Pest e-alerts

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Vol. 17, No. 28 http://entoplp.okstate.edu/pddl/pdidl **Aug 20, 2018**

Soybean Defoliators Reported, and Fall Armyworms are Taking Flight

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I have received several reports of green cloverworms feeding on soybean. There are three caterpillars that commonly defoliate soybean. It is important to first, properly identify them, and secondly, properly estimate defoliation before selecting an insecticide for control. At first glance, these three caterpillars are "lookalikes" but they can be easily distinguished with closer inspection. A key is to count their feet!

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

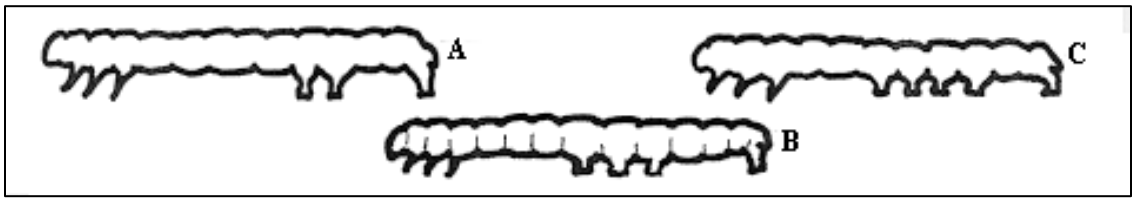

Image courtesy of North Carolina State University

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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Corn earworm (also known as 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.

The next step is to assess the level of defoliation. 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.

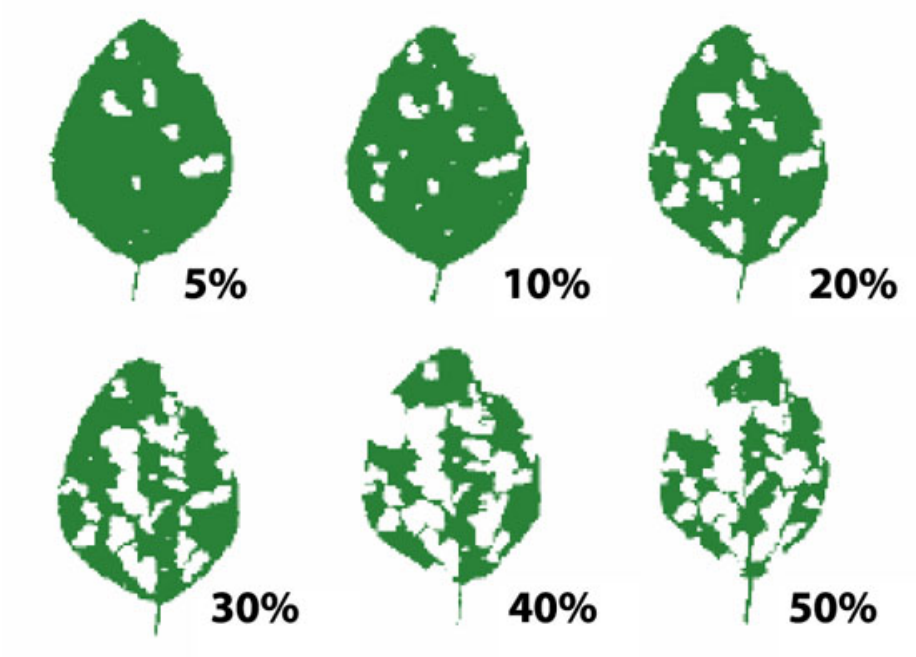

Table 1: Suggested treatment thresholds based on defoliation (or pod feeding) and growth stage in soybean.

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.

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 makes a treatment decision more easy.

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.

Specific recommendations for control of soybean caterpillars are listed in CR-7167 Management of Insect and Mite Pests in Soybean http://pods.dasnr.okstate.edu/docushare/dsweb/Get/Document-2347/CR-7167web2018.pdf and E-832 OSU Extension Agents' Handbook of Insect, Plant disease and Weed Control.

We have also been trapping for fall armyworms to monitor their flight activity. We don't have established thresholds based on pheromone traps, but these traps can serve as an early warning for future infestations. It is yet to be determined if they will cause problems this fall in pastures and wheat, but it is not too early to begin thinking about how producers might have to deal with them if they become problematic. Consult the newly updated OSU Fact Sheets CR-7193 "Management of Insect Pests in Rangeland and Pasture" and CR-7194 Management of Insect and Mite Pests of Small Grains for control suggestions.

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources.