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A New Bean Leaf Beetle Threshold Calculator is Created

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Abstract

In April, an ICM News [article](#) predicted a slightly higher winter survivorship of bean leaf beetle in Iowa. Not surprisingly, this summer I have been hearing about a few soybean fields with bean leaf beetle. Most reports of overwintering and first generation beetles are at low densities with negligible defoliation. There are two generations of bean leaf beetle in Iowa (Fig. 1), with the second generation emerging in a few weeks. Scouting for bean leaf beetle and other defoliators should continue until seed set.

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A New Bean Leaf Beetle Threshold Calculator is Created

Erin Hodgson and Mike McCarville, Department of Entomology

In April, an ICM News [article predicted a slightly higher winter survivorship of bean leaf beetle](#) in Iowa. Not surprisingly, this summer I have been hearing about a few soybean fields with bean leaf beetle. Most reports of overwintering and first generation beetles are at low densities with negligible defoliation. There are two generations of bean leaf beetle in Iowa (Fig. 1), with the second generation emerging in a few weeks. Scouting for bean leaf beetle and other defoliators should continue until seed set.

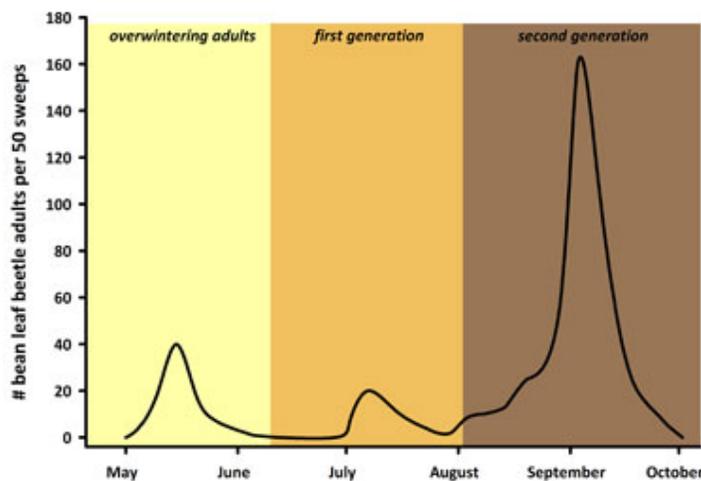


Figure 1. This is an example of bean leaf beetle population dynamics in Iowa. The second generation can be an economically important defoliator in soybean.

Sampling

Soybean fields in the reproductive stages can be sampled for bean leaf beetle by using either a drop cloth or a sweep net. Scout each field and each variety separately and walk into the field at least 100 feet before sampling.

Drop cloth

- Place a 3-foot wide strip of cloth on the ground between the rows.
- Bend the plants on one row over the cloth, and shake them vigorously.
- Count the number of beetles that drop on the cloth.
- Repeat the procedure four times for every 20 acres of the field.
- Estimate the average number of beetles per 3-foot of row.

Sweep net

- Take 20 sweeps while moving forward. A sweep is defined as a 180-

degree pass across two soybean rows or along 3 linear feet within a row.

- Repeat the procedure four times for every 20 acres of the field.
- Estimate the average number of beetles per 20 sweeps.



Sweep netting for bean leaf beetle in 30-inch rows (top) or narrow rows (bottom). Photos by Marlin E. Rice.

Management

The overwintering and first generation populations do not typically cause economic defoliation, but can be a useful predictor of the second generation. Bean leaf beetle feeding on soybean pods caused by the second generation can lead to significant reductions in seed quality and yield throughout Iowa. It is important to recognize [bean leaf beetle injury](#). Managing bean leaf beetles in soybean during the pod set and pod fill can be frustrating to growers and crop advisers because adults may be feeding on pods for a couple of weeks before the population reaches the economic threshold.

To help make treatment decisions easier for first and second generation bean leaf beetles, a dynamic Excel spreadsheet has been created. These calculations use the expected market value (bushels per acre) and cost of control (dollars per acre) to determine the treatment threshold. This calculation assumes bean pod mottle virus is not an issue for seed sale.

To make these calculations easier and always up-to-date with the changing market, follow this link to a [downloadable spreadsheet](#). By saving the spreadsheet to your personal computer or tablet, it can be used repeatedly as market values fluctuate. There are a few examples to demonstrate the tools.

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