

PEANUT INSECT MANAGEMENT

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See the following tables for insect control recommendations, active ingredient concentrations and use precautions. In many cases, controlling peanut volunteers in rotation years helps prevent insect population buildup and damage in the following year.

Thrips cause serious crop stunting and yield loss from both direct feeding and virus transmission (tomato spotted wilt). All commercial peanuts planted in S. C. should be treated at planting with a preventative in-furrow insecticide (Thimet 20G). Admire Pro in-furrow (10 fl oz) can also be used for thrips control; however, since Admire Pro often increases virus, it benefits from being paired with highly virus-resistant varieties (e.g., Bailey, Sullivan, TifNV-High O/L). Immediate foliar application of Orthene is recommended if in-furrow treatment fails to prevent thrips stunting.

Potato leafhopper feeding causes peanut leaflets to turn yellow at the tip in a V-shaped pattern (hopperburn). This chlorotic symptom is often confused with nutrient deficiency. Hopperburn typically begins on field borders. If 15 to 20% of the entire field becomes affected and adults are still present, treat by mixing a recommended insecticide in with the next fungicide application. Bailey, Sugg, Sullivan and Wynne are particularly susceptible.

Threecornered alfalfa hoppers are green, wedge-shaped insects that feed by piercing peanut laterals, stems, and leaf petioles. The circular feeding pattern forms a girdle around the stem which blocks the flow of plant sugars. Girdles may cause the affected branch of the plant to wilt and even snap off if bent. Plants often put out above-ground (adventitious) roots at the wound site on lower stems. In SC, girdling activity increases significantly in July. The risk of economic injury is apparently greater on runner types with small plant size. Pyrethroid insecticides are effective against hoppers, but these can flare secondary pest problems like spider mites that can be more damaging.

Soil Insects:

Lesser cornstalk borers attack pods, pegs, lateral stems and the crown at the soil line during extended drought stress. Fields with lighter soils are particularly vulnerable. In addition to losses from direct injury, LCB damage is associated with increased white mold and aflatoxin levels due to the wounds it causes. Rapid canopy closure and reduced soil temperatures lower LCB risk. **Irrigation is the best defense against lesser cornstalk borer.** Granular Lorsban (13 lb/A) can be applied at pod set (about 50 – 55 DAP) to high risk fields (sandy soils under drought stress). About 1/4" rain/irrigation is needed within 10 days of application for Lorsban to be effective. Lorsban also reduces pod damage from wireworm, burrower bugs, and southern corn rootworm feeding. Unfortunately, Lorsban kills predatory insects and causes outbreaks of corn earworm, granulate cutworm and spider mites under drought stress later in the season. Late fall tillage before planting covers can help reduce but will not eliminate LCB winter survival. LCB damage is typically less severe under reduced-tillage.

Burrower bugs primarily attack reduced-tillage peanut fields under drought stress. These are essentially underground stink bugs which feed directly on kernels by piercing pods with their needle-like mouthparts. In addition to direct yield and grade loss (reduced kernel weight), burrower bug damage can lead to Seg. II loads and increased aflatoxin levels (Seg. III). **Irrigation is also the best defense against burrower bug injury.** Late fall tillage can help reduce but will not eliminate burrower bug winter survival. Lorsban application can significantly reduce burrower bug damage but must be applied preventatively (July). Lorsban is not routinely recommended for managing burrower bug (see LCB comments above about associated outbreaks).

Wireworms are immature or larval stages of click beetles that commonly feed on peanut pods. Although wireworms are capable of causing significant injury, thus far economic damage to peanut has been minimal under S. C. conditions.

The only practical treatment for wireworms is preventative Lorsban application.

Southern corn rootworm is the immature stage of the eleven-spotted cucumber beetle. This worm tunnels into peanut pods under high soil moisture conditions, usually in more organic soils such as found in bottom areas, particularly under irrigation. Rootworm injury has been a relatively minor concern thus far under S. C. conditions.

