



Control of Insect Pests of Field Crops

Bulletin 545

SOYBEAN

Insecticide application to manage soybean insect pests may be required at any time throughout the development of the crop. At planting time, seed treatments may be warranted for protection against seed maggots. On early-planted beans, rescue treatment following emergence may be required to control overwintering bean leaf beetles if severe stand loss appears likely. Up to bloom, soybean can tolerate up to 40 percent defoliation by the defoliating pests without an economic loss in yield that would justify a rescue treatment. Soybean becomes more susceptible to defoliation from bloom to pod-fill, and defoliation should not be allowed to exceed 15 percent during that time. Once pods have set, pod injury due to bean leaf beetle may be problem, especially on early-planted beans. If pod injury is detected, rescue treatment is warranted when injury of 10 percent or more of the pods appears imminent.

Following is a listing of insecticide products labeled for control of the pests that affect soybean. An asterisk (*) indicates that use is restricted to certified applicators only.

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Bean Leaf Beetle	Ambush* 25W (permethrin)	3.2 - 6.4 fl. oz.	60	Treatment is warranted when defoliation is greater than 40% pre-bloom, 15% bloom through pod fill or 25% after pod fill but prior to plant yellowing.
	Arctic* 3.2 EC (permethrin)	2 - 4 fl. oz.	60	
	Adjourn* (esfenvalerate)	5.8 - 9.6 fl. oz.	21	
	Asana* XL (esfenvalerate)	5.8 - 9.6 fl. oz.	21	Treatment is also warranted when greater than 10% of the pods show feeding damage.
	Baythroid* (cyfluthrin)	1.6 - 2.8 fl. oz. (2 or XL)	45	
	Carbaryl (carbaryl)	½ - 1 qt 4L ¾ - 1¼ lb 80S	14 14	The disease Bean Pod Mottle Virus is transmitted by bean leaf beetles and may be important some years especially for producers growing seed for seed or food grade soybean.
	Chlorpyrifos* (chlorpyrifos)	1 - 2 pt. 4E AG	28	
	Cruiser 5FS (thiamethoxam)	1.28 fl. oz./cwt seed	na	
	Delta Gold* (deltamethrin)	1.5 - 1.9 fl. oz.	21	See Fact Sheet FC-23 for additional information.
	Dimethoate (dimethoate)	1 pt. Dimate 4E 1 pt. 400 or 4EC 1.5 pt. 2.67	21 21 21	
	Gaucho 480 (imidacloprid)	2 - 4 fl. oz./cwt seed	na	
	Lannate* (methomyl)	¼ - ¾ lb. SP ¾ - 1 pt. LV	14 14	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Bean Leaf Beetle (cont.)	Larvin 3.2 (thiodicarb)	18 - 30 fl. oz.	28	
	Lorsban* 4E (chlorpyrifos)	1 - 2 pt.	28	
	Mustang Max* (zeta-cypermethrin)	2.8 - 4.0 fl. oz.	21	
	Mystic Z* (lambda-cyhalothrin)	0.96 - 1.6 fl. oz.	30	
	Nufos* 4E (chlorpyrifos)	1 - 2 pt.	28	
	Orthene 97 (acephate)	0.75 - 1.0 lb.	14	
	PennCap-M* (methyl parathion)	2 - 3 pt	20	
	Permethrin* (permethrin)	2 - 4 fl. oz. 3.2 EC 2 - 4 fl. oz. 3.2 AG	60 60	
	Pilot* 4E (chlorpyrifos)	1 - 2 pt.	28	
	Pounce* (permethrin)	2 - 4 fl. oz. 3.2EC 3.2 - 6.4 oz. WP	60 60	
	Proaxis* (gamma-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	0.77 - 1.28	45	
	Silencer* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Sevin (carbaryl)	½ - 1 qt. XLR Plus or 4F ⅝ - 1¼ lb. 80S	14 14	
	Taiga Z* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
	Warhawk* (chlorpyrifos)	1 - 2 pts.	28	
	Warrior* (lambda-cyhalothrin)	1.92 - 3.2 fl. oz.	30	
	Yuma* 4E (chlorpyrifos)	1 - 2 pts.	28	
Grasshopper	Adjourn* (esfenvalerate)	5.8-9.6 fl. oz.	21	Grasshopper damage to soybean is generally concentrated along the field edges especially grassy ditch banks and road-ways. Such injury may build up during a growing season, possibly damaging pods in the late summer or early fall. Rescue treatment of grasshoppers may be warranted when such damage is combined with one or more other defoliating insects feeding on soybean.
