Insect Management in Soybeans – 2026

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NOTE: The label is the law. Be sure to read the label before making any pesticide applications and observe all label restrictions. Check EPA mitigation menus and Bulletins Live Two!

OLF= Other-labeled formulations; see table at end of guide

PHI - pre harvest interval for grain or seed only. Consult label for feeding to livestock

Slugs

Slugs can be significant stand reducing pests in no-till fields with high residue cover, especially when cool, wet conditions persist after planting that slow bean growth. Slugs feed heavily on the cotyledon, resulting in large holes or craters and can destroy the growing point.

The best time to scout is in the early morning hours before the sun warms the soil surface. Look under soil residue, underneath plants, and under loose soil. There are no thresholds for slugs, but 1-3 slugs per ft^2 represent a population to keep a close eye on. There are two common species of slug in fields: gray garden slugs and marsh slugs. Both can cause enough damage to warrant replanting. Marsh slugs are black and present year round, gray garden slugs are a pale, brownish gray in color. Slugs seem to favor soybean and legume or brassica cover crops over other plants. Slugs are not affected by insecticides. However, important natural enemies, such as ground beetles and spiders, are. Pre-plant insecticide use can increase the risk of slug feeding. . Stands below 60-70,000 plants per acre will have reduced yield potential. Stand damage is more serious in wide-row soybean as the canopy will struggle to close gaps. Bait applications should be made prior to seedling emergence and may not always save a stand, but will reduce slug populations that would impact a replant. Once soybean unifoliates are fully expanded, slug feeding is much less likely to reduce the stand. In fields with gray garden slugs, bait applications before gray garden slug egg hatch (typically late March - mid April) will not be effective. Metaldehyde causes slugs to dehydrate. Thus, it is best to apply after moisture when slugs are active but with dry weather in the forecast so they cannot rehydrate.

Molluscicides Labeled for Control of Slugs					
Produc Name	**Active ingredient**	**Product Rate/acre**	**PHI (d)**	**REI (h)**	**Remarks**
Deadline M-Ps	metaldehyde	10 lbs	0	12	CAUTION Spreader must be calibrated to deliver at least 5 pellets/sq. ft. Slug mortality is achieved after 2 to 3 days.
Ferrox AQ	iron phosphate	10-15 lbs	0	4	CAUTION
Sluggo	iron phosphate	20 - 44 lbs	0	0	CAUTION OMRI approved

Seedcorn Maggot

Seedcorn maggot often cause some degree of stand loss in early planted, full season soybean when ground is worked and organic matter (manure, cover crop, corn residue) has been incorporated, and especially during periods of cool, cloudy, and wet weather similar to slugs. There are no rescue treatments. Affected seedlings will have black etching marks on cotyledons, seedlings may fail to emerge, or when they have emerged, wilt before the first trifoliate emerges. Damaged plants may be stunted and may have lost apical dominance before unifoliates emerge. Stands below 60-70,000 plants per acre will have reduced yield potential. Insecticide seed treatments help reduce SCM damage. Some pyrethroid formulations (Mustang Maxx, Elevest, Brigade, Capture LFR, Fastac, Renestra) have adult SCM on their label, but it is unclear how well a broadcast at or immediately after planting would prevent stand loss. Broadcast applications are not currently recommended. In-furrow applications can help reduce SCM damage.

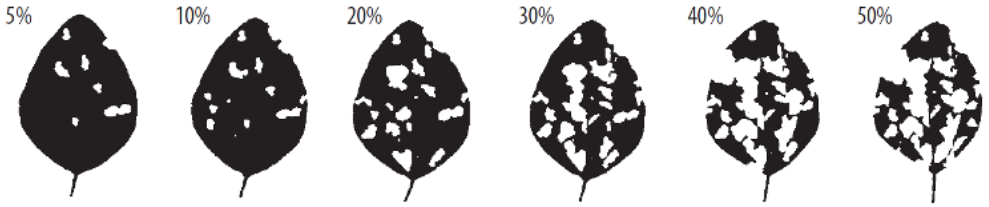
Cutworms

Cutworms are soil dwelling caterpillars that are active at night. They cut soybeans below their cotyledons and may drag the cut plant into their burrows to feed. Cutworm moths are attracted to weedy fields to oviposit. Scout for cutworms and other stand reducing pests weekly or biweekly up to V4. Look for pencil-sized holes in soil. If a rescue treatment is necessary, apply in the evening or at night when cutworms are actively feeding. Pyrethroid (group 3) insecticides and Coragen eVo (group 28) are labeled for cutworm control.

Defoliation Thresholds

Soybeans can tolerate much defoliation before suffering yield loss. Thresholds are conservatively set to 30% during full season vegetative growth and 20% during reproductive stages, increasing after R6. If the canopy is fully closed, even greater defoliation can be tolerated. Thresholds for double crop soybean are 20% during vegetative growth and 10% during reproductive stages, increasing after R6. It is important to estimate field-wide defoliation and to examine the whole plant, not just upper leaves. Some pests like Japanese beetles feed almost exclusively in the upper canopy which makes defoliation look more serious than it really is.

Full season defoliation thresholds: **Pre-Bloom:** 30% **R2-R6.5:** 15% **R6.5:** 35%
Double-crop plantings with poor growth: **Pre-Bloom:** 20% **R2-R6.5:** 10% **R6.5:** 15%



From University of Wisconsin-Maidson early season insect scouting by Laura Flandermeyer, Dane Elmquist, and Emily Bick

Defoliating insects include, but are not limited to, any combination of green cloverworm, bean leaf beetle, blister beetle, Japanese beetle, soybean looper, yellowstriped armyworm, beet armyworm, fall armyworm, grasshoppers.

