



EXTENSION

Pest e-alerts



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Fall Armyworm Watch in Winter Wheat and Late Season Soybean Pests

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Our “fall armyworm trap network” is working well! Kyle Worthington, Extension Educator in Canadian County reports fall armyworm trap numbers vary depending on their location. Our pheromone traps that are set in Chickasha, Lahoma and Perkins are also catching increasing numbers of fall armyworm moths. We have also received reports from Grant County of windowpaning in some early planted wheat. The bottom line is that **wheat growers need to be ready to protect their wheat fields from fall armyworms.**

The first signs of fall armyworm feeding are “window paned” leaves. Follow up by looking for all sizes of fall armyworm caterpillars. Examine plants along the field margin as well as in the interior, because they sometimes move in from road ditches and weedy areas. The suggested treatment threshold is 2-3 larvae per linear foot of row in wheat with active feeding.



This photo, taken by Lanie Hale in 2017 illustrates the importance of looking closely when scouting. He counted 3 fall armyworms per row foot from his visual count (which is treatment threshold) but when he looked closely at his photo on his computer screen, he saw 15 worms in an area the size of his hand (they were very tiny, and probably newly hatched). It is easy to miss some of these little worms in the field because they hide in residue and are very tiny. If needed, get some reader glasses (like I have) to make sure you can see these tiny critters!



It is much easier to control fall armyworm with an insecticide when they are small (less than $\frac{1}{2}$ inches). Let's hope that this year, fall armyworm infestations in winter wheat are a rare thing in Oklahoma, but I repeat, don't let your guard down!

Soybean Insect Pest Watch

Late-planted soybean is vulnerable to several insect pests that warrant scouting for. The first set are three defoliating caterpillars. Before deciding to treat the soybean field with an insecticide, I recommend a two-step process for making that decisions. Step 1: properly identify the caterpillar(s) in question, and Step 2: properly estimate defoliation before selecting an insecticide for control.

Step 1: The caterpillars in question are the velvetbean caterpillar, the green cloverworm, and the soybean looper. At first glance, these three caterpillars are “lookalikes” but they can be easily distinguished with closer inspection. It required that you be able to count to 5, that is count their feet!

Figure 1: Silhouette of three common foliage-feeding soybean caterpillars: (A: soybean looper, B: green cloverworm, C: velvetbean caterpillar).

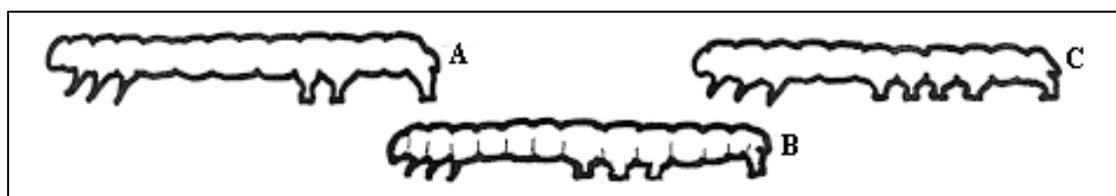


Image courtesy of North Carolina State University

Cabbage/Soybean loopers are light green and as they mature they develop white stripes, two on top and two on each side. **They have three pairs of prolegs, two pairs on the abdomen and one pair at the anal end (Figure 1 A).** Larvae move in a characteristic “looping” motion. They reach about 1.2 inches long at maturity.



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Green cloverworm larvae can be confused with cabbage/soybean loopers because they also move in a “looping” motion. They are pale green with two longitudinal stripes, and **they have four pairs of abdominal prolegs, three pairs on the abdomen and one pair at the anal end (Figure 1 B).** A mature larva measures 1.15 inches.

Velvetbean caterpillars vary in color from green, to brown, to black. As they mature they develop white stripes, one on top and two on each side. They have **five pairs of prolegs, four pairs on the abdomen and one pair at the anal end (Figure 1 C)** and reach about 1.9 inches at maturity. Larvae thrash violently when disturbed.



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Besides these three caterpillars, there is a caterpillar that feeds predominately on the soybean seed pod, the soybean podworm, more commonly known as the corn earworm.



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The soybean podworm is generally a pod feeder. **They have five pairs of prolegs, four pairs on the abdomen and one pair at the anal end (Figure 1 C)**. The body color varies with the host plant and ranges from shades of pink, yellow, green, brown, and black. Larvae usually have darker or lighter stripes running lengthwise on the body and can be positively identified by the presence of short, sharp microspines between the hairs on the body. Mature larvae reach 1.2 inches.

Step 2: To estimate defoliation in soybean, randomly collect 6 leaflets (2 from the lower, 2 from the middle, and 2 from the top of the canopy) in 5 locations and estimate % defoliation by averaging the defoliation level from 30 leaflets using Figure 2 (below). Treatment thresholds are listed in Table 1 (below).

Figure 2: Visual representation of percent defoliation in soybean.

