				X							X	X
Poncho 600		X		X		X				X			X	X
Poncho/VOTiVO		X		X	X					X			X	X
Soil-Applied														
Aztec 2.1G						X				X			X	X
Aztec 4.67G						X				X			X	X
Bifenture 2E, Brigade, Discipline 2E, Sniper 2E, Tundra 2EC						X				X			X	X
Capture LFR, Capture 3RIVE 3D	X					X				X			X	X
Counter 15G	X		X	X		X				X			X	X
Defcon 2.1G						X				X			X	X
Force 3G						X				X			X	X
Force CS						X				X			X	X
Fortress 5G						X				X			X	X
Hero EC										X			X	X
Lorsban 15G						X		X					X	X
Mustang Maxx										X			X	X
Pounce 1.5G						X				X				X
Thimet 20G				X		X							X	X
Foliar-Applied														
Ambush 2EC	X		X	X			X	X		X		X		
Arctic EC	X		X	X			X	X		X		X		
Asana XL	X	X	X	X	X		X	X	X	X		X		
Baythroid XL		X	X	X			X	X	X	X		X		
Belt SC	X							X		X		X		
Bifenture 2E, Brigade 2EC, Discipline 2E, Sniper 2E, Tundra 2EC	X	X	X	X	X		X	X	X		X	X		
Cobalt, Cobalt Advanced	X	X	X	X	X		X	X	X	X		X		X
Comite II											X			
Coragen								X				X		
Delta Gold	X	X	X	X			X	X	X	X		X		
Dimate 4E, Dimethoate					X		X		X		X			
DiPel ES	X													
Govern 4E, Hatchet 4E, Lorsban 4E, Warhawk 4E, Yuma 4E	X	X	X	X	X	X	X	X	X	X	X	X		
Hero	X	X	X	X	X		X	X	X	X	X	X		
Intrepid 2F	X							X					X	
Lannate LV	X		X		X		X	X				X		
Lorsban 15G						X		X						X
Malathion 57EC	X				X		X		X					
Methyl 4EC	X				X		X		X	X				
Mustang Maxx	X	X	X	X	X		X	X	X	X		X		
Oberon 2SC											X			
Onager											X			
PennCap-M	X			X	X		X	X	X	X		X		
Pounce 1.5G			X			X		X		X				X
Prevathon								X	X			X		
Proaxis		X		X	X		X	X	X	X		X		
Radiant SC	X							X				X		
Respect	X	X	X	X	X		X	X	X	X		X		
Sevin XLR Plus	X	X		X			X	X	X	X		X		
Sivanto 200 SL					X									
SmartChoice						X				X			X	X
Stallion	X	X	X	X	X	X				X		X		
Swagger	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Tracer	X							X	X			X		
Tundra					X	X				X			X	X
Warrior II with Zeon Technology, Lambda Cy Ec, Taiga Z	X	X	X	X			X	X	X	X		X	X	X
Zeal											X			

X = insecticide labeled for control against this pest.

Field Corn

Seed, Soil, and Foliar Insecticides

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Ambush 2EC permethrin	3A	1. Western bean cutworm 2. Armyworm, fall armyworm, cutworm, European corn borer, flea beetle, corn earworm, corn rootworm beetle, stalk borer	1. 3.2-6.4 fl oz/A 2. 6.4-12.8 fl oz/A	REI is 12 hours. Do not apply within 30 days of harvest of grain or fodder.
Arctic EC permethrin	3A	1. Western bean cutworm 2. Armyworm, fall armyworm, European corn borer, corn earworm, corn rootworm beetle, cutworm, flea beetle, stalk borers	1. 2.0-4.0 fl oz/A 2. 4.0-6.0 fl oz/A	REI is 12 hours. Do not apply within 30 days of harvest of grain or fodder.
Asana XL esfenvalerate	3A	1. Western bean cutworm 2. Armyworm, black cutworm, chinch bug, corn leaf aphid, corn rootworm (adult control), cutworm, flea beetle, grasshopper, stalk borer 3. European corn borer	1. 2.9-5.8 fl oz/A 2. 5.8-9.6 fl oz/A 3. 7.8-9.6 fl oz/A	PHI is 21 days. Do not apply more than 0.25 lb ai per acre per season. Do not enter or allow worker entry into treated areas during the REI of 12 hours.
Avicta Complete Corn thiamethoxam	4A	Wireworm, white grub, seed corn beetle, chinch bug, southern corn leaf beetle, seed corn maggot, corn flea beetle, grape colaspis	0.5 mg ai/kernel	
Aztec 2.1G tebuprimifos + cyfluthrin	1B, 3A	Corn rootworm larvae, cutworm, wireworm, seedcorn maggot, seed-corn beetle, white grub	6.7 ounces/1000 row-ft	REI is 48 hours (72 hours where average rainfall is less than 25 inches per year). Band, T-band or in-furrow application.
Aztec 4.67 G tebuprimifos + cyfluthrin	1B, 3A	Corn rootworm larvae, cutworm, wireworm, seedcorn maggot, seed-corn beetle, white grubs	3.0 ounces/1000 row-ft	REI is 48 hours (72 hours where average rainfall is less than 25 inches per year). Apply as band, T-band or in-furrow application. Aztec 4.67G must be applied with the SmartBox system.
Baythroid XL beta-cyfluthrin	3A	1. Black cutworm, corn flea beetle 2. Chinch bug, corn rootworm adult, European corn borer, stalk borer, western bean cutworm 3. Grasshopper	1. 0.8-1.6 fl oz/A 2. 1.6-2.8 fl oz/A 3. 2.1-2.8 fl oz/A	REI is 12 hours. PHI for grain or fodder is 21 days. Maximum of 4 applications per crop season.
Belt SC flubendiamide	28	Armyworm, fall armyworm, black cutworm, European corn borer, western bean cutworm	2.0-3.0 fl oz/A	REI is 12 hours.
Brigade 2EC bifenthrin	3A	1. Corn rootworm larvae 2. Cutworms, wireworm, seed corn maggot, seed corn beetle, white grubs 3. Aphids, army cutworm, chinch bug, common stalk borer, corn earworm, corn rootworm adults, cutworm species, European corn borer, fall armyworm, flea beetle, grasshoppers, greenbug, southern corn leaf beetle, stiink bugs, armyworm species, western bean cutworm 4. Banks grass mite, twospotted spider mite	1. 0.30 oz/1000 row-ft 2. 0.15-0.30 oz/1000 row-ft 3. 2.1-6.4 fl oz/A 4. 5.12-6.4 fl oz/A	1 and 2. Apply as a 5- to 7-inch T-band treatment over an open seed furrow. Position spray nozzle behind the planter shoe, in front of the press wheel centered over the row. 2. Use highest rate under heavy insect pressure. Do not apply within 30 days of harvest. Do not graze livestock or cut crops for feed within 30 days of last application.
Capture LFR bifenthrin	3A	1. Corn rootworm larvae 2. Wireworm, grub, seedcorn maggot, root aphid	1. 0.39-0.98 fl oz/1000 row-ft 2. 0.2-0.78 fl oz/1000 row-ft	Apply as a 5-7 inch band (T-band) over an open furrow, or in-furrow with the seed. REI is 12 hours.
Cobalt chlorpyrifos + gamma-cyhalothrin	1B, 3A	1. White grub, seed corn beetle, seed corn maggot and wireworm 2. Cutworm 3. Grasshopper 4. Aphid, armyworm, corn rootworm adult, cutworm, flea beetle adult 5. Chinch bug, European corn borer, stalk borer, southern corn leaf beetle, western bean cutworm	1. 2.87 fl oz/1000 row-ft (T-band) 2. 1.89 fl oz/1000 row-ft (T-band) 3. 7.0-13.0 fl oz/A 4. 13.0-26.0 fl oz/A 5. 19.0-38.0 fl oz/A	REI is 24 hours unless wearing PPE required for early entry. Do not apply within 21 days before harvest of grain or ears. Do not allow meat or dairy animals to graze treated areas. Do not harvest treated corn silage as feed for meat or dairy animals within 14 days after last treatment.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Field Corn

