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A Mix of Soybean Defoliators this Summer

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A Mix of Soybean Defoliators this Summer

Abstract

Some minor defoliators have been noted in soybean this growing season, including caterpillars, beetles, and grasshoppers. Specifically, soybean defoliators observed include green cloverworm, soybean looper, alfalfa caterpillar, imported longhorn weevil, Japanese beetle, and Iowa colaspis beetle. It is important to remember that soybean can tolerate as much as 40% defoliation during vegetative growth stages, and 20% during pod-forming and pod-fillings stages before yield loss occurs. If defoliation is observed during scouting, it is important to identify the insect or combination of insects.

Keywords

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ICM News

July 24, 2015

Some minor defoliators have been noted in soybean this growing season, including caterpillars, beetles, and grasshoppers. Specifically, soybean defoliators observed include green cloverworm, soybean looper, alfalfa caterpillar, imported longhorn weevil, Japanese beetle, and Iowa colaspis beetle. It is important to remember that soybean can tolerate as much as 40% defoliation during vegetative growth stages, and 20% during pod-forming and pod-fillings stages before yield loss occurs. If defoliation is observed during scouting, it is important to identify the insect or combination of insects.

Green cloverworm

Description. The larvae are slender and range in length from about 1/16 to 1 ¼ inches long. They are pale green and have six white stripes that run the length of the body. The larvae have three pairs of thoracic legs and three pairs of abdominal prolegs (Fig. 1).



Figure 1. Green cloverworm. Photo courtesy of Adam J. Varenhorst.

Injury and scouting. Larvae consume soybean leaf tissue but avoid leaf veins. Green cloverworms should be scouted for during V5 through R5 soybean. If outbreaks occur they are generally observed during mid-July to mid-August. Consider foliar insecticides if defoliation exceeds 30% before R1 or 20% after R1; treatment thresholds are based on market value and control costs.

Crop value (\$/bushel)	Treatment cost (\$/ac), including insecticide and application						
	\$6	\$7	\$8	\$9	\$10	\$11	\$12
	# of larvae per foot of row						
\$6	7.4	8.6	9.8	11.1	12.3	13.5	14.7
\$7	6.3	7.4	8.4	9.5	10.5	11.6	12.6
\$8	5.5	6.5	7.4	8.3	9.2	10.1	11.1
\$9	4.9	5.7	6.6	7.4	8.2	9.0	9.8
\$10	4.4	5.2	5.9	6.6	7.4	8.1	8.8
\$11	4.0	4.7	5.4	6.0	6.7	7.4	8.0

Soybean looper

Description. Larvae have three pairs of thoracic legs and two pairs of abdominal prolegs. They range in color from light to dark green with white stripes. The end of the abdomen is often thicker than the head (Fig. 2). The caterpillars typically move in a looping or “inch worm” motion.



Figure 2. Soybean looper. Photo courtesy of Adam J. Varenhorst.

Injury and scouting. Larvae remove leaf tissue, which leaves irregular shaped holes between leaf veins. Feeding typically occurs on the lower portion of the plant canopy and rarely occurs on the pods. Scouting should occur between V5 through R5. Foliar insecticides are recommended if defoliation from the soybean looper larvae is greater than 30% before R1 or 20% after R1.

Alfalfa caterpillar

Description. The larvae are 1 to 1 ½ inches long with bodies that are typically dark green. One white stripe runs the length of each side of the body. The caterpillars have three pairs of thoracic legs and four pairs of abdominal prolegs (Fig. 3).



Figure 3. Alfalfa caterpillar. Photo courtesy of Adam J. Varenhorst.

Injury and scouting. The alfalfa caterpillar is not considered an economic or occasional pest of soybean. The defoliation caused by this insect should be added to cumulative defoliation caused by other pests. This insect does not need to be scouted for, but may be encountered when scouting for other caterpillars in soybean.

Imported longhorn weevil

Description. Adults are small, mottled gray beetles with a broad snout. The antennae are elbowed, half the length of the body, and located on the snout (Fig. 4A).

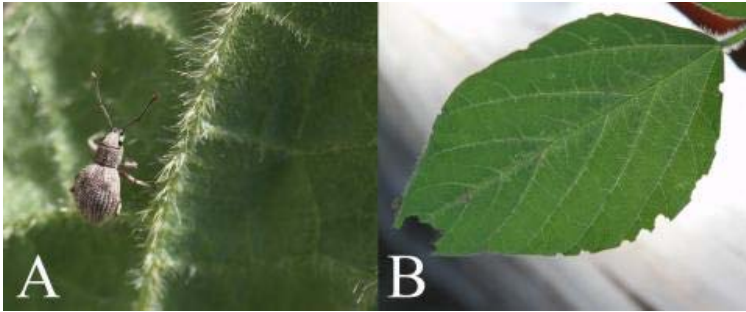


Figure 4. (A) Imported longhorn weevil. (B) Typical feeding. Photo courtesy of Adam J. Varenhorst.

Injury and scouting. Adults consume leaf tissue, which results in a ragged appearance of soybean leaves. The adult feeding generally begins on the edge of the leaves and results in a scalloped edge (Fig. 4B). When severe defoliation occurs it is confined to field edges. Imported longhorn weevils are rarely economic pests of soybean, but fields in southern and western Iowa with a history of weevil infestations should be scouted from V5 to R2.

Japanese beetle

Description. Adult beetles are ½ inch long with an oval body. The head is metallic green and the hardened forewings are copper colored. There are six white tufts of hair along each side of the abdomen (Fig. 5).



Figure 5. Japanese beetle. Photo courtesy of Adam J. Varenhorst.

Injury and scouting. Adult beetles have a wide host range that includes soybean. The injury caused to the leaf tissue of soybean results in skeletonized leaves where only the

veins of the leaf remain. Japanese beetle is known to aggregate and can potentially cause severe defoliation. The adults should be scouted for in soybean from R1 to R6. When scouting look for skeletonized leaves and clusters of the beetles along the border rows.

Iowa colaspis beetle

Description. Adult beetles are a yellow-brown color with white stripes on the forewings. The Iowa colaspis beetle is larger and has six lines on the forewings, compared to the smaller grape colaspis beetle with sixteen lines on the forewings (Fig. 6). The Iowa colaspis beetle is found primarily in western counties.



Figure 6. Iowa colaspis beetle. Photo courtesy of Adam J. Varenhorst.

Injury and scouting. The adults of this beetle cause jagged defoliation in the leaf tissue, and also elongated holes. These beetles have not been documented as an economically important defoliator of soybean, however fields with a history of colaspis beetles should be monitored from VE to R2.

Category:

Crop:
Soybean

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Erin Hodgson started working in the Department of Entomology at Iowa State University in 2009. She is an Associate Professor with extension and research responsibilities in corn and soybean. She has a general background in integrated pest management for field crops. Erin's current extension and...

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