



Pest e-alerts



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Managing Pod-feeding Insects in Soybean

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We have received scattered reports from NE Oklahoma of stink bug activity and foliage and pod-feeding caterpillars in soybean. As soybeans set seed and fill out, they definitely need protection from pod-feeding insects. This information is also relevant for North Central Oklahoma in double-crop soybean.



Photo Clemson University, Bugwood.org

Figure 1: corn earworm

Pod-feeding insects can cause serious losses to soybean yield. The most common pod-feeding caterpillar is the corn earworm, also known as the soybean podworm or the cotton bollworm (Figure 1). Because they also are a pest of corn and cotton, they can be quite prevalent at times. Larvae develop through six instars. Newly hatched caterpillars measure 1.5 mm long, with a translucent, yellowish white body. This caterpillar can vary considerably in color, but is commonly green, yellowish or black with noticeable longitudinal cream bands and an orange head capsule. They reach more than 1 ½ inches when fully grown. Small worms are often be found in flower clusters, but they will move to leaves and pods as they get larger

Another pod-feeder is the stink bug. Several species will attack soybean including the green, southern green and brown stink bug. Adult stinkbugs are shield-shaped with a large triangular scutellum near the shoulder region (Figure 2). They are brown or green and are about 3/8 to 5/8 inches long. Eggs are barrel-shaped and laid in clusters of 25-

100, mostly on the underside of leaves (Figure 3). Eggs may be yellow, white or green but will turn to pink or darker as the nymphs become ready to hatch. Nymphs vary in color, depending on their age and species (Figure 4). Some are quite colorful, with black, white and pink markings on their body. They 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, Figure 5), so make sure to sample and confirm the presence of stinkbug in the field.



Figure 2: Southern green stink bug



Figure 3: Stink bug eggs



Photo: Herb Pilcher, USDA ARS, Bugwood.org

Figure 4: Stink bug nymph



Figure 5: Stink bug injury to soybean

Grasshoppers will also feed on soybean pods, often chewing through the pod into the seed. Two common species are the differential (Figure 6) and red-legged grasshoppers (Figure 7). Grasshopper eggs are typically laid in undisturbed areas, such as road ditches (or sometimes no-till fields). When they hatch, they are not mobile, but they begin to wander as they get older, and they eat more foliage. They cause maximum damage once they become adults, and are more difficult to control because they are larger and can fly to new areas for feeding.



Photo: David Riley, University of Georgia, Bugwood.org

Figure 6: Differential grasshopper



Photo: Ross Ottens, University of Georgia, Bugwood.org

Figure 7: Redlegged grasshopper

Soybean fields planted in rows can be scouted by shaking plants over a drop cloth or shake sheet. The plant-shaking method is a useful tool for weekly surveys in soybeans after the beans obtain one foot in height. The equipment needed for this method 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.



Photo courtesy of Louisiana State University

To begin the survey, select a site at random 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 various species per 30 row-feet.



Another useful method for scouting seedling and broadcast beans is the sweep net method. 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 economic thresholds established for individual pests.

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

The thresholds for each of these pests during pod set and pod fill are as follows:

Corn earworm: 2 per foot of row
Stink bugs: 1 per foot of row
Grasshoppers: 5-10% of pods are damaged and grasshoppers are present

Treatment guidelines for soybean insects sampled with a sweep net:

Stink bug 1-2 per sweep
Corn earworm 3-4 per sweep

For other foliage-feeders, use a threshold of 30% defoliation before first bloom, 15% after first bloom.

There are numerous insecticides registered for pod-feeding insect control. Control information is listed in CR-7167 or pp 309-313 in E-832, 2018 OSU Extension Agents' Handbook of Insect, Plant Disease and Weed Control.

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