Seed, Soil, and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Cobalt Advanced chlorpyrifos + gamma cyhalothrin	1B, 3A	1. White grub, seed corn beetle, seed corn maggot and wireworm 2. Cutworm 3. Grasshopper 4. Aphid, armyworm, corn rootworm adult, cutworm, flea beetle adult 5. Chinch bug, European corn borer, stalk borer, southern corn leaf beetle, western bean cutworm 6. billbugs, common stalk borer, corn rootworm larvae, Japanese beetle adult	1. 2.87 fl oz/1000 row-ft (T-band) 2. 1.89 fl oz/1000 row-ft (T-band) 3. 6.0-13.0 fl oz /A 4. 11.0-26.0 fl oz/A 5. 16.0-38.0 fl oz/A 6. 32.0-42.0 fl oz/A	REI is 24 hours unless wearing PPE required for early entry. Do not apply within 21 days before harvest of grain or ears.
Comite II propargite	12C	Twospotted spider mite, Banks grass mite	2 1/4- 3 3/8 pt/A	REI is 7 days. PHI is 30 days. Apply 1 time per year.
Coragen chlorantraniliprole	28	Corn earworm, European corn borer, fall armyworm, western bean cutworm	3.5-5.0 fl oz/A	PHI is 14 days. REI is 4 hours.
Counter 15G terbufos	1B	1. Corn rootworm, wireworm, white grub, seedcorn maggot, seedcorn beetle, corn flea beetle, maize billbug, southern corn billbug 2. Corn rootworm	1. At planting; 6.0-8.0 oz per 1000 row-ft applied banded or in-furrow 2. Cultivation time; 8.0 oz per 1000 row-ft	REI is 48 hours (72 hours where average rainfall is less than 25 inches a year). If application is made at planting, do not make postemergence or cultivation time treatments.
Cruiser 5FS thiamethoxam	4A	1. Wireworm, seedcorn maggot, southern corn leaf beetle, chinch bug, corn flea beetle, grape colaspis, white grub, black cutworm, thrip, southern green stink bug, seedcorn beetle, and corn leaf aphid 2. Corn rootworm larvae and billbug	1. 0.125-0.80 mg ai/kernel 2. 1.25 mg ai/kernel	REI is 12 hours. Treated seeds exposed on soil surface may be hazardous to wildlife. Cover or collect treated seeds spilled during loading. Dispose of all excess treated seed. Leftover treated seed may be doublesown around the headland or buried away from water sources in accordance with local requirements. Do not contaminate water bodies when disposing of planting equipment wash water. Do not make any soil or foliar application of products containing thiamethoxam to crops grown from seed treated with Cruiser (thiamethoxam).
Declare Gamma-cyhalothrin	3A	(Planting time) 1. Corn rootworm larvae, cutworm spp., seedcorn beetle, seedcorn maggot, white grub spp. (Foliar applications) 1. Corn earworm, cutworms, western bean cutworm 2. European corn borer, fall armyworm, flea beetle, grasshopper spp., Japanese beetle adult, corn rootworm adult, stalk borer, stink bug spp., yellow striped armyworm 3. Beet armyworm, chinch bug	1. 0.26 fl oz per 1000 row-ft 1. 0.77-1.28 fl oz per acre 2. 1.02-1.54 fl oz per acre 3. 1.54 fl oz per acre	PHI is 21 days for grain, livestock grazing or silage harvest. PHI is 21 days.
Defcon 2.1G phosphorothionate + cyfluthrin	1B, 3A	Corn rootworm larvae, cutworm, wireworm, seedcorn maggot, seedcorn beetle, white grub	6.7 oz/1000 row-ft	May be applied as band, T-band, or in-furrow at planting. REI is 48 hours (72 hours for areas with annual average rainfall less than 25 inches).

*REI = Restricted Entry Interval PHI = Preharvest Interval

Field Corn

Seed, Soil, and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Delta Gold deltamethrin	3A	1. Cutworm, grasshopper, flea beetle 2. Armyworm, chinch bug, corn earworm, corn rootworm adult, European corn borer, stalk borer, stink bugs, webworm	1. 1.0-1.5 fl oz/A 2. 1.5-1.9 fl oz/A	REI is 12 hours. Do not apply within 21 days of harvest for grain or fodder, or within 12 days of cutting or grazing for forage.
Dimethoate 4E dimethoate	1B	1. Banks grass mite, twospotted spider mite, aphid 2. Grasshopper	1. 2/3-1.0 pt/A 2. 1.0 pt/A	REI is 48 hours. PHI is 14 days. Do not apply more than three times per year. Do not feed or graze within 14 days of last application. Do not apply to corn during the pollen-shed period if bees are present.
DiPel ES and others <i>Bacillus thuringiensis</i>	11	European corn borer, corn earworm, variegated cutworm, webworm, armyworm	See product label	See product label.
Force 3G tefluthrin	3A	1. Corn rootworm, cutworm, seedcorn maggot, seedcorn beetle, lesser cornstalk borer, white grub, wireworm 2. Corn rootworm, seedcorn beetle, seedcorn maggot, white grub, wireworm	1. 4.0-5.0 oz per 1000 row-ft, Banded, T-banded or in-furrow at planting 2. 4.0-5.0 oz per 1000 row-ft at cultivation within 30 days of seedling emergence 0.46-0.57 fl oz per 1000 row-ft.	REI is 0 hours. Runoff from treated areas may be hazardous to aquatic organisms in adjacent aquatic sites. Do not apply this product within 20 yards of water. Cover or incorporate spills (including end row spillage). Use only once per crop. For best wireworm and/or white grub control, apply the granules as an in-furrow treatment.
Force CS tefluthrin	3A	Cutworm, lesser cornstalk borer, corn rootworm, seedcorn beetle, seedcorn maggot, white grub, wireworm	0.46-0.57 fl oz/1000 row-ft	T-band or in-furrow application. REI is 12 hours. For best wireworm and/or white grub control, apply the liquid as an in-furrow treatment.
Fortress 5G chlorethoxyfos	1B	1. Corn rootworm 2. Cutworm, wireworm, white grub, seedcorn maggot, grape colaspis	1. 7.5-9.0 oz/1000 row-ft 2. 6.0-7.5 oz/1000 row-ft	REI is 48 hours (72 hours where average rainfall is less than 25 inches per year). For optimal control of labeled pests, apply in-furrow at planting; also may be applied as a T-band with incorporation into the top 1 inch of soil. Do not apply more than once per year.
Gaucho 600 imidacloprid	4A	1. Corn rootworm 2. Seed corn beetle, chinch bug, white grub, seed corn maggot, wireworm, southern corn leaf beetle	1. 1.34 mg ai/kernel 2. 0.60 mg ai/kernel	1. Use only in areas of light to moderate corn rootworm populations
Hero zeta-cypermethrin + bifenthrin	3A	1. Army cutworm, common stalk borer, cutworm species, flea beetle, grasshopper, western bean cutworm 2. Aphid species, beet armyworm, fall armyworm, armyworm, armyworm species, yellowstriped armyworm, chinch bug, corn blotch leafminer adult, corn earworm, corn rootworm adult, European corn borer, greenbug, southern corn leaf beetle, stink bug, webworm 3. Banks grass mite, twospotted spider mite 4. Cutworm spp., including army cutworm, seed corn maggot, white grub, and wireworms	1. 2.6-6.1 oz/A 2. 4.0-10.3 oz/A 3. 10.3 oz/A 4. 4.0-10.3 oz/A applied at planting	REI is 12 hours. Do not apply within 30 days of harvest for grain and stover and 60 days for forage. Do not graze livestock in treated areas or cut treated crops for feed within 30 days of the last application. Use of ultra low volume (ULV) application on corn is prohibited. Do not make aerial or ground applications to corn if heavy rainfall is imminent.
Intrepid 2F methoxyfenozide	18	European corn borer, armyworm, western bean cutworm	4.0-8.0 fl oz/A	REI is 4 hours. PHI is 21 days.
Lannate LV methomyl	1A	1. Earworm, armyworm, fall armyworm, European corn borer, corn rootworm adult, flea beetles, aphids 2. Variegated cutworm, beet armyworm	1. 0.075-1.5 pt/A 2. 1.5 pt/A	REI is 48 hours. PHI is 21 days for grain and stover.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Field Corn