Foliage Caterpillars:

Corn earworm is the most common foliage feeding insect on peanuts. Corn earworms usually appear in peanut fields during the last week of July or first week of August after the moths emerge from corn fields. Corn earworms initially feed in plant terminals, then blooms, older leaves and pegs as they mature. It is difficult to separate corn earworm from tobacco budworm with the naked eye; several non-pyrethroid products are effective on both.

Fall armyworms are not usually an economic problem on peanut, but they can occur in very high numbers during outbreak years. Infestations typically occur in mid-August, a couple weeks after corn earworms first appear.

Granulate cutworm can defoliate small plants in June and can also be a problem late in August where Lorsban was previously used because Lorsban kills fire ants and other predators. Granulate cutworms have distinctive Chevron or "sergeant stripe" markings along the back. Granulate cutworms initially feed on blooms, then leaves, pegs and pods as they mature. During the day cutworms can be found curled up under shed leaves and other organic matter on the soil surface. The larvae climb up the plant at night to feed. Symmetrical feeding damage (from feeding when the leaves are folded at night) is a clue to look for granulate cutworms on and in the soil.

Velvetbean caterpillars can rapidly defoliate late maturing peanuts during late September or October in southern coastal plain counties of S. C, especially Jasper, Hampton, Allendale and Colleton counties. Velvetbean caterpillars range from light green to almost black. A key characteristic is medium to large worms thrash violently when handled. Moths land with their wings out and have a line that stretches wing tip to wing tip. They are easy to control.

Scouting for Foliage Caterpillars:

Use a 3' shake cloth to look for worms starting the last week of July. Work the dowel handle up under lateral stems to the plant crown and bend the other side of the plants over the cloth. Beat down vigorously 15 times to knock worms onto the cloth. Shake the plants, bend them back out of the way and count the worms on the cloth. Also count worms under the cloth on both sides of the row to calculate worms/row ft. Check at least three areas/field.

Rank-growing, unstressed peanuts with a closed canopy can tolerate 8 foliage feeding worms per row ft. The treatment threshold is 4 worms per row ft on stressed plants which have not lapped the middle or where Lorsban has previously been applied. Runner varieties with slow growing canopies can be more susceptible to direct injury from foliage feeding. Weed control may also be affected by delayed canopy closure on runner varieties. **Irrigation, vigorous canopy growth, and avoidance of unnecessary early season insecticide applications are the best defense against foliage-feeding worms.**

Spider mites can damage drought stressed peanuts in August and September. Stressed fields should be spot checked for yellow "hits" indicating where mites are feeding. Spider mites can be seen with a hand lens on the underside of leaflets. Webbing may be present with heavy infestation. These twospotted spider mites get their name from the two spots (one on each side) on their body. Mite suppression requires ground application, thorough coverage, and potentially a second application in 5-7 days. Lorsban or pyrethroid application greatly increases the risk of mite outbreaks. **Irrigation is the best defense against spider mite injury.**