Bean Leaf Beetle, Mexican Bean Beetle, Japanese Beetle, and Green Cloverworm

Mexican Bean Beetles have become uncommon in Delaware. They typically cause a lace-like skeletonizing defoliation in the mid-late summer months, similar to Japanese beetles. Bean leaf beetle feeding appears as round holes on the leaves, while green cloverworm feeding is more blocky. Seedlings can be defoliated by bean leaf beetles.

A seedling treatment may be warranted if defoliation reaches 40% with 2 – 3 beetles per plant. Thresholds decrease to 15% defoliation during R3 (beginning pod)-R6 (full seed) and increase again until harvest. When scouting for defoliation, it is important to estimate whole-canopy defoliation, not just the most obvious defoliation on the upper leaves. Green cloverworms may be present in large numbers but not reach defoliation thresholds. Large populations sometimes crash before causing yield-impacting defoliation. Numerous predators, parasitoids, and fungal pathogens generally keep cloverworm populations in check.

Bean Leaf Beetles can feed on pods; when scouting, examine pods on several plants. Populations typically peak in early September. Pod damage looks like a window-pane scarring that does not reach the seed. Thresholds from Purdue Extension are as follows:

Pod jury Level	**# beetles / sweep, 30” rows (7-inch rows)**		
	<4 (3)	4-7 (3-5)	7+ (5+)
0-8%	no treatment necessary	resample in 5-7 days	control if pods are green
8-12%	resample in 5-7 days	control if pods are green	control if pods are green to yellow
12+%	control if pods are green and beetles are present	control unless pods are dry	control unless pods are dry

Note: Japanese beetle rates are higher on many labels than the other insects in this table

Insecticides Labed for Bean Leaf Beetle, Mexican Bean Beetle, Japanese Beetle and Green Cloverworm

Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Lannate LV* or OLF	1A	methomyl	0.4 1.5 pt	14	48	DANGER Not labeled for Japanese beetle
Sevin XLR Plus or LF	1A	carbaryl	0.5 - 1 qt.	21	12	CAUTION Can cause phytotoxicity under certain environmental conditions
Dimethoate 4E or O	1B	dimethoate	1.0 pt.	21	48	CAUTION Not labeled for Japanese beetle
Orthene 97 or OLF	1B	acephate.	0.75 1.0 lb.	14	24	CAUTION Not labeled for Japanese beetle
Asana XL* or OLF	3	esfenvalerate	2.9 - 9.6 fl. oz.	21	12	WARNING

Baythroid XL* or OLF	3	beta-cyfluthrin	0.8 - 2.8 fl oz	21	12	WARNING
Brigade 2EC* or OLF	3	bifenthrin	2.1 - 6.4 fl. oz.	18	12	WARNING
Capture LFR* or OLF	3	bifenthrin	2.8 - 8.5 fl oz	18	12	WARNING
Declare*	3	gamma-cyhalothrin	0.77 - 1.54 fl oz	45	24	CAUTION
Delta Gold*	3	deltamethrin	1.5 - 2.4 fl oz	21	12	DANGER
Fastac*	3	alpha-cypermethrin	2.8 - 3.8 fl. oz.	21	12	CAUTION
Hero*	3	zeta-cypermethrin + bifenthrin	2.6 - 10.3 fl. oz.	21	12	CAUTION
Mustang Maxx* or OLF	3	zeta-cypermethrin	2.8 - 4.0 fl. oz.	21	12	WARNING
Perm-Up 3.2 EC* or OLF	3	permethrin	2.0 - 4.0 fl oz	60	12	CAUTION
Tombstone*	3	cyfluthrin	0.8 - 2.8 fl. oz.	45	12	DANGER
Warrior II* or OLF	3	lambda-cyhalothrin	0.96 - 1.92	30	24	WARNING
Argyle OD	3 + 4A	bifenthrin + acetamiprid	5.0 - 9.0 fl oz	30	12	WARNING
Endigo ZC* Endigo ZCX*	3 + 4A	lambda-cyhalothrin + thiamethoxam	3.5 - 4.0 fl. oz.	30	24	WARNING 
Leverage 360*	3 + 4A	imidacloprid + beta-cyfluthrin	2.8 fl. oz.	21	12	CAUTION 
Ridgeback*	3 + 4C	bifenthrin + sulfoxaflor	4.5 - 13.8 fl oz	18	24	WARNING
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl. oz.	21	12	WARNING
Besiege*	28 + 3	lambda-cyhalothrin + chlorantraniliprole	5.0 - 10.0 fl. oz.	30	24	WARNING
Elevest*	28 + 3	bifenthrin + chlorantraniliprole	4.8 - 9.6 fl. oz.	18	12	CAUTION
Vertento	30	isocycloseram	1.1 - 2.0 fl oz	14	12	CAUTION ground equipment only
Insecticides Labeled for Green Cloverworm Only						
Radiant SC	5	spinetoram	2.0 - 4.0 fl. oz.	28	4	CAUTION
Blackhawk	5	spinosad	1.1 - 2.2 oz.	28	4	CAUTION
Intrepid Edge	5 + 18	methoxyfenozide + spinetoram	4.0 - 6.4	28	4	CAUTION
Intrepid 2F or OLF	18	methoxyfenozide	4.0 - 8.0 fl. oz.	14	4	CAUTION
Steward EC or OLF	22	indoxacarb	4.6 - 11.3 fl. oz.	21	12	CAUTION
Coragen or OLF Prevathon Coragen eVo, Vantacor	28	chlorantraniliprole	3.5 - 7.5 fl. oz. 14.0 - 20.0 fl. oz. 1.2 - 2.5 fl. oz	1	4	CAUTION

Thrips

Thrips **rarely require treatment**; however, early season injury to drought-stressed plants may occasionally reduce yields. Both nymphs and adults feed on the undersides of the leaves, causing small, silvery streaks and whitish or yellowish discoloration. Treatment may be required when injury appears on drought-stressed plants and more than eight thrips per leaflet are found. Soybean thrips transmit soybean vein necrosis virus, but this has not been shown to impact yield. **Note:** soybean thrips are susceptible to MOA group 3, western flower thrips are not. If a concern exists for western flower thrips, use group 1 or 4A products. Soybean thrips have brown and white bands, western flower thrips are orange. Immature thrips are not distinguishable in the field.