Seed, Soil, and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Lorsban 4E Lorsban Advanced chlorpyrifos	1B	1. Grasshopper 2. Aphid, armyworm, chinch bug, corn rootworm adult, cutworm, European corn borer, flea beetle adult, southern corn leaf beetle, western bean cutworm 3. Common stalk borer, corn rootworm larvae, billbug	1. 0.5 -1.0 pt/A 2. 1.0-2.0 pt/A 3. 2.0 pt/A	Do not enter or allow worker entry into treated areas during the REI of 24 hours unless wearing the PPE required for early entry. Apply as a postemergence broadcast spray using sufficient spray volume to ensure thorough coverage of treated plants, but no less than 15 gpa for ground spray equipment or 2 to 5 gpa for aircraft equipment. Lorsban 4E may be broadcast applied postemergence through sprinkler irrigation systems at recommended application rates to control listed foliar pests. For best results, tank mix Lorsban 4E with 2 pints of non-emulsifiable oil.
Lorsban 15G chlorpyrifos	1B	1. Corn rootworm larvae seed corn beetle, seed corn maggot, wireworm, white grub 2. European corn borer (1st generation) 3. European corn borer (2nd generation)	1. 8.0 oz per 1000 row-ft T-band or in-furrow application 2. 3.5-8.0 oz per 1000 row-ft (banded); 5.0-6.5 lb/A (aerial) 3. 6.0-8.0 oz per 1000 row-ft (banded); 6.5 lb/A (aerial)	Do not enter or allow worker entry into treated areas during the REI of 24 hours unless wearing PPE required for early entry. Do not apply within 21 days before harvest of grain.
Malathion 57EC Malathion	1B	Aphids, corn earworm, corn rootworm adults, small armyworms	1.5 pt/A	PHI is 7 days. REI is 3 days for detasseling, 12 hours for all other activities. Maximum of two applications per season.
Methyl 4EC methyl parathion	1B	1. Armyworm, climbing cutworm, corn leaf aphid, corn rootworm adult, fall armyworm, stink bug 2. Grasshoppers	1. 0.5 pt/A 2. 1.0 pt/A	Do not apply within 12 days of harvest. Do not apply during the pollen shed period. The REI is 3 days. Do not apply more than 0.5 lb ai/A per application. Do not apply more than 1.0 lb ai/A per year. Do not make more than 2 applications per year
Mustang Maxx zeta-cypermethrin	3A	1. Cutworms 2. Corn earworm, western bean cutworm 3. European corn borer, corn rootworm beetle, flea beetle, grasshopper, southern corn leaf beetle, stalk borer, stink bug, webworm, aphid 4. Armyworm, fall armyworm, chinch bug	1. 1.28-2.8 oz/A 2. 1.76-4.0 oz/A 3. 2.72-4.0 oz/A 4. 3.2-4.0 oz/A	REI is 12 hours. Do not apply more than 0.10 lb active ingredient per acre per season including at-planting plus foliar applications. PHI is 7 days for grain, stover, and forage harvest.
Nufos 4E chlorpyrifos	1B	1. Grasshopper 2. Aphids, armyworms, chinch bugs, corn rootworm adults, cutworms, European corn borer, flea beetle adults, southern corn leaf beetle, Western bean cutworm 3. Corn earworm 4. Billbugs, common stalk borer, corn rootworm larvae	1. 0.5-1.0 pt/A 2. 1.0-2.0 pt/A 3. 1.5-2.0 pt/A 4. 2.0 pt/A	PHI is 21 days. REI is 24 hours unless PPE worn. Maximum of three applications of any chlorpyrifos product per season.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Field Corn

Seed, Soil, and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Oberon 2SC spiromesifen	23	Banks grass mite, twospotted spider mite	2.85-8.0 fl oz/A	REI is 12 hours following application. PHI: green forage and silage – 5 days; grain or stover – 30 days. Maximum allowed per 14-day interval: 8.5 fl oz per acre. Maximum allowed per crop season: 8.5 fl oz per acre. Maximum number of applications per crop season: 2. Minimum application volume: 10.0 gpa ground, 5.0 gpa aerial.
Onager hexythiazox	10A	Banks grass mite, twospotted spider mite	10.0-24.0 fl oz/A	May only be applied west of Highway 281. REI is 12 hours. May be applied by air, ground, or chemigation. Do not apply more than a total of 24 oz formulated product per acre per year. Do not make more than one application per year. Do not harvest field corn forage, stover, and grain for 45 days after application. Application after the V15 crop growth stage is prohibited. Minimum application volume: 15-20 gpa — ground, 5 gpa — aerial application.
PennCap-M methyl parathion	1B	1. Corn rootworm adults 2. Stink bugs 3. Aphid, flea beetle, grasshopper, true armyworm 4. European corn borer, western bean cutworm 5. Black cutworm	1. 1.0-2.0 pt/A 2. 1.0-3.0 pt/A 3. 2.0-3.0 pt/A 4. 2.0-4.0 pt/A 5. 4.0 pt/A	REI is 31 days. Do not apply during pollen shed if bees are foraging in the areas to be treated. Do not harvest, cut for forage, or graze within 12 days of application.
Poncho 600 clothianidin	4A	1. Chinch bug, corn flea beetle, corn leaf aphid, black cutworm, grape colaspis, seedcorn maggot, southern corn leaf beetle, white grub, thrips, wireworm 2. Corn rootworm, southern corn billbug	1. 0.25-0.50 mg ai/kernel 2. 1.25 mg ai/kernel	Dispose of all excess treated seed. Leftover treated seed may be doublesown around the headland or buried away from water sources in accordance with local requirements. Do not contaminate water bodies when disposing of planting equipment wash water. Treated seeds exposed on the soil surface may be hazardous to wildlife. Cover or collect treated seeds spilled during loading.
Poncho/VOTiVO clothianidin	4A	Chinch bug, corn flea beetle, corn leaf aphid, black cutworm, grape colapsis, seedcorn maggot, southern corn leaf beetle, white grubs, wireworm	0.50 mg ai/seed of clothianidin	
Prevathon chlorantraniliprole	28	Corn ear worm, European corn borer	14.0-20.0 fl oz/A	REI is 4 hours. PHI is 14 days.
Proaxis gamma-cyhalothrin	3A	1. Corn rootworm larvae, cutworm, seedcorn beetle, seedcorn maggot, white grub 2. Corn earworm, western bean cutworm. 3. European corn borer, fall armyworm, flea beetle, grasshopper, corn rootworm beetle, stalk borer, stink bug, webworm, corn leaf aphid 4. Chinch bug	1. 0.66 fl oz/1000 row-ft applied in-furrow, T-band, or banded at planting 2. 1.93-3.20 fl oz/A (foliar application) 3. 2.56-3.84 fl oz/A (foliar application) 4. 3.84 fl oz/A (foliar application)	REI is 24 hours. Do not apply within 21 days of harvest. Do not allow livestock to graze treated areas or harvest treated corn forage within 1 day after last treatment. Do not feed treated corn forage or fodder or silage within 21 days after the last treatment.
Radiant SC spinetoram	5	Corn earworm, European corn borer, western bean cutworm, armyworm	3.0-6.0 fl oz/A	REI is 4 hours. Do not apply within 28 days of grain harvest or within 3 days of fodder or forage harvest.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Field Corn