PEANUT INSECT CONTROL

Sucking/Piercing/Rasping Pests			
Insect	Product	Rate/A	Comments
Thrips In-furrow	Thimet 20G	4.7 lb (38" rows)	Preventative in-furrow thrips control is a must on all peanuts planted in S.C.
	Admire Pro	10 fl oz	Maximum labeled Thimet rate is 5.5 oz/1,000 row ft, equivalent to 4.7 lb/A on 38", 5.0 lb on 36", and 6.0 lb on 30" rows. Twin rows: use 3.5 oz/1,000 row ft in each row, which equals 6.0 lb/A on 38" centers. Admire Pro and Velum Total control thrips but usually increase tomato spotted wilt virus. Use only on highly virus-resistant varieties (e.g., Bailey, Sugg, Sullivan). Twin rows: max labeled rate for Admire Pro is 10.5 fl oz/A/season. Splitting 5 fl oz into each row will usually require follow up with foliar Orthene for adequate thrips suppression.
	Velum Total	18 fl oz	
	AgLogic 15G	7 lb	
Thrips Foliar	Exirel Orthene 75S Orthene 97SP Diamond 0.83EC	13.5-20.5 fl oz 0.5-1.0 lb 0.375-0.75 lb 6-12 fl oz	
Leafhoppers	Besiege 1.25 SC*	5.0-8.0 fl oz	Hopperburn starts on field borders usually in June - July. Treat if hopperburn is spreading across the field and approaching 15-20% symptomatic leaflets. Bailey and Sugg varieties are particularly susceptible to hopperburn. *Besiege is a pyrethroid + diamide mix. For control of both hoppers and worms, use worm rates below.
	Orthene 75S	0.6-1.0 lb	
	Orthene 97SP	0.5-0.75 lb	
	Pyrethroids		
	Asana XL 0.66EC	3.9 fl oz	
	Baythroid XL 1EC	1.0-1.8 fl oz	
	Brigade 2EC	2.1-6.4 fl oz	
	Declare 1.25CS	1-1.5 fl oz	
Spider mites	Comite II	2.25 pt	Use ground application, 20 gal/A at 40-60 psi. Repeat appl. after 5-7 days. Lorsban or pyrethroids can cause mite outbreaks. Avoid unnecessary worm insecticides to reduce mite risk. Irrigation is the best mite defense. Use of pyrethroids labeled for spider mite control (e.g., Danitol) is <u>not</u> recommended.
	Omite 30WS	3-5 lb	
Three-cornered alfalfa hopper	Besiege 1.25 SC*	5.0-8.0 fl oz	Treat at 45-60 days after planting to prevent injury. *Besiege is a pyrethroid + diamide mix. For control of both hoppers and worms, use worm rates below.
	Orthene 75S	0.65 lb	
	Orthene 97SP	0.5 lb	
	Pyrethroids		
	Baythroid XL 1EC	1.8-2.4 fl oz	
	Brigade 2EC	2.1-6.4 fl oz	
Declare 1.25CS	0.8-1.3 fl oz		
	Karate Z 2.08CS	1.0-1.6 fl oz	