	Asana* XL (esfenvalerate)	5.8 - 9.6 fl. oz.	21	
	Baythroid* (cyfluthrin)	2.0 - 2.8 fl. oz. (2 or XL)	45	
	Carbaryl (carbaryl)	½ - 1.5 qt 4L ⅝ - 1¼ lb 80S	14 14	
	Chlorpyrifos* (chlorpyrifos)	½ - 1 pt. 4E AG	28	
	Delta Gold* (deltamethrin)	1.5 - 1.9 fl. oz.	21	
	Dimethoate (dimethoate)	1 pt. (Dimate 4E) 1 pt. 400 or 4EC 1.5 pt. 2.67	21 21 21	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Grasshopper (cont.)	Dimilin 2L (diflubenzuron)	2 fl. oz.	21	
	Furadan* 4F (carbofuran)	¼ - ½ pt.	21	
	Lorsban* 4E (chlorpyrifos)	½ - 1 pt.	28	
	Mustang MAX* (zeta-cypermethrin)	3.2 - 4.0 oz.	21	
	Mystic Z* (lambda-cyhalothrin)	1.5 - 1.92 fl. oz.	45	
	Nufos* 4E (chlorpyrifos)	½ - 1 pt	28	
	Orthene 97 (acephate)	0.25 - 0.5 lb.	14	
	Penncap-M* (methyl parathion)	2 - 3 pt	20	
	Pilot* 4E (chlorpyrifos)	½ - 1 pt.	28	
	Proaxis* (gamma-cyhalothrin)	3.20 - 3.84 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	1.28 - 1.54 fl. oz.	45	
	Sevin (carbaryl)	½ - 1½ qt. 4L or LXR ⅝ - 1¼ lb. 80S	14 14	
	Silencer* (lambda-cyhalothrin)	3.20 - 3.84 fl. oz.	45	
	Taiga Z* (lambda-cyhalothrin)	3.20 - 3.84 fl. oz.	30	
	Warhawk* (chlorpyrifos)	½ - 1 pt.	28	
	Warrior* (lambda-cyhalothrin)	3.20 - 3.84 fl. oz.	30	
Yuma* 4E (chlorpyrifos)	½ - 1 pt.	28		
Green Cloverworm	<i>Bacillus thuringiensis</i> (several Bt products)	Refer to label for rate	0	Rescue treatment is recommended when defoliation levels are greater than 40 percent pre-bloom; greater than 15 percent from bloom to pod-fill; and greater than 25 percent from full pod to harvest. Leaves are not damaged after plants start to turn yellow.
	Ambush* 25W (permethrin)	3.2 - 6.4 oz.	60	
	Arctic* 3.2 EC (permethrin)	2 - 4 fl. oz.	60	
	Adjourn* (esfenvalerate)	2.9 - 5.8 fl. oz.	21	
	Asana* XL (esfenvalerate)	2.9 - 5.8 fl. oz.	21	
	Baythroid* (cyfluthrin)	0.8 - 1.6 fl. oz. (2 or XL)	45	
	Carbaryl (carbaryl)	½ - 1 qt. 4L, ⅝ - 1¼ lb. 80S	14	
	Chlorpyrifos* (chlorpyrifos)	½ - 1 pt. 4E AG	28	
	Delta Gold* (deltamethrin)	1.0 - 1.5 fl. oz.	21	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Green Cloverworm (cont.)	Dimilin (diflubenzuron)	2 - 4 oz. 25W or 2L	21	
	Entrust (spinosad)	1 - 2 oz.	28	
	Intrepid* 2F (methoxyfenozide)	4 - 8 fl. oz.	14	
	Lannate* (methomyl)	¼ - ½ lb. SP, ¾ - 1½ pt. LV	14	
	Larvin (thiodicarb)	10 - 30 fl. oz.	28	
	Lorsban* 4E (chlorpyrifos)	½ - 1 pt	28	
	Mustang* MAX (zeta-cypermethrin)	2.8 - 4.0 oz.	21	
	Mystic Z* (lambda-cyhalothrin)	0.96 - 1.6 fl. oz.	30	
	Nufos* 4E (chlorpyrifos)	½ - 1 pt.	28	
	Orthene 97 (acephate)	0.75 - 1.0 lb.	14	