Seed, Soil, and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Respect zeta-cypermethrin	3A	1. Cutworms 2. Corn earworm, western bean cutworm 3. European corn borer, corn rootworm beetle, flea beetle, grasshopper, southern corn leaf beetle, stalk borer, stink bug, webworm, aphid 4. Armyworm, fall armyworm, chinch bug	1. 1.28-2.8 oz/A 2. 1.76-4.0 oz/A 3. 2.72-4.0 oz/A 4. 3.2-4.0 oz/A	REI is 12 hours. Do not apply more than 0.10 lb active ingredient per acre per season including at-planting plus foliar applications. Do not apply within 30 days of harvest for grain and stover and 60 days for forage.
Sevin XLR Plus carbaryl	1A	1. Armyworm, chinch bug, corn rootworm adult, fall armyworm, flea beetle 2. European corn borer 3. Western bean cutworm, cutworm 4. Grasshoppers	1. 1.0-2.0 qt/A 2. 1.5-2.0 qt/A 3. 2.0 qt/A 4. 0.5-3.4 qt/A; small nymphs. 1.0-1.5 qt/A; mature grasshoppers	REI of 12 hours. Do not apply within 48 days of harvest of grain and fodder or within 14 days of harvest or grazing of forage or silage. Do not apply more than a total of 8 quarts per acre per crop.
Sivanto 200 SL Flupyradiflurone	4D	Aphids, leafhoppers	7.0-10.5 fl oz/A	PHI 7days (forage), 21 days (grain, stover or straw) Min application volume; 10 gal/A (ground) 2 gal/A (aerial)
SmartChoice 5G chlorothoxyfos + bifenthrin	1B, 3A	1. Cutworms, wireworms, white grubs, seedcorn maggots, grape colaspis, symphylans 2. Corn rootworm larvae, cutworms, wireworms, white grubs, seedcorn maggots, grape colaspis, symphylans	1. 3.0-3.5 oz per 1000 row-ft applied in furrow 2. 4.5-5.0 oz per 1000 row-ft applied in furrow	Do not make more than one application per year. Must be applied using Smart-Box or Lock 'N Load closed handling and application system.
Stallion zeta cypermethrin + chlorpyrifos	3A, 1B	1. Cutworm species (other than western bean cutworm) 2. Aphid species, armyworms, chinch bug, European corn borer, common stalk borer, corn earworm, corn rootworm beetle, grasshopper species, Japanese beetle adult, sap beetle adult, southern corn leaf beetle, stink bug species	1. 3.75-11.75 fl oz/A 2. 9.25-11.75 fl oz/A	Do not apply within 30 days of harvest for grain and stover, and 60 days of harvest for forage. 24 hour REI. Do not apply in tank mixes with Steadfast or Lightning herbicides.
Swagger bifenthrin + imidacloprid	3, 4A	1. Aphids, army cutworm, beet armyworm, chinch bug, common stalk borer, corn earworm, corn rootworm adults, cutworm spp., European corn borer, fall armyworm, flea beetles, grasshoppers, southern corn leaf beetle, stink bug, armyworm spp., webworms, western bean cutworm 2. Twospotted spider mite, Banks grass mite 3. Corn rootworm larvae	1. 8.45-25.6 fl oz/A 2. 20.48-25.6 fl oz/A 3. 2.4 fl oz/1000 row-ft (at planting)	PHI is 30 days, with a 7 day minimum interval between applications. Do not graze livestock in treated areas or cut treated crops for feed within 30 days of last application. Apply in a minimum of 2.0-5.0 gal of finished spray/A by air, or a minimum of 10.0 gal/A by ground.
Thimet 20G phorate	1B	1. Corn rootworm, wireworm, white grub, seedcorn maggot, seedcorn beetle, flea beetle 2. corn rootworm	1. 4.5-6.0 oz/1000 row-ft (at planting); band or T-band only 2. 4.5-6.0 oz/1000 row-ft (at cultivation)	REI is 48 hours (72 hours in areas where average annual rainfall is less than 25 inches a year). Do not apply more than one application of Thimet 20G per crop per season. Do not harvest, graze, or cut forage within 30 days of last treatment.

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Field Corn

Seed, Soil, and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Tracer spinosad	5	1. European corn borer, fall armyworm, true armyworm 2. Beet armyworm, corn earworm, western bean cutworm	1. 1.0-3.0 fl oz / A 2. 2.0-3.0 fl oz / A	REI is 4 hours. Do not apply within 28 days of grain harvest or within 3 days of fodder or forage harvest. Do not apply more than a total of 6 fl oz per acre per year.
Tundra Supreme chlorpyrifos + bifenthrin	1B, 3	1. Aphids, army cutworm, beet armyworm, chinch bug, common stalk borer, corn earworm, corn rootworm adults, European corn borer, fall armyworm, flea beetle, grasshoppers, southern corn leaf beetle, stink bugs, western bean cutworm, armyworm spp. 2. Twospotted spider mite and Banks grass mite	1. 5.6-12.8 fl oz / A 2. 13.5-16.8 fl oz / A	Do not graze livestock in treated areas or cut treated crops for feed within 30 days of last application. Do not apply in tank mixes with Steadfast or Lightning herbicides.
Warrior II with Zeon Technology lambda-cyhalothrin	3A	1. Corn rootworm larvae, cutworm, lesser cornstalk borer, seedcorn beetle, seedcorn maggot, white grub, wireworm 2. Corn earworm, cutworm, western bean cutworm 3. Armyworm, corn rootworm beetle, European corn borer, fall armyworm, flea beetle, grasshopper, stalk borer, stink bug, webworm, yellowstriped armyworm 4. Chinch bug	1. 0.33 fl oz/1000 row-ft at planting, banded, T-band or in-furrow 2. 0.96-1.60 fl oz / A (foliar application) 3. 1.28-1.92 fl oz / A (foliar application) 4. 1.92 fl oz / A (foliar application)	REI is 24 hours. Do not harvest or graze livestock or cut treated crops for feed within 21 days of at-planting application. Do not apply within 21 days of harvest. Do not allow livestock to graze in treated areas or harvest treated corn forage as feed for meat or dairy animals within 1 day after last treatment. Do not feed treated corn fodder or silage to meat or dairy animals within 21 days after last treatment.
Zeal etoxazole	10B	Twospotted spider mite and Banks grass mite	1.0-3.0 oz / A	PHI is 21 days. Do not apply more than two times per season. Do not apply less than 14 days apart. Do not apply more than 6.0 oz (0.27 lb ai) per acre per season.