Foliar Insecticides Labeled for Control of Thrips						
Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Lannate LV* or OLF	1A	methomyl	0.75 - 1.0 pt.	14	48	DANGER
Orthene or OLF	1B	acephate	0.25 - 0.5 lb.	14	24	CAUTION
Baythroid XL* or OLF	3	beta-cyfluthrin	0.8 - 1.6 fl. oz.	21	12	WARNING
Brigade 2EC* or OLF	3	bifenthrin	2.1 - 6.4 fl. oz.	18	12	WARNING
Capture LFR*or OLF	3	bifenthrin	2.8 - 8.5 fl oz	18	12	WARNING
Declare*	3	gamma cyhalothrin	0.77 - 1.28 fl oz	30	24	CAUTION

Delta Gold*	3	deltamethrin	1.0 - 1.5 fl oz	21	12	DANGER
Fastac CS*	3	alpha-cypermethrin	3.2 - 3.8 fl oz	21	12	CAUTION
Hero*	3	bifenthrin + zeta-cypermethrin	4.0 - 10.3 fl oz	21	12	CAUTION
Mustang Maxx* or OLF	3	zeta-cypermethrin	3.2 - 4.0 fl. oz.	21	12	WARNING
Tombstone*	3	cyfluthrin	0.8 - 1.6 fl. oz.	45	12	DANGER
Warrior II* or OLF	3	lambda-cyhalothrin	0.96 - 1.60 fl. oz.	30	24	WARNING
Argyle OD*	3 + 4A	bifenthrin + acetamiprid	6.0 - 9.0 fl oz	30	12	WARNING
Endigo ZC* Endigo ZCX*	3 + 4A	lambda-cyhalothrin + thiamethoxam	3.5 - 4.0 fl. oz.	30	24	WARNING 
Leverage 360	3 + 4A	beta-cyfluthrin + imidacloprid	2.8 fl oz	21	12	CAUTION 
Ridgeback*	3 + 4C	bifenthrin + sulfoxaflor	4.5 - 13.8 fl oz	18	24	WARNING
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl oz	21	12	WARNING
Besiege*	3 + 28	lambda-cyhalothrin + chlorantraniliprole	5.0 - 8.0 fl oz	30	24	WARNING
Elevest*	3 + 28	bifenthrin + chlorantraniliprole	4.8 - 9.6 fl oz	18	12	CAUTION

Potato Leafhopper

Leafhoppers attack soybeans during late June through July **but rarely reach population levels that affect yields.** Use a sweep net to take ten sweeps in each of ten locations in the field and count the number of leafhoppers. As a general guideline, a treatment may be needed when injury appears and infestations exceed four leafhoppers per sweep in stressed beans or eight leafhoppers per sweep in normal growing fields.

Insecticides Labeled for Control of Leafhoppers

Product Name (*=Restricted Use)	Group	Active Ingredient	Rate per acre	PHI (d)	REI (h)	Remarks
Dimethoate 4E or OLF	1A	dimethoate	1 pt	21	48	CAUTION
Orthene or OLF	1A	acephate	0.5 - 1.0 lb.	14	24	CAUTION
Asana XL*	3	esfenvalerate	2.9 - 5.8 fl. oz.	21	12	WARNING
Baythroid XL* or OLF	3	beta-cyfluthrin	0.8 - 1.6 fl oz	21	12	WARNING
Brigade 2EC* or OLF	3	bifenthrin	2.1 - 6.4 fl. oz.	18	12	WARNING
Capture LFR* or OLF	3	bifenthrin	2.8 - 8.5 fl oz	18	12	WARNING
Declare*	3	gamma cyhalothrin	0.77 - 1.28 fl oz	30	24	CAUTION
Delta Gold*	3	deltamethrin	1.0 - 1.5 fl oz	21	12	DANGER
Fastac CS*	3	alpha-cypermethrin	3.2 - 3.8 fl oz	21	12	CAUTION
Hero*	3	bifenthrin + zeta-cypermethrin	4.0 - 10.3 fl oz	21	12	CAUTION
Mustang Maxx* or OLF	3	zeta-cypermethrin	2.8 - 4.0 fl. oz.	21	12	WARNING
Perm-Up 3.2 EC* or OLF	3	permethrin	2.0 - 4.0 fl oz	60	12	CAUTION
Tombstone*	3	cyfluthrin	0.8 - 1.6 fl. oz.	45	12	DANGER
Warrior II* or OLF	3	lambda-cyhalothrin	0.96 - 1.60 fl. oz.	30	24	WARNING
Argyle OD*	3 + 4A	bifenthrin + acetamiprid	5.0 - 9.0 fl oz	30	12	WARNING
Endigo ZC* Endigo ZCX*	3 + 4A	lambda-cyhalothrin + thiamethoxam	3.5 - 4.0 fl. oz.	30	24	WARNING 
Leverage 360*	3 + 4A	beta-cyfluthrin + imidacloprid	2.4 - 2.8 fl oz	21	12	CAUTION 
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl oz	21	12	WARNING
Besiege*	3 + 28	lambda-cyhalothrin + chlorantraniliprole	5.0 - 8.0 fl oz	30	24	WARNING

Elevest*	3 + 28	bifenthrin + chlorantraniliprole	4.8 - 9.6 fl oz	18	12	CAUTION
Vertento	30	isocycloseram	1.1 - 2.0 fl oz	14	12	CAUTION ground equipment only

