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## Management of bean leaf beetle to reduce defoliation

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## **Abstract**

The last three issues of the ICM newsletter have contained articles on the bean leaf beetle in soybean. The April 29 [article](#) reported high winter survival of the beetles; the May 6 [article](#) outlined the early-season management of the beetle and bean pod mottle virus; and the May 20 [article](#) showed how to distinguish between twelvespotted lady beetle and bean leaf beetle. My article adds to the saga by discussing beetle management to reduce defoliation.

## **Keywords**

Entomology

## **Disciplines**

Agricultural Science | Agriculture | Entomology

# INTEGRATED CROP MANAGEMENT

## Management of bean leaf beetle to reduce defoliation

The last three issues of the ICM newsletter have contained articles on the bean leaf beetle in soybean. The April 29 [article](#) [1] reported high winter survival of the beetles; the May 6 [article](#) [2] outlined the early-season management of the beetle and bean pod mottle virus; and the May 20 [article](#) [3] showed how to distinguish between twelvespotted lady beetle and bean leaf beetle. My article adds to the saga by discussing beetle management to reduce defoliation.

The early-season management technique outlined in the May 6 article is designed to reduce inoculation of soybean with bean pod mottle virus during bean leaf beetle feeding. It included scouting for overwintering beetles as the beans emerge and treating with a long residual chemical if beetles are present; followed by scouting beginning in early July and treating again, this time for the first-generation beetles as they begin to emerge. Treatment thresholds based on beetle numbers were not given, and it was implied that treatments are warranted even if very few beetles are present. The recommendation is based on the presumption, however, that the presence of bean pod mottle virus had been documented the previous season and beetle management was being conducted to reduce disease incidence.

If early-season bean leaf beetles are being managed to reduce defoliation of the beans, much higher densities of the beetle can be tolerated. Economic damage will not result until cotyledons are destroyed and regrowth is suppressed by continued feeding. The numbers of beetles necessary to cause economic injury to soybean that have an estimated market value of \$5.00 per bushel at different control costs are presented in Table 1.



**Some bean leaf beetles are red instead of yellow.**

[Enlarge](#) [4]

Later in the season, feeding by second-generation beetles, which occurs on all reproductive stages of soybean, poses the greatest injury risk. In the past, the second-generation beetles were sampled and controls applied as necessary. Substantial damage may occur during the time it takes the beetle numbers to increase to treatable levels. A newer approach, presented at the 2000 ICM Conference, bases second-generation controls on first-generation beetle numbers. If first generation numbers reach densities that indicate the second generation will cause economic losses, treatments are made in August as soon as the second-generation beetles are found. Sampling of the first-generation beetles should begin when peak densities are forecast. The model used to forecast peak beetle numbers is based on heat units accumulated from soybean emergence. Therefore, it is important to record crop emergence now to be used later to time sampling.

In summary, bean leaf beetle treatments that are being made now should be directed toward prevention of disease unless bean emergence is suppressed by beetle feeding. If bean pod mottle virus is not present, there is little chance on recovering the cost of the insecticide.

**Table 1. Early-season bean leaf beetle economic thresholds in soybean based on beetles per plant.**

	Cost of treatment (\$/acre)	

Market value (\$/bu)	Growth stage VC						Growth stage V1						Growth stage V2					
	\$6	\$7	\$8	\$9	\$10	\$11	\$6	\$7	\$8	\$9	\$10	\$11	\$6	\$7	\$8	\$9	\$10	\$11
\$5.00	2.4	2.8	3.2	3.6	4.0	4.4	3.7	4.4	5.0	5.6	6.2	6.8	5.9	6.8	7.8	8.8	9.8	10.7

For beetles per row-foot, multiply number by 7.6.

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**Source URL:**

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2002/5-27-2002/manageblb.html>

**Links:**

- [1] <http://www.ipm.iastate.edu/ipm/icm/2002/4-29-2002/blbwinter.html>
- [2] <http://www.ipm.iastate.edu/ipm/icm/2002/5-6-2002/blbearlyman.html>
- [3] <http://www.ipm.iastate.edu/ipm/icm/2002/5-20-2002/ladybean.html>
- [4] <http://www.ent.iastate.edu/imagegal/coleoptera/beanlb/0212.30redblb.html>

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