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Soybean

Seed and Foliar Insecticides

Insecticide	Bean Leaf Beetle	Soybean Aphid	Grasshopper	Caterpillar
Seed Treatment				
Cruiser (various formulations)	X	X		
Gaucho 600	X	X		
Inovate	X	X		
Poncho/VOTiVO	X	X		
Foliar Treatment				
Alias 4F	X	X		
Ambush 2EC	X		X	X
Arctic 3.2EC	X		X	X
Asana XL	X	X	X	X
<i>Bacillus thuringiensis</i>				X
Baythroid XL	X	X	X	X
Belay	X	X		
Besiege	X	X	X	X
Cobalt/Cobalt Advanced	X	X	X	X
Declare	X	X	X	X
Delta Gold 1.5EC	X	X	X	X
Dimethoate 4E	X	X	X	
Dimilin 2L			X	X
Endigo ZC	X	X		X
Hero	X	X	X	X
Intrepid 2F				X
Justice	X	X		X
Lannate LV	X			X
Leverage 360	X	X	X	X
Methyl 4E	X		X	X
Mustang Maxx	X	X	X	X
Nufos 4E	X	X	X	X
PennCap-M	X		X	X
Pounce 25WP	X	X	X	X
Prevathon			X	X
Proaxis	X		X	X
Radiant SC				X
Respect	X	X	X	X
Sevin XLR Plus	X		X	X
Stallion	X	X	X	X
Steed	X	X	X	X
Steward 1.5SC				X
Swagger	X	X	X	X
Tracer				X
Transform WG		X		
Triple Crown	X	X	X	X
Warrior II with Zeon Technology	X	X	X	X

X = insecticide labeled for control against this pest.

Soybean

Seed and Foliar Insecticides

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Alias 4F imidacloprid	4A	Soybean aphid, bean leaf beetle, Japanese beetle adult	1.5 fl oz/A	REI is 12 hours. PHI is 7 days. Minimum interval between applications is 7 days. Maximum allowed per crop season is 4.5 fl oz per acre.
Ambush 2EC permethrin	3A	1. Green cloverworm, bean leaf beetle, cabbage looper, velvetbean caterpillar, saltmarsh caterpillar, cutworm, thistle caterpillar 2. Corn earworm, beet armyworm, Japanese beetle, soybean looper, webworms	1. 3.2-6.4 fl oz/A 2. 6.4-12.8 fl oz/A	REI is 12 hours. Can be applied up to 60 days before harvest. Do not graze treated areas or harvest for forage or hay.
Arctic 3.2EC permethrin	3A	1. Bean leaf beetle, cabbage looper, corn rootworm beetle, cutworm, green cloverworm, Japanese beetle, saltmarsh caterpillar, woollybear caterpillar, thistle caterpillar, velvetbean caterpillar 2. Beet armyworm, corn earworm, soybean aphid, soybean looper, webworms	1. 2.0-4.0 fl oz/A 2. 4.0-8.0 fl oz/A	REI is 12 hours. Can be applied up to 60 days before harvest. Do not graze treated areas or harvest for forage or hay.
Asana XL esfenvalerate	3A	1. Green cloverworm, saltmarsh caterpillar, velvetbean caterpillar, woollybear caterpillar 2. Bean leaf beetle, cabbage looper, corn earworm, grasshopper, green stink bug, Japanese beetle, southern green stink bug, soybean aphid	1. 2.9-5.8 fl oz/A 2. 5.8-9.6 fl oz/A	REI is 12 hours. PHI is 21 days. Do not feed or graze livestock on treated fields. Do not apply more than 0.2 lb ai per acre per season.
Baythroid XL beta-cyfluthrin	3A	1. Bean leaf beetle, stink bug, cabbage looper, corn earworm, Japanese beetle, saltmarsh caterpillar, velvetbean caterpillar, webworm, woollybear caterpillar 2. Soybean aphid, grasshoppers 3. Bean leaf beetle (growth stage VC-V2), cutworms, green cloverworm	1. 1.6-2.8 fl oz/A 2. 2.0-2.8 fl oz/A 3. 0.8-1.6 fl oz/A	REI is 12 hours. PHI is 21 days.
Belay clothianidin	4A	Aphids, bean leaf beetle, Japanese beetle, stink bugs	3-4 fl oz/A	REI is 12 hours. PHI is 21 days. Do not graze or feed forage and hay to livestock.
Besiege lambda-cyhalothrin chlorantraniliprole	3A, 28	1. Bean leaf beetle, cabbage looper, corn earworm, corn rootworm beetle adults, cutworm spp., green cloverworm, Mexican bean beetle, painted lady (thistle) caterpillar, potato leafhopper, saltmarsh caterpillar, soybean aphid, thrips spp. (except western flower thrips), velvetbean caterpillar, woollybear caterpillar 2. Armyworm, blister beetle spp., fall armyworm, grasshopper spp., Japanese beetle adult, plant bug spp., silverspotted skipper, stink bug spp., tobacco budworm, webworm spp., yellowstriped armyworm 3. Beet armyworm, soybean looper	1. 5.0 - 8.0 fl oz/A 2. 8.0 - 10.0 fl oz/A 3. 10.0 fl oz/A	REI is 24 hours. PHI is 30 days. Do not graze or harvest treated forage, straw, or hay for livestock feed

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Soybean

Seed and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Cobalt chlorpyrifos + gamma-cyhalothrin	1B, 3A	1. Grasshopper, green cloverworm, velvetbean caterpillar 2. Cabbage looper, cutworm, painted lady caterpillar, saltmarsh caterpillar, soybean aphid, webworm spp., woollybear caterpillar 3. Bean leaf beetle, corn earworm, corn rootworm adult, Japanese beetle, stink bug spp.	1. 7.0-13.0 fl oz/A 2. 13.0-26.0 fl oz/A 3. 19.0-38.0 fl oz/A	REI is 24 hours. Do not apply last treatment within 30 days before harvest.
Cobalt Advanced chlorpyrifos, lambda-cyhalothrin	1B, 3A	1. Grasshopper, green cloverworm, velvetbean caterpillar 2. Cabbage looper, cutworm, painted lady caterpillar, saltmarsh caterpillar, soybean aphid, webworm spp., woollybear caterpillar 3. Bean leaf beetle, corn earworm, corn rootworm adult, Japanese beetle, stink bug spp.	1. 6.0-13.0 fl oz/A 2. 11.0-26.0 fl oz/A 3. 16.0-38.0 fl oz/A	REI is 24 hours. Do not apply last treatment within 30 days before harvest.
Cruiser thiamethoxam	4A	Aphid, bean leaf beetle, grape colaspis, seedcorn maggot, thrips, white grub, and wireworm	Available as Cruiser Maxx, Cruiser Maxx Plus, Cruiser Maxx Vibrance, and other formulations. See labels.	See labels.
Delta Gold 1.5 EC deltamethrin	3A	1. Green cloverworm, corn earworm, cutworms 2. Bean leaf beetle, loopers, corn rootworm beetle, grasshoppers, Japanese beetle, saltmarsh caterpillar, soybean aphid, stink bugs, webworm, yellow woollybear	1. 1.0-1.5 fl oz/A 2. 1.5-2.4 fl oz/A	REI is 12 hours. PHI is 21 days. Do not allow livestock to graze treated forage or feed treated hay to livestock.
Dimethoate 4E dimethoate	1B	Mexican bean beetle, spider mites, aphids, bean leaf beetle, leafhoppers	1.0 pt/A	REI is 48 hours. PHI is 21 days.
Dimilin 2L diflubenzuron	15	1. Velvetbean caterpillar, green cloverworms 2. Grasshoppers 3. Beet armyworm, fall armyworm, soybean looper	1. 2.0-4.0 fl oz/A 2. 2.0 fl oz/A 3. 4.0 fl oz/A	DIMILIN is not effective in controlling grasshoppers once they reach the adult stage. Do not enter or allow worker entry into treated areas during the 12-hour REI. Do not make more than 2 applications per season. Do not apply within 21 days of harvest. Do not apply within 25 feet by ground or 150 feet by air of bodies of water. All applications must include a 25-foot vegetative buffer strip within the buffer zone to decrease runoff.
DiPel ES and several others <i>Bacillus thuringiensis</i> Cry toxin	11	Green cloverworm, velvetbean caterpillar, soybean looper, saltmarsh caterpillar	See product label	See product label.

