

# AGRONOMIC ALERT



## EARLY-SEASON BEAN LEAF BEETLE IN SOYBEAN

The soybean bean leaf beetles that overwintered as adults are emerging and feeding on tender soybean tissue. Economic injury is possible if seedlings are cut below the cotyledons.

Adult bean leaf beetles (BLB) overwinter on the edges of wooded areas, in fence-rows, and ditch banks near soybean fields. They become active and migrate to emerging soybean fields for feeding and propagating when springtime temperatures reach 50° F. The earliest-planted soybean fields have the greatest risk of economic feeding injury<sup>1</sup>.

### Description

The adult BLB is about 1/4 inch long with variable coloration. The most common BLB color is light yellow or tan; however, some are orange or red. All BLBs, regardless of coloration, have a black triangle just behind the head (Figure 1). Additionally, they usually have four black spots with stripes along the body edges, however, these markings may be absent (Figure 1)<sup>1</sup>.

### Injury to Soybeans

The most critical time for early-season soybean damage, is from emergence through the first trifoliolate<sup>1</sup>. If growing points are destroyed or cotyledons are damaged before unifoliolate leaves emerge, reduced soybean yields are likely<sup>2</sup>. However, pre-bloom, soybeans can tolerate up to 30% defoliation.

Injury later in the season is from new BLB generations and

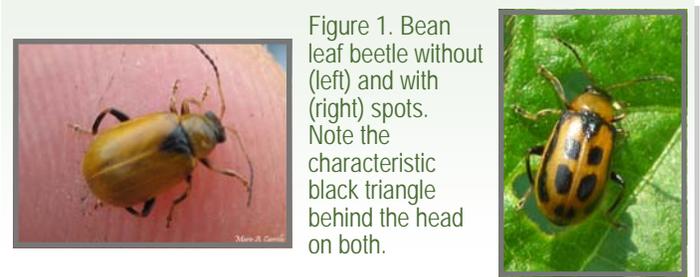


Figure 1. Bean leaf beetle without (left) and with (right) spots. Note the characteristic black triangle behind the head on both.

appears as leaf and pod feeding. Open pods allow for the possibility of soybean seed quality to deteriorate.

In addition to feeding injury, BLBs may also vector viruses such as bean pod mottle virus (BPMV). BPMV causes the discoloration of soybeans at harvest as well as the crinkling and mottling of leaves during the growing season. BPMV is also a cause of the "green stem" phenomenon, which can hinder harvesting operations.

### Scouting and Thresholds

Insecticide treatments should be considered if beetle numbers exceed the following thresholds<sup>1</sup>:

**Seedlings Stage:** 20% cut plants and gaps of 1 foot or more; or destruction of 1 seedling/ft. of row.

**Pre-Bloom:** 30% defoliation and 5 or more beetles per foot of row.

**Bloom to Pod Fill:** 20% defoliation and 16 or more beetles per foot of row.

**Seed Maturation:** 5-10% of pods damaged, the leaves or green, and 10 or more beetles per foot of row.

### Management Options

- Later planted soybeans generally have less early-season damage due to more beans being emerged for the BLBs to feed upon.
- Various insecticide seed treatments, such as those offered as Acceleron® seed treatment products, can help protect seedlings from early bean leaf beetle feeding (Figure 2).
- Several foliar insecticides are labeled for bean leaf beetles.

Sources:

<sup>1</sup> Ratcliffe, S.T. et al. 2004. *Bean Leaf Beetle*. University of Illinois Extension. *Integrated Pest Management*.

<sup>2</sup> Hunt, T. and K. Jarvi. April 22, 2011. *Watch for Bean Leaf Beetles in Early Emerging Soybeans*. University of Nebraska-Lincoln. *Crop Watch*.



Figure 2. Soybeans treated with Acceleron seed treatment products (photos on right), planted May 11th, near Orrville, OH exhibited far less BLB feeding compared to soybeans without insecticide seed treatments. The foliar feeding represents 20-30% defoliation, which is near the pre-bloom economic threshold.

Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS. Acceleron® and Technology Development by Monsanto and Design® are registered trademarks of Monsanto Technology LLC. All other trademarks are the property of their respective owners. ©2011 Monsanto Company. 06.09.2011.EJP