PEANUT INSECT CONTROL

Foliage Feeding Worms				
Insect	Product	Rate/A	Comments	
Beet armyworm, Fall armyworm, Soybean looper	Besiege 1.25 SC	6-10 fl oz	Unstressed plants with a large, closed canopy can tolerate 8 total worms/row ft. Treat if populations reach 4/row ft on drought stressed, unlapped peanuts or on fields previously treated with Lorsban. Fall armyworm attacks peanut in outbreak years from mid-August to early September. Loopers seldom significantly defoliate peanuts by themselves but typically occur with other defoliators. If Besiege or Coragen are used for loopers or beet armyworms, use the maximum labeled rate. Exirel not labeled for beet armyworm.	
	Blackhawk 36 WDG	1.7-3.3 oz		
	Coragen 1.67 SC	3.5-5.0 fl oz		
	Exirel 0.83 SE	13.5-20.5 fl oz		
	Diamond 0.83EC	6-12 fl oz		
	Intrepid Edge 3F	4-8 fl oz		
	Prevathon 0.43 SC	14-20 fl oz		
	Radiant 1 SC	3-8 fl oz		
	Steward 1.25 SC	9.2-11.3 fl oz		
	Corn earworm	Besiege 1.25 SC		6-10 fl oz
Blackhawk 36 WDG		1.7-3.3 oz		
Coragen 1.67 SC		3.5-5.0 fl oz		
Exirel 0.83 SE		10-20.5 fl oz		
Intrepid Edge 3F		4-8 fl oz		
Lannate 2.4 LV		12-18 fl oz		
Lannate 90 SP		0.25-0.38 lb		
Prevathon 0.43 SC		14-20 fl oz		
Radiant 1 SC		3-8 fl oz		
Steward 1.25 SC		9.2-11.3 fl oz		
Pyrethroids				
Asana XL 0.66 EC		3.9-5.8 fl oz		
Baythroid XL 1EC		1.8-2.4 fl oz		
Brigade 2 EC		2.1-6.4 fl oz		
Danitol 2.4 EC		10.6-16 fl oz		
Declare 1.25 CS		1.0-1.5 fl oz		
Karate Z 2.08CS		1.3-1.9 fl oz		
Mustang Max 0.8EC		3.2-4 fl oz		
Proaxis		2.5-3.8 fl oz		
Tobacco budworm		Besiege 1.25 SC	6-10 fl oz	Same threshold as for beet armyworm. Peanuts can withstand significant defoliation (at least 30%) prior to pegging. We have not measured any yield response to treating early season budworm infestations. However, weed control on small canopy runners may be affected by delayed canopy closure. See corn earworm comment.
	Blackhawk 36 WDG	1.7-3.3 oz		
	Coragen 1.67 SC	5.0 fl oz		
	Exirel 0.83 SE	10-20.5 fl oz		
	Intrepid Edge 3F	4-8 fl oz		
	Prevathon 0.43 SC	14-20 fl oz		
	Steward 1.25 SC	9.2-11.3 fl oz		
Velvetbean caterpillar	Besiege 1.25 SC	5-8 fl oz	Velvetbean caterpillar is a late season pest (Sep - Oct) that can defoliate peanuts quickly. This pest is usually easy to control but often misidentified as an armyworm, leading to unnecessary treatment cost. Adding Dimilin 2L (2 fl oz/A) to the last fungicide treatment will prevent VBC in high risk areas (southern coastal plain counties). Do not use Dimilin to control established populations. Note: Steward is one of the few insecticides that <u>will not</u> control velvetbean caterpillar.	
	Blackhawk 36 WDG	1.7-3.3 oz		
	Coragen 1.67 SC	3.5-5.0 fl oz		
	Diamond 0.83EC	6-8 fl oz		
	Dimilin 2L	2.0 fl oz		
	Intrepid Edge 3F	4-8 fl oz		
	Prevathon 0.43 SC	14-20 fl oz		
	Radiant 1 SC	3-8 fl oz		
	Pyrethroids			
	Asana XL 0.66 EC	3.9-5.8 fl oz		
Baythroid XL 1EC	1.8-2.4 fl oz			
Brigade 2 EC	2.1-6.4 fl oz			
Danitol 2.4 EC	10.6-16 fl oz			

PEANUT INSECT CONTROL

Foliage Feeding Worms (cont)			
Insect	Product	Rate/A	Comments
Velvetbean caterpillar (continued)	Pyrethroids		
	Declare 1.25 CS	1.0-1.5 fl oz	
	Karate Z 2.08 CS	1.3-1.9 fl oz	
	Mustang Max 0.8EC	1.3-4 fl oz	
	Proaxis 0.5 CS	2.5-3.8 fl oz	
Soil Insects			
Burrower bug,	Lorsban 15 G	13.3 lb	<p>Apply Lorsban 15G with a 5" bander directly over the row the first week of July. Some rain (~0.2") is needed within 10-14 days of application to be effective. Lorsban often causes spider mite and worm outbreaks. Burrower bug injury almost always occurs in reduced tillage fields under severe late season (Aug to early Sep) drought stress. Lesser cornstalk borer injury only occurs under severe drought stress.</p> <p>Irrigation is the best defense against burrower bug or lesser cornstalk borer injury.</p> <p>Current data is limited on Besiege, Diamond and Exirel efficacy on lesser cornstalk borer – apply at first signs of feeding to before pests reach damaging levels.</p>
	Lesser cornstalk borer,	Lesser cornstalk borer and southern corn rootworm:	
Besiege 1.25 SC		10 fl oz	
Southern corn rootworm,	Diamond 0.83EC	6-12 fl oz	
	Wireworms only:		
Wireworms	Lorsban 4E (at planting)	4 pt	
	Lesser cornstalk borer only:		
	Exirel 0.83 SE	13.5-20.5 fl oz	
Granulate cutworm	Besiege 1.25 SC	8-10 fl oz	
	Coragen 1.67 SC	4-5.0 fl oz	
	Exirel 0.83 SE	13.5-20.5 fl oz	
	Prevathon 0.43 SC	20 fl oz	
	Steward 1.25 SC	9.2-11.3 fl oz	
<p>Note: there are many generic insecticide brands, particularly for pyrethroids. For equivalent rates compare active ingredient concentrations to the following table. Also see pre-harvest interval and use precautions. The label is the law. Always read and follow all pesticide label restrictions.</p>			

