



Bean Leaf Beetle

What is the Bean Leaf Beetle?

The Bean Leaf Beetle is tied for second among all pest species attacking soybeans. They feed on soybean foliage, pods and seeds. The feeding not only causes plant damage but the beetles can also transmit bean pod mottle virus (BPMV).



Adult Bean Leaf Beetle

What is the Life Cycle of the Bean leaf Beetle?

The Bean Leaf Beetle overwinters as adults under leaf litter at or near soybean fields. Once spring temperatures reach 50 – 55 degrees F, adults become active and seek available host plants such as grasses, soybean plants, and other legumes. The coloration varies from red, orange, tan, or gray and the markings (dots, strips, or both) may vary among individual populations. However, all adults have a black triangle at the base of their forewings. Females are capable of producing 130 to 200 reddish colored eggs which they lay in the upper 5 inches of soil adjacent to plant stems. In 5 to 7 days the eggs will hatch and feed on underground plant parts. Depending on the soil temperature, bean leaf beetle larvae may feed 3 to 6 weeks before pupating into earthen cells. Two generations of bean leaf beetles usually occur in the North Central region. On average, the first adult generation peaks around the late vegetative or early reproductive soybean stage (mid July), and the second generation peaks at pod fill time (later August to early September). The second generation becomes the overwintering adults and eventually leave soybeans and feed on alfalfa and other legume hosts before seeking overwintering sites under crop and leaf debris.

What Kind of Damage Does Bean Leaf Beetle Do?

Both the larvae and adults are soybean pests. Larvae attack the roots and root hairs but show a preference for root nodules. Adults feed on foliage and pods. Pod damage by adults is most crucial because it can also lead to secondary disease infections of the pods and seed which lower both seed quality and quantity. Pod feeding may also cause complete pod loss and or pod lesions. Even though soybean plants may sustain more than 50% leaf damage, the soybean plant can compensate, unless damage occurs during the reproductive growth stage. Overall, a reduction of 0.6 pounds per acre can occur when beetles number one or more per foot.



**3 Pods on Right Damaged
by Adult Bean Leaf Beetle**



What is the Economic Threshold for Bean Leaf Beetle Control?

The University of Missouri uses the following guidelines to trigger treatment for the bean leaf beetle;

- Seedling Stage: 5 (five) or more bean leaf beetles or one or more damaged plants per foot of row.
- Past seedling stage to bloom: 10 (ten) or more bean leaf beetles per foot of row and or more than 30% defoliation.
- Bloom stage until seed maturity: 10 (ten) or more bean leaf beetles per foot of row and 20% defoliation OR at least 15 (fifteen) beetles per foot of row and at least 10% pod damage.

Feeding by first-generation beetles seldom result in economic yield loss, but second-generation feeding on pods in late summer can cause significant loss. As soon as soybean seedlings emerge, it is important to scout weekly for bean leaf beetle infestations.

Bean Leaf Beetle Control?

- Cultural: Bean leaf beetles are very difficult to control without chemicals. The beetles are very mobile and control options are limited. Discourage overwintering beetles by destroying plant debris and keeping vegetation mowed near susceptible crops. Beans planted in early to mid-June are more likely to escape damage by overwintering adults.
- Chemical: Before you select and apply an insecticide, review the manufacturer's label for safe use. Many different parasites and predators attack bean leaf beetles and other soybean pests. The diversity and abundance of beneficial insects should be considered before applying an insecticide.

Bean Leaf Beetle Quick Facts.

- There are two generations of bean leaf beetle per year.
- Both larvae and adults are soybean pests. Larvae attack the roots and adults attack the foliage and pods.
- Adult foliar damage (rounded holes) differs from caterpillar damage (ragged edges).
- Bean leaf beetle pod damage (outer pod wall) is less severe than that caused by grasshoppers (seeds destroyed).
- Pod damage by adults is most crucial because it can also lead to secondary disease infections of the pods and seeds and thereby lower seed quality and quantity.



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