Spider Mites

Mite outbreaks usually are associated with hot, dry weather, which accelerates reproduction and development. During periods of high humidity and field moisture, a fungal disease can reduce populations but high temperatures can nullify these effects. Check weekly for mites, starting in late June through August, especially during a hot, dry season. Concentrate on the field borders and look for the early signs of white stippling. Examine 20 to 30 plants in the infested area. If isolated spots of mite activity are confined to the perimeter of the field, spot-treatment using ground equipment is recommended to prevent further spread of mites into the field. If the infestation is distributed throughout the interior of the field, treatment of the entire field is suggested if live mites are numerous (20 or more per leaflet) and more than 50 percent of the plants show stippling, yellowing, or defoliation over more than one-third of the leaves. If rains come, mite development and survival will decrease but may not drop to economic levels if heavy populations are developing under high temperatures. Mite populations often, but now always, crash by the third week of August.
Use greater water volume and higher pressure to ensure thorough coverage. Zeal and Agri-Mek both have translaminar activity with long residual activity. Dimethoate requires plants to be actively photosynthesizing to be absorbed (there needs to be soil moisture); otherwise it breaks down in sunlight quickly. Dimethoate also breaks down in alkaline water and high mineral content, especially iron.

Insecticides Labeled For Mite Control

Product Name (*=Restricted Use)	Group	Active Ingredient	Rate per acre	PHI (d)	REI (h)	Remarks
Dimethoate 4 EC or OLF	1B	dimethoate	1.0 pt	21	48	WARNING
Agri-Mek 0.7 SC*	6	abamectin	3.5 fl. oz.	28	12	WARNING  ***only labeled formulation. MUST include an adjuvant***
Zeal SC or OLF, Zeal Pro	10B	etoxazole	6.0 fl. oz. 11.5 - 34.6 fl. oz.		12	CAUTION Do Not Apply after R-5 stage = Beginning seed, seed 1/8th inch long in pod at one of the 4 uppermost nodes
Vertento	30	isocycloseram	2.0 fl oz	14	12	CAUTION ground equipment only

Corn Earworm

1. Sampling: Outbreaks often follow a midsummer drought, which causes the corn to ripen earlier and become less attractive to the moths. Female moths prefer to lay eggs in open-canopied, late-blooming soybean fields. Drought conditions also delay soybean maturity and prevent normal canopy growth, so peak moth activity is more coincidental with blooming of open-canopied fields. Sampling should be done on a weekly basis from mid-August through September using a sweep net. Economic infestations of full-season soybean is very uncommon. Each sample should consist of 15 net sweeps with a 15-inch diameter sweep net done continuously one after the other. Each sweep consists of swinging the net in one direction through the foliage so that the top of the net passes 2 or 3 inches below the tops of plants. Fifteen consecutive sweeps are done from one side to the other while walking down a middle row. Swing the net with enough force to dislodge insects into the net. If some leaves are not broken off and in the net after the sample, the sampler is not using enough force. After each sample, stop and count how many earworms are in the net. Thresholds are based on the number of earworms per sample.

2. Decision Making: As a general guideline, thresholds are presented at the end of this chapter. Visit the website https://www.ces.ncsu.edu/wp-content/uploads/2017/08/CEW-calculator-v0.006.html for access to the new threshold calculator based on your estimated cost of control (product cost plus application cost) and today's bushel value. **Corn earworm are partially resistant to pyrethroid insecticides. Control is inconsistent**, recent spray trials have achieved between 40 and 90% efficacy in various field crops. Using pyrethroids ALONE is STRONGLY DISCOURAGED.

NOTE - *If other defoliating pests are present when pod damage is first evident, then adjustments should be made in the treatment thresholds for earworms. For example, if green cloverworms are actively feeding and have already caused 15 percent defoliation, then insecticide treatment would be justified at lower earworm infestations, about one-half the normal threshold. However, treatment may not be necessary if the majority of worms are infected with the fungus disease. This white to greenish-white fungus can have a significant impact on earworm populations.*

NOTE*: if other pod feeders are present (ex stink bugs, bean leaf beetles), consider grouping them together for*

decision making. If corn earworm are at half of their threshold, and stink bugs are at half of their threshold, the combined pod feeding guild is at threshold.

Insecticides Recommended for Corn Earworm Control						
Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Lannate LV* or OLF	1A	methomyl	0.4 - 1.5 pt.	14	48	DANGER
Blackhawk	5	spinosad	1.7 - 2.2 oz.	28	4	CAUTION
Radiant SC	5	spinetoram	2.0 - 4.0 fl.oz.	28	4	CAUTION
Denim*	6	emamectin benzoate	8 - 12 fl. oz.	28	48	DANGER
Intrepid Edge	18 + 5	methoxyfenozide + spinetoram	4.0 - 6.4 fl. oz.	28	4	CAUTION
Steward EC	22	indoxacarb	4.6 - 11.3 fl. oz.	21	12	CAUTION
Coragen Prevathon Coragen eVo (Vantacor)	28	chlorantraniliprole	3.5 - 7.5 fl oz 14.0 - 20.0 fl. oz. 1.2 - 2.5 fl oz.	1	4	CAUTION
Besiege*	28 + 3	lambda-cyhalothrin + chlorantraniliprole	5.0 - 8.0 fl. oz.	30	24	WARNING
Elevest*	28 + 3	bifenthrin + chlorantraniliprole	4.8 - 9.6 fl. oz.	18	12	CAUTION

Note: Vertento provides good corn earworm suppression at its highest label rate. Pyrethroids are labeled, recent tests have suggested beta cyfluthrin and bifenthrin might perform better than other active ingredients, but use of a pyrethroid alone is not recommended.