	PennCap-M* (methyl parathion)	2 - 3 pt.	20	
	Permethrin* (permethrin)	2 - 4 oz. 3.2AG 2 - 4 fl. oz. 3.2 EC	60 60	
	Pilot* 4E (chlorpyrifos)	½ - 1 pt.	28	
	Pounce* (permethrin)	2 - 4 fl. oz. 3.2EC 3.2 - 6.4 oz. 25WP	60 60	
	Proaxis* (gamma-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	0.77 - 1.28 fl. oz.	45	
	Sevin (carbaryl)	½ - 1 qt. XLR Plus or 4F ⅝ - 1¼ lb. 80S	14 14	
	Silencer* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Steward (indoxacarb)	5.6 - 11.3 fl. oz.	21	
	Taiga Z* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
	Tracer (spinosad)	1 - 2 fl. oz.	28	
	Warhawk* (chlorpyrifos)	½ - 1 pt.	28	
Warrior* (lambda-cyhalothrin)	1.92 - 3.2 fl. oz.	30		
Yuma* 4E (chlorpyrifos)	½ - 1 pt.	28		
Japanese Beetle	Adjourn* (esfenvalerate)	5.8 - 9.6 fl. oz.	21	Rescue treatment is recommended when defoliation levels are greater than 40 percent pre-bloom; greater than 15 percent from bloom to pod-
	Ambush* 25W (permethrin)	6.4 - 12.8 fl. oz.	60	
	Arctic* 3.2 EC (permethrin)	2 - 4 fl. oz.	60	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Japanese Beetle (cont.)	Asana* XL (esfenvalerate)	5.8 - 9.6 fl. oz.	21	fill; and greater than 25percent from full pod to harvest. See Fact Sheet FC-22 for additional information.
	Baythroid* (cyfluthrin)	1.6 - 2.8 fl. oz. (2 or XL)	45	
	Carbaryl (carbaryl)	½ - 1 qt. 4L ⅝ - 1¼ lb. 80S	14 14	
	Delta Gold* (deltamethrin)	1.5 - 1.9 fl. oz.	21	
	Mustang Max* (zeta-cypermethrin)	2.8 - 4.0 fl. oz.	21	
	Mystic Z* (lambda-cyhalothrin)	1.6 - 1.92 fl. oz.	45	
	Penncap-M* (methyl parathion)	2 - 3 pt.	20	
	Permethrin* (permethrin)	2 - 4 oz. 3.2 AG 2 - 4 fl. oz. 3.2 EC	60 60	
	Pounce* (permethrin)	2 - 4 oz. 3.2 EC 3.2 - 6.4 oz. 25WP	60 60	
	Proaxis* (gamma-cyhalothrin)	3.20 - 3.84 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	1.28 - 1.54 fl. oz.	45	
	Sevin (carbaryl)	½ - 1 qt. 4F or XLR Plus ⅝ - 1¼ lb. 80S	14 14	
	Silencer* (lambda-cyhalothrin)	3.20 - 3.84 fl. oz.	45	
	Taiga Z* (lambda-cyhalothrin)	3.20 - 3.84 fl. oz.	30	
	Warrior* (lambda-cyhalothrin)	3.20 - 3.84 fl. oz.	30	
Mexican Bean Beetle	Adjourn* (esfenvalerate)	2.9 - 5.8 fl. oz.	21	Rescue treatment is recommended when defoliation levels are greater than 40 percent pre-bloom; greater than 15 percent from bloom to pod-fill; and greater than 25 percent from full pod to harvest. Treatments should be applied only when the observed level of defoliation and numbers of MBB both indicate that damage will increase See Fact Sheet FC-22 for additional information.