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Soybean

Seed and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Endigo ZC lambda-cyhalothrin + thiamethoxam	3A, 4A	1. Cabbage looper, corn earworm, corn rootworm beetle adults, cutworm spp., green cloverworm, Mexican bean beetle, painted lady (thistle) caterpillar, potato leafhopper, saltmarsh caterpillar, soybean aphid, thrips spp., velvet bean caterpillar, woollybear caterpillar 2. Armyworm, bean leaf beetle, brown marmorated stink bug, fall armyworm, grasshopper spp., stink bug spp. (except brown and red banded), Japanese beetle adult, sliverspotted skipper, webworm spp., yellowstriped armyworm 3. Brown stink bug, red banded stink bug	1. 3.5-4.0 fl oz/A 2. 4.0-4.5 fl oz/A 3. 4.5 fl oz/A	REI is 24 hours. PHI is 30 days. Allow at least 7 days between applications. Do not graze or harvest treated soybean forage, straw or hay for livestock feed. Do not apply this product within 45 days of planting if soybean seeds were treated with a neonicotinoid product. Do not exceed a total of 9.0 fl. oz of Endigo ZC or 0.06 lb a.i. of lambda-cyhalothrin containing products or 0.125 lb a.i of foliar applied thiamethoxam containing products per acre per growing season.
Gauche 600 imidacloprid	4A	Seed corn maggot, soybean aphid, bean leaf beetle	1.6-3.2 fl oz per cwt of seed	Do not graze or feed livestock on soybean forage or hay.
Hero zeta-cypermethrin + bifenthrin	3A	1. Bean leaf beetle, cutworms, grasshoppers, green cloverworm, painted lady caterpillar 2. Armyworm, corn earworm, corn rootworm adult, dectes stem borer, looper, Japanese beetle, saltmarsh caterpillar, soybean aphid, stink bug, thrips, velvetbean caterpillar, webworm, woollybear caterpillar 3. Twospotted spider mite	1. 2.6-6.1 oz/A 2. 4.0-10.3 oz/A 3. 10.3 oz/A	REI is 12 hours. Do not make applications less than 30 days apart. Do not graze or harvest treated soybean forage, straw, or hay for livestock feed. PHI is 21 days.
Inovate clothianidin	4A	1. Aphids, bean leaf beetle, leafhoppers, seed corn maggot, white grubs, wireworm	1. 4.74 fl oz/100 lb of seed	Do not graze or feed soybean forage and hay to livestock.
Intrepid 2F methoxyfenozide	18	Armyworm, green clover worm, saltmarsh caterpillar, soybean looper, velvet bean caterpillar	4-8 fl oz/A	REI is 4 hours. Do not apply within 7 days of harvest of hay and forage or within 14 days of harvest of seed.
Justice acetamiprid, bifenthrin	3, 4A	1. Aphid species, bean leaf beetle, leafhoppers, loopers (except soybean looper) 2. Armyworm species, soybean looper	1. 2.5-3.0 fl oz/A 2. 3.0-5.0 fl oz/A	REI is 12 hours. PHI is 30 days. No more than 2 applications per season. Do not graze or use cut forage or hay as animal feed.
Lannate LV methomyl	1A	1. Green cloverworm, velvetbean caterpillar 2. Soybean aphid 3. Beet armyworm, saltmarsh caterpillar, bean leaf beetle, fall armyworm, thrips	1. 0.40-0.75 pt/A 2. 0.5-1.0 pt/A 3. 0.75-1.0 pt/A	REI is 48 hours. PHI is 14 days for beans. PHI is 3 days for forage and 12 days for hay.
Leverage 360 imidacloprid + cyfluthrin	3A, 4A	Aphid, bean leaf beetle, cabbage looper, corn rootworm adult, cutworms, grasshopper, green cloverworm, Japanese beetle, saltmarsh caterpillar, corn earworm, stink bug, thrips (foliage feeding thrips only), velvetbean caterpillar, whiteflies (other than sweetpotato whitefly)	2.8 fl oz/A	REI is 12 hours. PHI for seed is 21 days, feeding of dry vines is 15 days. Green forage may be fed 15 days after last application. Minimum interval between applications is 7 days

*REI = Restricted Entry Interval PHI = Preharvest Interval

Soybean

Seed and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Methyl EC methyl parathion	1B	1. Climbing cutworm, garden webworm, aphid, stink bug, two-spotted mites, velvet bean caterpillars 2. Fall armyworm, green cloverworms	1. 0.75-1.0 pt/A 2. 1.0 pt/A	Do not apply within 20 days of harvest or grazing. REI is 4 days. Do not make more than 2 applications per year.
Mustang Maxx zeta-cypermethrin	3A	1. Painted lady caterpillar, saltmarsh caterpillar, cutworms 2. Alfalfa caterpillar, armyworm, yellowstriped armyworm, bean leaf beetle, corn earworm, corn rootworm beetle, green cloverworm, Japanese beetle, soybean aphid, velvetbean caterpillar, webworm, woollybear caterpillar 3. Beet armyworm, fall armyworm, grasshopper spp., looper spp., stink bug spp., whitefly spp.	1. 1.28-4.0 fl oz / A 2. 2.8-4.0 fl oz/A 3. 3.2- 4.0 fl oz/A	REI is 12 hours. Do not make applications less than 7 days apart. 21 day preharvest interval. Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.
Nufos 4E chlorpyrifos	1B	1. Grasshopper, green cloverworm, velvetbean caterpillar, spider mites 2. Armyworms, bean leaf beetle, corn earworm, cutworms, saltmarsh caterpillar and other woollybears, soybean aphid, thistle caterpillar	1. 0.5-1.0 pt/A 2. 1.0-2.0 pt/A	REI is 24 hours. PHI is 28 days. 14 days between applications with a 6.0 pt maximum per season, 3 applications maximum per year. Do not allow meat or dairy animals to graze in treated areas or feed treated forage, hay, or straw to meat or dairy animals.
PennCap-M methyl parathion	1B	1. Stink bug, soybean aphids 2. Corn rootworm adults 3. Bean leaf beetle, grasshopper, green cloverworm, Japanese beetle, soybean looper, thrip, velvetbean caterpillar	1. 1.0-3.0 pt/A 2. 1.0-2.0 pt/A 3. 2.0-3.0 pt/A	REI is 11 days. Do not apply within 30 days of harvest or grazing. Do not make more than 2 applications per year. Do not apply more than once every 7 days.
Poncho/VOTiVO	4A	Aphids, bean leaf beetle, seed corn maggot, white grubs, wireworm	0.13 mg/ai/seed	Do not graze or feed forage and hay to livestock.
Pounce 25 WP permethrin	3A	1. Bean leaf beetle, cabbage looper, corn rootworm beetle, green cloverworm, Japanese beetle, saltmarsh caterpillar, woollybear caterpillar, thistle caterpillar, velvetbean caterpillar 2. Beet armyworm, corn earworm, soybean looper, webworms	1. 3.2-6.4 fl oz/A 2. 6.4-12.8 fl oz/A	REI is 12 hours. PHI is 60 days. Do not graze or feed soybean forage or hay.
Proaxis gamma-cyhalothrin	3A	1. Bean leaf beetle, cabbage looper, corn earworm, cutworm spp., green cloverworm, painted lady caterpillar, saltmarsh caterpillar, soybean aphid, velvetbean caterpillar, woollybear caterpillar, corn rootworm beetle 2. Grasshopper, Japanese beetle, stink bug, webworm 3. Beet armyworm	1. 1.92-3.20 fl oz/A 2. 3.20-3.84 fl oz/A 3. 3.84 fl oz/A	REI is 24 hours. PHI is 45 days. Do not graze or harvest treated soybean forage, straw or hay for livestock feed.
Prevathon chlorantraniprole	28	1. Corn earworm, beet armyworm, fall armyworm, cabbage looper, green cloverworm, southern armyworm, soybean looper, tobacco budworm, velvetbean caterpillar 2. Grasshoppers	1. 14.0 -20.0 fl oz/A 2. 8.0 – 20.0 fl oz/A	REI is 4 hours. PHI is 1 day. Make no more than 4 applications per acre per crop. Do not apply more than 60 fl oz per acre per year. Minimum interval between treatments is 3 days.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Soybean