Grasshopper

Insecticides Labeled for Control of Grasshoppers						
Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Sevin XLR Plus	1A	carbaryl	0.5 - 1 qt.	21	12	CAUTION
Dimethoate 400 or OLF	1B	dimethoate	1.0 pt.	21	48	WARNING
Orthene or OLF	1B	acephate	0.25 - 0.5lb.	14	24	CAUTION
Asana XL*	3	esfenvalerate	5.8 - 9.6 fl.oz.	21	12	WARNING
Baythroid XL* or OLF	3	beta-cyfluth rin	2.0 - 2.8fl. oz.	21	12	WARNING
Brigade 2EC* or OLF	3	bifenthrin	2.1 - 6.4 fl.oz.	18	12	WARNING
Capture LFR*	3	bifenthrin	2.8 - 8.5 fl oz	18	12	WARNING
Declare*	3	gamma-cyhalothrin	1.28 - 1.54 fl oz	45	24	CAUTION
Delta Gold*	3	deltamethrin	1.5 - 2.4 fl oz	21	12	DANGER
Fastac*	3	alpha-cypermethrin	2.8 - 3.8 fl.oz.	21	12	CAUTION
Hero*	3	bifenthrin + zeta cypermethrin	2.6 - 6.1 fl oz	21	12	CAUTION
Mustang Maxx* or OLF	3	zeta-cypermethrin	- 4.0 fl. oz.	21	12	WARNING
Tombstone*	3	cyfluthrin	2.0 - 2.8 fl. oz.	45	12	DANGER
Warrior II* or OLF	3	lambda-cyhalothrin	1.60 - 1.92 fl. oz.	30	24	WARNING
Argyle OD*	3 + 4A	bifenthrin + acetamiprid	- 9.0 fl oz	30	12	WARNING
Endigo ZC* Endigo ZCX*	3 + 4A	lambda-cyhalothrin + thiamethoxam	4.0 - 4.5 fl. oz.	30	24	WARNING 
Leverage 360*	3 + 4A	beta-cyfluthri n + imidacloprid	2.8 fl. oz.	21	12	CAUTION 
Ridgeback*	3 + 4C	bifenthrin + sulfaxaflor	4.5 - 13.8 fl oz	18	24	WARNING
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl. oz.	21	12	WARNING
Besiege*	3 + 28	lambda-cyhalothrin + chlorantraniliprole	8.0 - 10.0 fl. oz.	30	24	WARNING
Elevest*	3 + 28	bifenthrin + chlorantraniliprole	4.8 - 9.6 fl. oz.	18	12	CAUTION
Coragen or OLF Prevathon Coragen eVo (Vantacor)	28	chlorantranili prole	2.0 - 5.0 fl oz 8.0.0 - 20.0 fl. oz. 0.7 - 1.7fl. oz.	1	4	CAUTION MSO may help efficacy

Beet Armyworm (BAW), Fall Armyworm (FAW), and Yellow Striped Armyworm (YSW)

Note: Beet armyworm is resistant to pyrethroids. There are resistance concerns with beet armyworm and diamides (group28, ex Coragen, Coragen eVo, Elevest, Besiege).Pyrethroids (group 3) give fair to good control of fall armyworm and yellow striped armyworm.

Insecticides Labed for FAW and YSW Control						
Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Orthene or OLF	1B	acephate	0.75 - 1.0lb.	14	24	CAUTION
Baythroid XL*or OLF	3	beta-cyfluthrin	1.6 - 2.8fl. oz.	21	12	WARNING 1st and 2nd instar only
Brigade 2EC* or OL	3	bifenthrin	2.1 - 6.4 fl. oz.	18	12	WARNING
Capture LFR*	3	bifenthrin	2.8 - 8.5 fl oz	18	12	WARNING
Declare*	3	gamma-cyhalothrin	1.28 - 1.54 fl oz	45	24	CAUTION
Delta Gold*	3	deltamethrin	1.5 - 2.4 fl oz	21	12	DANGER
Fastac CS*	3	alpha-cypermethrin	2.8 - 3.8 fl oz	21	12	CAUTION
Warrior II* or OLF	3	lambda-cyhalothrin	1.6 - 1.92 fl. oz.	30	24	WARNING
Argyle OD*	3 + 4A	bifenthrin + acetamiprid	6.0 - 9.0 fl oz	30	12	WARNING
Ridgeback*	3 + 4C	bifenthrin + sulfaxaflor	4.5 - 13.8 fl oz	18	24	WARNING
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl. oz.	21	12	WARNING
Insecticides Labed for BAW, FAW and YSW Control						
Lannate LV* or OLF	1A	methomyl	0.75 - 1.5 pts.	14	48	DANGER
Blackhawk	5	spinosad	1.7 - 2.2 oz.	28	4	CAUTION
Radiant SC	5	spinetoram.	2.0 - 4.0 fl. oz.	28	4	CAUTION BAW and FAW only
Intrepid 2F	18	methoxyfenozide	4.0 - 8.0 fl. oz.	14	4	CAUTION
Intrepid Edge	18 + 5	methoxyfenozide +spinetoram	4.0 - 6.4 fl. oz.	28	4	CAUTION
Steward EC	22	indoxacarb	4.6 - 11.3 fl oz.	21	12	CAUTION
Besiege*	28 + 3	lambda-cyhalothrin chlorantraniliprole	8.0 - 10.0 fl oz	30	24	WARNING
Elevest*	28 + 3	bifenthrin + chlorantraniliprole	5.6 - 9.6 fl. oz.	12	12	CAUTION
Coragen or OLF Prevathon Vantacor	28	chlorantraniliprole	3.5 - 7.5 fl. oz. 14.0 - 20.0 fl oz 0.7 - 1.7 fl. oz	1	4	CAUTION

Stink Bugs

Stink bugs begin moving into fields during the early reproductive stages and can often be found in aggregations in distinct sections of fields. Green stink bugs usually come in from surrounding wooded areas. Brown stink bugs are often associated with other grain crops. Brown stink bugs are more difficult to control with pyrethroid insecticides (MOA 3) and higher rates are advised. Brown marmorated stink bugs are most susceptible to bifenthrin; higher rates are advised. Southern green stink bug was found within a couple of miles of the southern Delaware border in 2021. It shares similar susceptibilities as green stink bug.

Revised Stink Bug Thresholds for Soybean (all stink bug species combined): Apply from R3-4 to R6.5, double after R7

	# per row foot		**# per 15 sweeps**	
Row spacing	7-21" rows	Above 21"	7-21" rows	Above 21"
Soybeans for Grain	1-2	1-2	5	5
Plenish soyn	1	1	4	4
Soybeans for Seed	0.5	0.5	2.5	2.5

Insecticides Labeled for Stink Bugs						
Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Orthene or OLF	1B	acephate	0.5 - 1.0 lb.	14	24	CAUTION
Baythroid XL* or OLF	3	beta-cyfluthrin	2.8 fl. oz.	21	12	WARNING
Brigade 2EC* or OLF	3	bifenthrin	6.4 fl. oz.	18	12	WARNING
Capture LFR* or OLF	3	bifenthrin	8.5 fl oz	18	12	WARNING
Declare*	3	gamma-cyhalothrin	1.54 fl. oz.	45	24	CAUTION
Delta Gold*	3	deltamethrin	2.4 fl oz	21	12	DANGER
Fastac*	3	alpha-cypermethrin	3.8 fl. oz.	21	12	CAUTION
Hero*	3	zeta-cypermethrin+ bifenthrin	6.1 - 10.3 fl. oz.	21	12	CAUTION
Mustang Maxx* or OLF	3	zeta-cypermethrin	4.0 fl. oz.	21	12	CAUTION
Warrior II* or OLF	3	lambda-cyhalothrin	1.92 fl. oz.	30	24	CAUTION
Argyle OD*	3 + 4A	bifenthrin + acetamiprid	9.0 fl oz	30	12	WARNING
Endigo ZC* Endigo ZCX*	3 + 4A	lambda-cyhalothrin + thiamethoxam	4.5 fl. oz.	30	24	WARNING 
Leverage 360*	3 + 4A	beta-cyfluthrin + imidacloprid	2.8 fl. oz.	21	12	CAUTION 
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl. oz.	21	12	WARNING
Belay	4A	clothianidin	3.0 - 6.0 fl. oz.	21	12	CAUTION 
Vertento	30	isocycloseram	1.6 - 2.0 fl oz	14	12	CAUTION ground equipment only

Soybean Looper

Soybean looper move into the area in August. Soybean loopers can cause significant defoliation during reproductive stages. Defoliation threshold between R2 and R5 is 15%; At R6, the threshold rises to 50% defoliation, and beans are safe from yield loss from defoliation at R7. Significant defoliation can occur quickly with large numbers (1 looper per sweep). Be sure not to confuse them with green cloverworm. Soybean looper do not wiggle violently when disturbed and only have two pairs of abdominal prolegs. The last abdominal segments tend to be wider than the first abdominal segments. Soybean loopers tend to defoliate in the middle of a canopy first before moving upwards. Large larvae are hard to control, and large larvae eat more leaf material in the last three days of larval development than during the rest of their development.

Both Virginia and North Carolina report the most consistent products contain indoxacarb or methoxyfenozide. Chlorantraniliprole-containing products are labeled but tend to provide only about 40-60% efficacy. Lannate is labeled but has very little residual activity.

Insecticides Recommended for Soybean Looper						
Product Name (*=Restricted Use)	**Group**	**Active Ingredient**	**Rate per acre**	**PHI (d)**	**REI (h)**	**Remarks**
Blackhawk	5	spinosad	2.2 oz.	28	4	CAUTION
Radiant SC	5	spinetoram	4.0 fl. oz.	28	4	CAUTION
Denim*	6	emamectin benzoate	8 - 12 fl. oz.	28	48	DANGER
Intrepid 2F or OLF	18	methoxyfenozide	4.0 - 8.0 fl. oz.	14	12	CAUTION
Intrepid Edge	18 + 5	methoxyfenozide + spinetoram	4.0 - 8.0	28	4	CAUTION
Steward EC or OLF	22	indoxacarb	4.6 - 11.3 fl. oz.	21	12	CAUTION

Dectes Stem Borer

Dectes stem borer adults are gray longhorn beetles that emerge from the soil from the end of June through July, thus full season beans are at greatest Dectes risk. Adult activity typically peaks around the second week of July. Several insecticides are labeled for Dectes stem borer. Area wide crop rotation helps reduce Dectes. If an infested field cannot be rotated, fall tillage can reduce overwintering populations. In general, insecticide applications are not recommended.

Labeled insecticides include Coragen eVo, Hero, Elevest, Brigade, and Capture LFR. More information can be found at University of Maryland's fact sheet FS-1196 "Dectes Stem Borer Management in Soybeans". In August, look for wilting or flagged leaf petioles as larvae enter the main stem. Infested fields should be harvested as soon as possible to reduce lodging risk. Narrow row soybeans may help support girdled plants enough to be picked up by the combine.

Soybean Aphid

Soybean aphids can be common, but rarely damaging in Delaware. Thresholds from the Midwest are 250 aphids per plant on 80% of plants, populations are increasing, and plants have not yet reached the R5 beginning seed stage. It is important to resample fields 5-7 days after observing a near-threshold population. This is because aphid populations can "crash" quickly due to heavy pressure by natural enemies like lady beetles, parasitic wasps, and fungal diseases. When scouting, choose a "Z" or "W" shaped pattern to cover the entire field and sample at least 30 plants per field by examining the entire plant, including stems and upper and lower leaf surfaces. Once plants reach the R5 growth stage (3 mm long seed in the pod at one of the four uppermost nodes on the main stem), soybean can tolerate 1,000+ aphids per plant.

Insecticides Labeled for Soybean Aphids

Product Name (*=Restricted Use)	Group	Active Ingredient	Rate per acre	PHI (d)	REI (h)	Remarks
Dimethoate 4E or OLF	1B	dimethoate	1 pt	21	48	CAUTION
Orthene or OLF	1B	acephate	0.75 - 1.0 lb.	14	24	CAUTION
Asana XL*	3	esfenvalerate	5.8 - 9.6 fl. oz.	21	12	WARNING
Baythroid XL*	3	beta-cyfluthrin	2.0 - 2.8 fl. oz.	21	12	WARNING
Brigade*, eVo* or OLF	3	bifenthrin	2.1 - 6.4 fl oz	18	12	WARNING
Capture LFR	3	bifenthrin	2.8 - 8.5 fl oz	18	12	WARNING
Delta Gold*	3	deltamethrin	1.5 - 2.4 fl oz	21	12	DANGER
Fastac CS*	3	alpha-cypermethrin	2.8 - 3.8 fl oz	21	12	CAUTION
Hero*	3	zeta-cypermethrin + bifenthrin	4.0 - 10.3 fl. oz.	21	12	CAUTION
Warrior II* or OLF	3	lambda-cyhal othrin	0.96 to1.6 fl. oz.	30	24	WARNING
Argyle OD*	3 + 4A	bifenthrin + acetamiprid	5.0 - 9.0 fl oz	30	12	WARNING
Endigo ZC* Endigo ZCX*	3 + 4A	lambda-cyhal othrin + thiamethoxam	3.5 - 4.0 fl. oz.	30	24	WARNING 
Ridgeback*	3 + 4C	bifenthrin + sulfaxaflor	6.9 - 13.8 fl oz	18	24	WARNING
Renestra*	3 + 9D	alpha-cypermethrin + afidopyropen	6.8 fl. oz.	21	12	WARNING
Belay	4A	clothianidin	3.0 - 6.0 fl. oz.	21	12	CAUTION 
Transform	4C	sulfoxaflor	0.75 - 1.0 oz.	7	24	DANGER
Sivanto	4D	flupyradifuron e	7.0 - 14.0 fl. oz.	21	12	CAUTION
Sefina	9D	afidopyropen	3.0 fl. oz.	7	12	CAUTION

Other Labeled Formulations of Commonly Used Insecticides

Insecticide	OLF trade name*	
acephate + bifenthrin	Acenthrin	
beta-cyfluthrin	Sultrus (Helena)	Cryptoid XL (Atticus)
carbaryl	Carbaryl 4L (Drexel and Loveland)	
bifenthrin	Annex LFR (Tenkoz) Batallion (Atticus) Bi-Dash 2 E (Sharda USA) Bifen 2AG Gold (Direct AG Source) Bifender FC (Vive Crop Protection) Bifenture 2 EC and LFC (UPL) Bifenthrin 2 EC (Aceto) Discipline 2 EC (Amvac) Fanfare 2 EC (Adama) GCS Bifenthrin 2EC (Generic Crop Sci)	Frenzy Veloz (Real Farm) LFC (Generic Crop Science) Lancer 2EC (Albaugh) Reveal Endurx (Innvictis) Ruckus LFR (Helena) Slugbug (Real Farm) Sniper (Loveland) Sniper LFR (Loveland) Tundra 2 EC (Winfield) Xpedient Plus (Amvac)

bifenthrin + Imidacloprid	Avenger, Avenger Bold (Innvictis), Brigadier Swagger (Loveland)	Brigadier (FMC)
esfenvalerate	Zyrate	
etoxazole	Inntervene SC (Innvictis) Stifle SC (AMVAC)	Suremite SC (Aceto) Zara SC (Atticus)
methoxyfenozide	Invertid (Loveland) Invicar 2 SC (Albaugh) GCS Methoxy 2F (Generic Crop Science) Thwartex (AgSurf)	Turnstyle (UPL) Zylo (UPL) Vexer (Innvictis)
lambda-cyhalothrin	Cavalry II (Growmark) Crusader 2ME and 1EC (Albaugh) Grizzly Too and Grizzly Z (WinField United) Kendo 22.8 CS (Helm Agro US) L-C Insecticide (Drexel) Lambda T (Helena) Lambda-Cy Ag (WinField United) Lambda-Cy EC Insecticide RUP (UPL) LambdaStar (LG Life Sciences)	Lunge (UPL) Nufarm Lambda-cyhaolothrin 1EC (Nufarm) Paradigm (Adama) Paradigm VC (WinField United) Province II (Tenkoz) Ravage (Innvictis Crop Care) Serpent (Atticus) Silencer (Adama) Willowood Lambda-Cy (Willowood)
bifenthrin + zeta cypermethrin + imidacloprid	Triple Crown Insecticide (WinField)	
lambda-cyhalothrin + imidacloprid	Kilter (NuFarm)	
zeta-cypermethrin	Cortes Maxx (Atticus)	
permethrin	Arctic 3.2 Permanone 30-30 (Environmental Science)	PermaStar (LG Life Sciences) Permethrin (Loveland)
acephate	Acephate 90 Prill Select (Algaugh) Acephate 97 WDG (Adama) Bracket 97 (WinField United)	Acephate 90 WDG (Loveland Products) Acephate 97 UP (UPL) Tide Acephate 90 WDG (Tide International)
dimethoate	Dimate 4E (WinField United) Dimethoate 400 (Loveland Products)	Dimethoate 400 EC (FMC) Dimethoate 4EC (Drexel)
methomyl	Nudrin (Albaugh) Lannate LV (NovaSource)	Lanveer LV (Innvictis)
indoxacarb	Host EC (Sharda)	Sedaire EC (Atticus)
chlorantraniliprole	Exceliprole (Albaugh)	Shenzi (UPL)

*OLF label rates and restrictions may differ from those listed in this guide. Consult label carefully before making application.

Organic Insecticides

Labeled organic insecticides for soybean include the active ingredients spinosad (Entrust) iron phosphate (Sluggo and Bug-N-Sluggo which combines spinosad), azadirachtin (Ecozin Plus 1.2% ME), azadirachtin + neem oil (Debug Optimo, Tres, and Turbo), neem oil (Debug On, Rango, Trilogy), *Bacillus thuringiensis* active on early instar caterpillar pests *B. t. kurstaki* (Crymax, Deliver, Dipel DF, Javelin, Leprotec) and *B. t. aizawai* (Agree), and *Chromobacterium subtsugae* (Grandevo).

Insecticidal Seed Treatments Labeled for Soybean

Company	Seed Trt Brand	Category	Active Ingredient	Group
Albaugh	BioST Insecticide 100	Biological Insecticide	*Burkholderia spp.*strain *A396*	
Syngenta	Clariva pn	Biological Nematicide	*Pasteuria nishizawae*– Pn1	
Valent	Nipsit INSIDE	Insecticide	clothianidin	I: 4a
Corventa	Lumisure	Insecticide	clothianidin	I: 4a
Bayer	Acceleron IX-409	Insecticide	imidacloprid	I: 4a
Bayer	Gaucho 600 Flowable	Insecticide	imidacloprid	I: 4a
NuFarm	Senator 600 FS	Insecticide	imidacloprid	I: 4a
UPL	STartUP	Insecticide	imidacloprid	I: 4a
BASF	AXCESS	Insecticide	imidacloprid	I: 4a
Loveland	Dyna-Shield Imidacloprid 5	Insecticide	imidacloprid	I: 4a
Winfield	Nitro Shield IV	Insecticide	imidacloprid	I: 4a
Albaugh	Resonate 480 ST	Insecticide	imidacloprid	I: 4a

Albaugh	Resonate 600 ST	Insecticide	imidacloprid	I: 4a
Innvictis	Revise Imida ST	Insecticide	imidacloprid	I: 4a
Nufarm	Senator 600 FS	Insecticide	imidacloprid	I: 4a
Sharda	Sharda Imidacloprid 5SC	Insecticide	imidacloprid	I: 4a
UPL	Attendant 480 and 600	Insecticide	imidacloprid	I: 4a
Syngent	Cruiser 5FS	Insecticide	thiamethoxam	I: 4a
NuFarm	Elliptica	Insecticide	thiamethoxam	I: 4a
Syngent	Fortenza	Insecticide	cyantraniliprole	I: 28
BASF	Poncho/Votivo	Insecticide Biological Nematicide	clothianidin, *Bacillus firmus* I-1582	I: 4a
Syngent	Clariva Elite Beans	Insecticide Biological Nematicide Fungicide	thiamethoxam, mefenoxam, fludioxonil, sedaxane, *Pasteuria nishizawae* - Pn1	I: 4a; F: 4, 12, 7
Helena	Seed Shield MAX Beans	Insecticide Fungicide	azoxystrobin, fludioxonil, fludioxonil, mefenoxam, thiabendazole, thiamethoxam	I: 4a; F: 11, 12, 4, 7
Valent	Intego Suite	Insecticide Fungicide	clothianidin, ethaboxam, ipconazole, metalaxyl	I: 4a; F: 3, 22, 4
Valent	Inovate Pro Seed Protectant	Insecticide Fungicide	clothianidin, ipconazole, metalaxyl	I: 4a; F: 3, 4
NuFarm	Spirato IMTM 348 FS	Insecticide Fungicide	imidacloprid, metalaxyl, thiophanate-methyl, fludioxonil	I: 4a; F: 4, 1, 12
Syngent	CruiserMaxx	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil	I: 4a; F: 4, 12
Syngent	CruiserMaxx Advanced, CruiserMaxx Plus	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil	I: 4a; F: 4, 12
Syngent	CruiserMaxx EZ	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil	I: 4a; F: 4, 12
FMC	Upshot	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil	I: 4a; F: 4, 12
Syngent	Adage ST	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil	I: 4a; F: 4, 12
Helena	Seed Shield	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil, azoxystrobin	I: 4a; F: 4, 12, 11
Syngent	CruiserMaxx Vibrance	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil, sedaxane	I: 4a; F: 4, 12, 7
Winfield	Warden CX	Insecticide Fungicide	thiamethoxam, mefenoxam, fludioxonil, sedaxane	I: 4a; F: 4, 12, 7
Loveland	Equity VIP	Insecticide Fungicide	thiamethoxam, mefenoxam, thiabendazole, fludioxonil, sedaxane	I: 4a; F: 4, I, 12, 7
Syngent	Avicta 500 FS	Insecticide Nematicide	abamectin	I: 6
Syngent	Avicta Complete Beans 500	Insecticide Nematicide Fungicide	abamectin, thiamethoxam, mefenoxam, fludioxonil	I: 6, 4a; F: 4, 12
Syngent	Avicta Complete Beans 500 Vibrance	Insecticide Nematicide Fungicide	abamectin, thiamethoxam, mefenoxam, fludioxonil, sedaxane	I: 6, 4a; F: 4, 12, 7
BASF	ILeVO	Nematicide	fluopyram	F: 7
Bayer	Acceleron NemaStrike ST	Nematicide	tioxazafen	