	Ambush* 25W (permethrin)	3.2 - 6.4 oz.	60	
	Arctic* 3.2 EC (permethrin)	2 - 4 fl. oz.	60	
	Asana* XL (esfenvalerate)	2.9 - 5.8 fl. oz.	21	
	Baythroid* (cyfluthrin)	1.6 - 2.8 fl. oz. (2 or XL)	45	
	Carbaryl (carbaryl)	½ - 1 qt. 4L ⅝ - 1¼ lb. 80S	14 14	
	Chlorpyrifos* (chlorpyrifos)	1 - 1½ pt. 4E AG	28	
	Delta Gold* (deltamethrin)	1.5 - 1.9 fl. oz.	21	
	Dimethoate (dimethoate)	1 pt. (Dimate 4E) 1 pt. 400 or 4EC 1.5 pt. 2.67	21 21 21	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Mexican Bean Beetle (cont.)	Dimilin (diflubenzuron)	2 - 4 oz. 25W 2 - 4 fl. oz. 2L	21 21	
	Lannate* (methomyl)	¼ - ½ lb. SP ¾ - 1½ pt LV	14 14	
	Larvin (thiodicarb)	18 - 30 fl. oz.	28	
	Lorsban* 4E (chlorpyrifos)	1 - 2 pt.	28	
	Mustang Max* (zeta-cypermethrin)	2.8 - 4.0 fl. oz.	21	
	Mystic Z* (lambda-cyhalothrin)	0.96 - 1.6 fl. oz.	45	
	Nufos* 4E (chlorpyrifos)	1 - 1½ pt.	28	
	Orthene 97 (acephate)	0.75 - 1.0 lb.	14	
	PennCap-M* (methyl parathion)	2 - 3 pt.	20	
	Permethrin* (permethrin)	2 - 4 oz 3.2 AG 2 - 4 fl. oz. 3.2 EC	60 60	
	Pilot* 4E (chlorpyrifos)	1 - 1½ pt.	28	
	Pounce* (permethrin)	2 - 4 fl. oz. 3.2EC 3.2 - 6.4 oz. 25WP	60 60	
	Proaxis* (gamma-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	0.77 - 1.28 fl. oz.	45	
	Sevin (carbaryl)	½ - 1 qt. 4F or XLR Plus ¾ - 1¼ lb. 80S	14 14	
	Silencer* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Taiga Z* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
	Warhawk* (chlorpyrifos)	1 - 2 pts.	28	
	Warrior* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
	Yuma* 4E (chlorpyrifos)	1 - 2 pts.	28	
Potato Leafhopper	Adjourn* (esfenvalerate)	2.9 - 5.8 fl. oz.	21	Potato leafhopper damage to soybean is normally associated with areas bordering alfalfa early in the season. However, late plantings where the soybean do not have sufficient development of their pubescence and leafhopper populations are large, usually
	Ambush* 25W (permethrin)	3.2 - 6.4 fl. oz.	60	
	Arctic* 3.2 EC (permethrin)	2 - 4 fl. oz.	60	
	Asana* XL (esfenvalerate)	2.9 - 5.8 fl. oz.	21	
	Baythroid* (cyfluthrin)	0.8 - 1.6 fl. oz. (2 or XL)	45	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Potato Leafhopper (cont.)	Carbaryl (carbaryl)	1 qt. 4L 1¼ lb. 80S	14 14	in early June are also susceptible to injury.
	Cruiser 5FS (thiamethoxam)	1.28 fl. oz./cwt seed	na	
	Delta Gold* (deltamethrin)	1.0 - 1.5 fl. oz.	21	
	Dimethoate (dimethoate)	1.5 pt. 2.67 1 pt. 400 or 4EC 1 pt. (Dimate 4E)	21 21 21	
	Mustang Max* (zeta-cypermethrin)	2.8 - 4.0 fl. oz.	21	
	Mystic Z* (lambda-cyhalothrin)	0.96 - 1.6 fl. oz.	45	
	Orthene 97 (acephate)	0.50 - 1.0 lb	14	
	Penncap-M* (methyl parathion)	2 - 3 pt	20	
	Permethrin* (permethrin)	2 - 4 oz. 3.2 AG 2 - 4 fl. oz. 3.2 EC	60 60	
	Pounce* (permethrin)	2 - 4 oz. 3.2EC 3.2 - 6.4 oz. 25WP	60 60	
	Proaxis* (gamma-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	0.77 - 1.28 fl. oz.	45	
	Sevin (carbaryl)	1 qt. 4F or XLR Plus 1¼ lb. 80S	14 14	
	Silencer* (lambda-cyhalothrin)	1.92-3.20 fl. oz.	45	
	Taiga Z* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
	Warrior* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
Seedcorn Maggot	Cruiser 5FS (thiamethoxam)	1.28 fl. oz./cwt seed (commercially applied seed treatment)	na	Seed maggot problems are most likely in situations where (1) high organic matter or decaying vegetation is incorporated into the soil where it attracts egg-laying adult flies (i.e., a green cover crop such as rye or alfalfa is plowed under; and (2) cool, damp soil conditions delay seed germination.
	Gaucho 480 (imidacloprid)	2 - 4 fl. oz./cwt seed (commercially applied seed treatment)	na	
	Kernel Guard Supreme (permethrin)	1.5 oz./50 lb. seed (hopper box seed treatment)	na	
	Kickstart VP (permethrin)	1.5 oz./50 lb. seed (hopper box seed treatment)	na	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Slugs	Deadline MPs (4% metaldehyde)	10 lb.	na	Treatment may be necessary if defoliation is greater than 40% on new growth or stand is being reduced.
	Orcal Slug and Snail Bait (3.5% metaldehyde)	10 lb.	na	
	Metarex (4% metaldehyde)	7.5 lb.	na	
	Sluggo (iron phosphate)	24 - 44 lb.	na	
Soybean Aphid	Adjourn* (esfenvalerate)	5.8 - 9.6 fl. oz.	21	The threshold for spraying for soybean aphid is 250 aphids per plant, beginning at growth stage R1 or the flowering stage, and continuing through pod fill. Aphid numbers should be on the increase before spraying occurs.
	Asana XL* (esfenvalerate)	5.8 - 9.6 fl. oz.	21	
	Baythroid* (cyfluthrin)	2.0 - 2.8 fl. oz. (2 or XL)	45	
	Chlorpyrifos* (chlorpyrifos)	1 - 2 pt. 4E AG	28	
	Delta Gold* (deltamethrin)	1.5 - 1.9 fl. oz.	21	
	Dimethoate (dimethoate)	1.5 pt. 2.67 1 pt. 400 or 4EC 1 pt. (Dimate 4E)	21 21 21	
	Furadan* 4F (carbofuran)	¼ - ½ pt.	21	
	Lorsban* 4E (chlorpyrifos)	1 - 2 pt.	28	
	Mustang Max* (zeta-cypermethrin)	2.8 - 4.0 fl. oz.	21	
	Mystic Z* (lambda-cyhalothrin)	0.96 - 1.6 fl. oz.	45	
	Nufos* 4E (chlorpyrifos)	1 - 2 pt.	28	
	Orthene 97 (acephate)	0.75 - 1.0 lb.	14	
	PennCap-M* (methyl parathion)	1 - 3 pt	20	
	Proaxis* (gamma-cyhalothrin)	1.92 - 3.20 fl. oz.	45	
	Prolex* (gamma-cyhalothrin)	0.77 - 1.28 fl. oz.	45	
	Silencer* (lambda-cyhalothrin)	1.92-3.20 fl. oz.	45	
	Taiga Z* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz	30	
	Warhawk* (chlorpyrifos)	1 - 2 pts.	28	
	Warrior* (lambda-cyhalothrin)	1.92 - 3.20 fl. oz.	30	
	Yuma* 4E (chlorpyrifos)	1 - 2 pts.	28	

Pest	Product Name (Common Name)	Amount per Acre	Pre-Harvest Interval (days)	When to Treat
Spider Mites	Chlorpyrifos* (chlorpyrifos)	½ - 1 pt. 4E AG	28	Rescue treatment is warranted when an entire field (all plants) exhibits some sign of infestation with speckling and some discoloration of the lower leaves. Treatment of soybean for TSM requires thorough penetration of the foliar canopy, preferably by ground-rig application if the chemical applied does not have systemic properties. See Fact Sheet FC-24 for additional information.
	Dimethoate (dimethoate)	1.5 pt. 2.67 1 pt. 400 or 4EC 1 pt. (Dimate 4E)	21 21 21	
	Lorsban-4E* (chlorpyrifos)	1 - 2 pt.	28	
	Mystic Z* (lambda-cyhalothrin)	1.92 fl. oz. (suppression only)	45	
	Nufos* 4E (chlorpyrifos)	½ - 1 pt.	28	
	Pilot* 4E (chlorpyrifos)	½ - 1 pt.	28	
	Proaxis* (gamma-cyhalothrin)	3.84 fl. oz. (suppression only)	45	
	Prolex* (gamma-cyhalothrin)	1.54 fl. oz. (suppression only)	45	
	Silencer* (lambda-cyhalothrin)	3.84 fl. oz. (suppression only)	45	
	Taiga Z* (lambda-cyhalothrin)	3.84 fl. oz. (suppression only)	30	
	Warhawk* (chlorpyrifos)	1 - 2 pts.	28	
	Warrior* (lambda-cyhalothrin)	3.84 fl. oz. (suppression only)	30	
	Yuma* 4E (chlorpyrifos)	1 - 2 pts.	28	