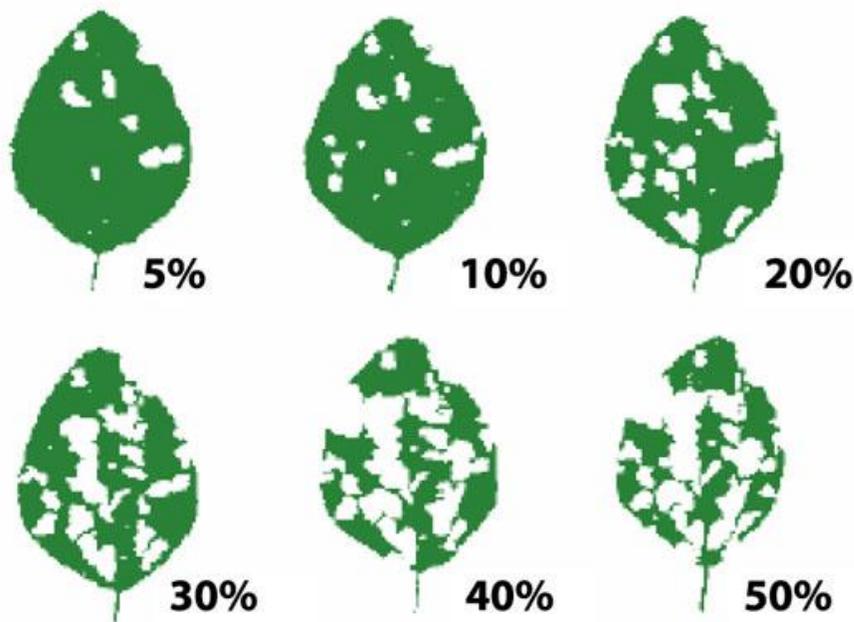


Table 1: Suggested treatment thresholds based on defoliation (or pod feeding) and growth stage in soybean.

PLANT STAGE	TREATMENT THRESHOLD
3-leaf to beginning of bloom	35% average defoliation
Bloom to pod fill:	15-20% average defoliation
Full pod fill to maturity:	35-40% average defoliation, or 5-10% pods damaged.

Selection of insecticides can depend on the predominant species of caterpillar present in the field. Soybean loopers are often resistant to pyrethroid insecticides so there are more limited choices for insecticide control of soybean looper.

If you have some pod feeding as well as defoliation, make sure you are protecting the pods. The treatment threshold for corn earworm is 2 per row foot. If you have a combined set of defoliators and pod feeders, it simplifies the treatment decision.

Finally, soybean growers need to consider managing for stinkbugs. As soybeans set seed and fill out, they need protection from pod-feeding stinkbugs. Several species will attack soybean, including the green, southern green and brown stinkbug. Adult stinkbugs are shield-shaped with a large triangular scutellum near the shoulder region. They are brown or green and are about 3/8 to 5/8 inches long.



Southern green stink bug



Brown stinkbug

Stinkbug eggs are barrel-shaped and laid in clusters of 25-100, mostly on the underside of leaves. Eggs may be yellow, white or green but will turn to pink or darker as the developing nymphs become ready to hatch. Nymphs vary in color, depending on their age and species. Some are quite colorful, with black, white and pink markings on their body.



Photo: Herb Pilcher, USDA ARS, Bugwood.org

Stinkbugs damage stems and pods with piercing-sucking mouthparts, sucking the juices out of the pods, and cause pod drop, yield loss and reduced seed quality. Damage from stinkbug (left) can be similar to damage from drought (right), so make sure to sample and confirm the presence of stinkbug in the field.



Soybean fields planted in rows can be scouted by shaking plants over a drop cloth. The plant-shaking method works best after the beans reach one foot in height. A drop cloth consists of a piece of cloth (white or dark) measuring 24" x 42". Each end of the cloth is stapled to a thin strip of wood, approximately 1/2" to 1" wide and 24" long.



To begin the survey, randomly select a site in the field, kneel between the two rows, and unroll the cloth from one row over to the opposite row. Extend each arm forward parallel with the row on either side and vigorously shake the vines over the cloth. Your arms, from your elbows to your fingertips, will allow you to sample approximately 1 1/2 row-feet of plants on each side of the row. Thus, three row-feet may be sampled at each site. Count the insects that fall to the cloth. Repeat this process for 10 sites per 50 acres. Infestations are characterized as to the number of stinkbugs per 30 row-feet.



Sweep nets can also be used to scout for stinkbugs in soybean. Make 10 consecutive sweeps (swinging the net from side to side 180 degrees across the body, one swing per step) with a standard 15-inch diameter sweep net while walking through the field. After 10 successive sweeps, remove the insects from the net, identify and count them. Repeat this procedure 5 times for 50 sweeps and compare counts with suggested economic thresholds

Photo: Howard F. Schwartz, Colorado State University, Bugwood.org

The thresholds for stinkbugs during pod set and pod fill are as follows:

Drop Cloth: 1 stinkbug per foot of row

Sweep net: 1-2 stinkbugs per sweep

There are numerous insecticides registered for stinkbug control. Specific control suggestions for all the pests that we have discussed are listed in in E-832, 2020 OSU Extension Agents' Handbook of Insect, Plant Disease and Weed Control or for wheat pests, [CR 7194 Management of Insect and Mite Pests in Small Grains](#) and for soybean pests, [CR-7167 Management of Insect and Mite Pests in Soybean](#).

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