PEANUT INSECTICIDE ACTIVE INGREDIENTS & USE PRECAUTIONS

Active ingredient	Brand name and formulation	IRAC* Group	PHI (Days)	Comments
Acephate	Orthene 75S Orthene 97SP	1B	14	Do not feed or graze.
Aldicarb	AgLogic 15G	1A	90	Do not feed or graze. Do not exceed 17 lb/A/season.
Chlorpyrifos	Lorsban 15G	1B	21	Do not exceed 26.6 lb/A/season.
Diamides				
Chlorantraniliprole	Coragen 1.67 SC Prevathon 0.43 SC	28 28	1 1	Do not exceed 4 appl. per season or 0.2 lb a.i. of chlorantraniliprole per acre/season.
Chlorantraniliprole + lambda-cyhalothrin	Besiege 1.25 SC	28 3A	14	Do not exceed 31 oz/A/season.
Cyantraniliprole	Exirel 0.83 SE	28	14	Do not exceed 0.4 lb a.i. per acre per year.
Diflubenzuron	Dimilin 2L	15	28	Do not exceed 3 appl. per season.
Imidacloprid	Admire Pro 4.6F Velum Total 2.17F	4A	14	Increases tomato spotted wilt virus; use only on highly resistant varieties. Do not feed or graze.
Indoxycarb	Steward 1.25 SC	22	14	Do not exceed 45 fl oz/A/season.
Methomyl	Lannate 2.4 LV Lannate 90 SP	1A	21	Do not feed or graze.
Methoxyfenozide + spinetoram	Intrepid Edge 3F	18 5	7	Do not exceed 3 appl./season. Max 1 lb methoxyfenozide or 0.188 lb spinetoram/A/season. Do not feed or graze.
Novaluron	Diamond 0.83EC	15	28	Do not exceed 36 fl oz/A/season. Do not feed or graze.
Phorate	Thimet 20G	1B	90	Do not exceed 5.5 oz/1000 row ft or 7.5 lb/A. Do not feed or graze.
Propargite	Comite II 6 EC Omite 30WS	12C	14	Do not exceed 2 appl. per season. Do not feed or graze.
Pyrethroids				
Beta-cyfluthrin	Baythroid XL 1 EC	3A	14	Do not exceed 0.066 lb ai/A/season.
Bifenthrin	Brigade 2 EC		14	Do not exceed 0.5 lb ai/A/season. Do not feed or graze.
Esfenvalerate	Asana XL 0.66 EC		21	Do not feed or graze.
Fenpropathrin	Danitol 2.4 EC		14	Do not feed forage or hay within 14 days of treatment. Do not exceed 2.66 pt/A/season.
Gamma-cyhalothrin	Declare 1.25 CS Proaxis 0.5 CS		14	Do not exceed 0.38 pt/A (Declare) or 0.96 pt/season (Proaxis).
Lambda-cyhalothrin	Karate Z 2.08 CS		14	Do not feed or graze.
Zetamethrin	Mustang Max 0.8EC		7	Do not exceed 0.15 lb ai/A/season. Do not feed or graze.
Spinetoram	Radiant 1 SC	5	3	Do not exceed 3 appl. per season. Do not feed or graze.
Spinosad	Blackhawk 36 WDG	5	3	Do not exceed 9 fl oz/A/season.

*IRAC group number (Insecticide Resistance Action Committee) indicates mode of action. Repeated pest exposure to the same mode of action increases the risk of insecticide resistance.

Note: there are many generic insecticide brands, particularly for pyrethroids. For equivalent generic rates compare active ingredient concentrations to this table. The label is the law. Always read and follow all pesticide label restrictions.