Seed and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Radiant SC spinetoram	5	Corn earworm, cabbage looper, green cloverworm, saltmarsh caterpillar, soybean looper, true armyworm, velvetbean caterpillar	2.0-4.0 fl oz / A	REI is 4 hours. PHI is 28 days.
Respect EC zeta-cypermethrin	3A	1. Cutworm spp., painted lady caterpillar, saltmarsh caterpillar, cutworms 2. Alfalfa caterpillar, armyworm, yellowstriped armyworm, bean leaf beetle, corn earworm, corn rootworm beetle, green cloverworm, Japanese beetle, soybean aphid, velvetbean caterpillar, webworm, woollybear caterpillar 3. Beet armyworm, fall armyworm, grasshopper spp., looper spp., stink bug spp., whitefly spp.	1. 1.28-4.0 fl oz / A 2. 2.8-4.0 fl oz / A 3. 3.2- 4.0 fl oz / A	REI is 12 hours. PHI is 21 days. Do not make applications less than 7 days apart. Do not graze or harvest treated soybean forage, straw, or hay for livestock feed.
Sevin XLR Plus carbaryl	1A	1. Bean leaf beetle, green cloverworm, velvetbean caterpillar 2. Alfalfa caterpillar 3. Armyworm, cutworm, stink bugs, webworms 4. Painted lady caterpillar (thistle caterpillar), saltmarsh caterpillar, yellowstriped armyworm	1. 0.5-1.0 qt / A 2. 1.0 qt / A 3. 1.0-1.5 qt / A 4. 1.5 qt / A	REI is 12 hours. Do not apply within 14 days of grazing or harvest for forage, or within 21 days of harvest of seed or hay. Sevin XLR is registered for grasshopper control on many crops (multiple sites), including soybeans. Check label for more information.
Stallion zeta-cypermethrin chlorpyrifos	3A, 1B	1. Cutworm spp., painted lady (thistle) caterpillar, saltmarsh caterpillar 2. Bean leaf beetle, dectes stem borer, grasshopper spp., green cloverworm, Japanese beetle, soybean aphid, woollybear caterpillar 3. Stink bug spp.	1. 3.75-11.75 fl oz / A 2. 5.0-11.75 fl oz / A 3. 9.25-11.75 fl oz / A	REI is 24 hours. PHI is 28 days. 14 days between applications, with no more than 3 applications per season. Do not allow meat or dairy animals to graze in treated areas or feed treated forage, hay or straw to meat or dairy animals.
Steed zeta-cypermethrin bifenthrin	3A	1. Cutworm spp., green cloverworm, painted lady (thistle) caterpillar 2. Armyworm spp., bean leaf beetle, corn earworm, corn rootworm adult, dectes stem borer adult, grasshopper spp., Japanese beetle adult, looper spp., saltmarsh caterpillar, soybean aphid, stink bug spp., velvetbean caterpillar, webworm	1. 2.5-3.5 fl oz / A 2. 2.5-4.7 fl oz / A	REI is 12 hours. PHI is 21 days. 30 days between applications, with no more than 28.1 fl oz / A per season.
Steward EC indoxacarb	22	Beet armyworm, cabbage looper, corn earworm, fall armyworm, green cloverworm, soybean looper, yellowstriped armyworm	4.6-11.3 fl oz / A	REI is 12 hours. PHI is 21 days. Do not feed or graze livestock on treated fields.
Swagger bifenthrin and imidacloprid	3A, 4A	Aphids, bean leaf beetle, cloverworm, corn earworm, corn rootworm beetle, cutworms, fall armyworm, grasshoppers, Japanese beetle adult, loopers, saltmarsh caterpillar, stink bugs, two-spotted spider mite, western bean cutworm, webworms, whitefly, yellow striped armyworm	7.6-12.2 fl oz / A	REI is 12 hours. Maximum of 2 applications per season. Minimum 30 day interval between applications. PHI is 18 days.

*REI = Restricted Entry Interval PHI = Preharvest Interval

Soybean

Seed and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Tracer spinosad	5	1. Green clover worm, soybean looper, true armyworm, velvet bean caterpillar 2. Fall armyworm, yellowstriped armyworm, beet armyworm, corn earworm, saltmarsh caterpillar	1. 1.0-2.0 fl oz/A 2. 1.5-2.0 fl oz/A	REI is 4 hours. PHI is 28 days. Do not apply more than a total of 6 fl oz per acre per year. Do not feed treated forage or hay to meat or dairy animals.
Transform WG sulfoxaflor	4C	Soybean aphid	0.75-1.0 oz/A	REI is 24 hours. PHI is 7 days for grain, forage or hay. Maximum 4 applications per crop. Do not make applications less than 14 days apart. Do not make more than two consecutive applications per crop. Do not apply more than 8.5 oz per acre per year. No more than two applications to forage.
Triple Crown clothianidin, zeta-cypermethrin, and bifenthrin	3, 4A	1. Bean leaf beetle, cutworms, green cloverworm, leafhopper, thistle caterpillar, soybean aphid 2. Dectes stem borer, grasshoppers, Japanese beetle adult, loopers, rootworm adult, stink bugs, woollybear caterpillar	1. 3.5-4.8 fl oz/A 2. 4.8 fl oz/A	REI is 12 hours. PHI is 21 days. Do not graze or harvest treated soybean forage, straw, or hay for livestock feed. Maximum 14.2 fl oz/A per season.
Warrior II with Zeon Technology lambda-cyhalothrin	3A	1. Bean leaf beetle, cabbage looper, corn earworm, corn rootworm beetle, cutworm, green cloverworm, painted lady caterpillar, saltmarsh caterpillar, soybean aphid, thrips (except western flower thrip), velvetbean caterpillar, woollybear caterpillar 2. Fall armyworm, grasshopper, Japanese beetle adult, stink bug, webworm, yellowstriped armyworm	1. 0.96-1.60 fl oz/A 2. 1.60-1.92 oz/A	REI is 24 hours. Do not graze or harvest treated soybean forage, straw or hay for livestock feed. PHI is 30 days.

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Wheat

Seed and Foliar Insecticide Efficacy

Insecticide	Aphids	Armyworm	Army Cutworm	Cereal Leaf Beetle	Grasshopper	Pale Western Cutworm	Wireworm
Seed Treatment							
Cruiser 5FS	X				X		X
Gaicho	X				X		X
NipsIt Inside	X				X		X
Foliar-Applied							
Baythroid XL	X	X	X		X	X	
Besiege	X	X	X	X	X	X	
Cobalt Advanced	X	X	X		X	X	
Dimethoate	X						
DiPel		X					
Entrust		X					
Lannate	X	X		X			
Lorsban 4E	X			X	X		
Malathion	X	X			X		
Methyl 4EC	X	X			X		
Mustang Maxx EC	X	X	X		X	X	
PennCap-M	X	X			X		
Proaxis	X	X	X		X	X	
Radiant SC		X		X			
Respect	X	X	X		X	X	
Sevin XLR Plus		X					
Stallion	X	X	X		X	X	
Success		X					
Tracer		X		X			
Warrior	X	X	X		X	X	

X = insecticide labeled for control against this pest.

Wheat

Seed and Foliar Insecticides

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Baythroid XL beta-cyfluthrin	3A	1. Army cutworm, cutworm 2. Aphids, grasshopper, pale western cutworm	1. 1.0-1.8 oz/A 2. 1.8-2.4 oz/A	The pre-grazing or foraging interval is 3 days. PHI is 30 days. REI is 12 hours. Maximum of 4.8 fl oz/A allowed per crop season. Only effective against small grasshopper nymphs.
Besiege Lambda-cyhalothrin and Chlorantraniliprole	3,28	1. Army cutworm, cutworm species 2. Armyworm, bird cherry-oat aphid, cereal leaf beetle, English grain aphid, fall armyworm, flea beetle species, grasshopper species, Hessian fly, orange blossom wheat midge, Russian wheat aphid, stink bug species, yellowstriped armyworm 3. Grass sawfly 4. Chinch bug, corn leaf aphid, greenbug, mite species	1. 5.0-8.0 fl oz/A 2. 6.0-10.0 fl oz/A 3. 8.0-10.0 fl oz/A 4. 10.0 fl oz/A	PHI is 30 days. REI is 24 hours. Do not exceed a total of 18.0 fl oz of Besiege or 0.06 lb ai of lambda-cyhalothrin products or 0.2 lb ai of chlorantraniliprole products per acre per year.
Cobalt Advanced chlorpyrifos and gamma cyhalothrin	1B, 3A	1. Aphids, grasshopper 2. Army cutworm, cutworm, armyworm	1. 7.0-13.0 fl oz/A 2. 13.0-25.0 fl oz/A	Do not apply within 14 days of harvest for forage and hay, and within 28 days of harvest for grain and straw. Do not allow meat or dairy animals to graze or otherwise feed on treated forage within 7 days after last treatment. Do not feed straw from treated wheat within 30 days of application. REI is 24 hours.
Cruiser 5FS thiamethoxam	4A	1. Bird cherry-oat aphid, English grain aphid, greenbug, Hessian fly, Russian wheat aphid 2. Wireworm 3. Grasshopper	1. 0.75-1.33 fl oz/100 lb seed 2. 0.19 to 0.5 fl oz/100 lb seed 3. 1.33 fl oz/100 lb seed	120 days plant-back interval for non-labeled crops
Dimethoate 4EC dimethoate	1B	1. Aphid 2. Grasshopper	1. 0.5-0.75 pt/A 2. 0.75 pt/A	Do not graze immature plants within 14 days of application. PHI is 35 days. REI is 48 hours. Do not make more than 2 applications per season.
DiPel ES <i>Bacillus thuringiensis</i>	11	Armyworm	2.0-4.0 pt/A	No pre-harvest interval. REI is 4 hours. Only effective against small armyworms.
Entrust spinosad	5	Armyworm, webworm	1.0-2.0 fl oz/A	PHI is 21 days for grain or straw and 14 days for forage or hay. REI is 4 hours. Do not apply more than 5.6 fl oz per acre per year
Gaicho 600 imidacloprid	4A	1. Bird cherry-oat, English grain, greenbug, Russian wheat aphid, Hessian fly 2. Wireworm 3. Grasshopper	1. 0.8-2.4 fl oz/100 lb seed 2. 0.13-0.26 fl oz/100 lb seed 3. 1.2-2.4 fl oz/100 lb seed	Grazing interval is 45 days. 12 month plant-back interval for non-labeled crops. Will suppress grasshopper damage.
Lannate LV methomyl	1A	Armyworm, aphid, cereal leaf beetle	0.75-1.5 pt/A	Do not graze or feed treated forage or hay to livestock within 10 days of last application. PHI is 7 days. REI is 48 hours.
Lorsban Advanced Lorsban 4E chlorpyrifos	1B	1. Aphid, grasshopper 2. Army cutworm, armyworm, cereal leaf beetle	1. 0.5-1.0 pt/A 2. 1.0 pt/A	PHI is 28 days. Do not graze or feed treated forage to livestock within 14 days of application. REI is 24 hours. Effectiveness reduced on adult grasshoppers. Will only give suppression against armyworm.
Malathion 8 malathion	1B	Armyworms, aphids, grasshoppers	1.0-1.25 pt/A	REI is 12 hours. PHI is 7 days.

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Wheat

Seed and Foliar Insecticides *(continued)*

Insecticide Active Ingredient	Mode of Action	Target Pest	Rate	Comments*
Methyl 4EC methyl parathion	1B	1. Aphid 2. Grasshopper 3. Armyworm	1. 0.5-1.5 pt/A 2. 0.75-1.0 pt/A 3. 1.5 pt/A	REI is 4 days (5 days where rainfall is less than 25 inches per year). PHI is 15 days
Mustang Maxx zeta-cypermethrin	3A	1. Army cutworm 2. Armyworm, pale western cutworm 3. Aphid, grasshopper	1. 1.28-4.0 oz/A 2. 1.76-4.0 oz/A 3. 3.2-4.0 oz/A	PHI is 14 days for grain, forage and hay. REI is 12 hours. Do not apply more than 20 fl oz per acre per year.
NipsIt Inside clothianidin	4A	1. Aphid 2. Grasshopper	1. 0.75-1.79 fl oz/100 lb seed 2. 1.79 fl oz/100 lb seed	30-day plant back restriction on dry beans.
PennCap-M methyl parathion	1B	Aphid, grasshopper, armyworm	2.0-3.0 pt/A	REI is 31 days. PHI is 14 days. Highly toxic to bees. Do not apply more than 6 pt per acre per year.
Proaxis gamma-cyhalothrin	3A	1. Army cutworm, cutworm 2. Armyworm, grasshopper, Oat bird-cherry aphid, Russian wheat aphid, English grain aphid 3. Greenbug, corn leaf aphid	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A 3. 3.84 oz/A	PHI is 30 days. REI is 24 hours. Do not apply more than 0.48 pt per acre per year.
Radiant SC spinetoram	5	1. Cereal leaf beetle 2. Corn earworm, armyworms, webworms	1. 2.0-6.0 fl oz/A 2. 3.0-6.0 fl oz/A	REI is 4 hours. Do not apply within 21 days of grain or straw harvest or within 3 days of fodder, forage or hay harvest.
Sevin XLR PLUS carbaryl	1A	Armyworm, fall armyworm, grasshoppers	1.0-1.5 qt/A	PHI is 21 days for grain or straw. Do not apply within 7 days of harvest or grazing of forage. REI is 12 hours.
Stallion zeta-cypermethrin	3A	1. Army cutworm, pale western cutworm 2. Bird cherry oat aphid, grasshopper spp. 3. Armyworm, grain aphids	1. 3.75-11.75 fl oz/A 2. 5.0-11.75 fl oz/A 3. 9.25-11.75 fl oz/A	REI is 24 hours. PHI is 14 days for forage, 28 days for grain.
Success spinosad	5	Armyworm	3.0-6.0 fl oz/A	Do not enter or allow others to enter the treated area until sprays have dried. Do not apply within 21 days of grain or straw harvest or within 3 days of forage, fodder, or hay harvest. Do not apply more than 19 fl oz per acre per year. Effectiveness reduced on adult grasshoppers.
Tracer spinosad	5	1. Cereal leaf beetle 2. Armyworm	1. 1.0-3.0 fl oz/A 2. 1.5-3.0 fl oz/A	Do not apply within 21 days of grain or straw harvest, or within 3 days of forage or hay harvest. Do not apply more than 9 fl oz per acre per year.
Warrior II with Zeon Technology lambda-cyhalothrin	3A	1. Army cutworm, cutworm 2. Armyworm, grasshopper, Russian wheat aphid, bird cherry-oat aphid, English grain aphid 3. Corn leaf aphid, greenbug	1. 1.92-3.2 oz/A 2. 2.56-3.84 oz/A 3. 3.84 oz/A	Do not graze or harvest forage as feed within 7 days after treatment. Do not feed treated straw within 30 days after treatment. PHI is 30 days. REI is 24 hours. Do not apply more than 3.84 fl oz per acre per year.

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