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Mild Winter for Bean Leaf Beetle

Erin W. Hodgson

Iowa State University, ewh@iastate.edu

Adam J. Sisson

Iowa State University, ajsisson@iastate.edu

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Abstract

Most Iowa winters are harsh on overwintering bean leaf beetles. Typical statewide overwintering mortality ranges from 60-99 percent (see a [20-year historical record of predicted bean leaf beetle mortality](#) in central Iowa.) A combination of cold winter temperatures and the high adoption of insecticidal seed treatments have drastically curbed bean leaf beetle populations throughout much of the state.

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Mild Winter for Bean Leaf Beetle

By Erin Hodgson, Department of Entomology, and Adam Sisson, Integrated Pest Management

Most Iowa winters are harsh on overwintering bean leaf beetles. Typical statewide overwintering mortality ranges from 60-99 percent (see a [20-year historical record of predicted bean leaf beetle mortality](#) in central Iowa.) A combination of cold winter temperatures and the high adoption of insecticidal seed treatments have drastically curbed bean leaf beetle populations throughout much of the state.

Bean leaf beetle adults are susceptible to cold weather and will die when the temperature is below -10 degrees C, but they have adapted to winter by protecting themselves in leaf litter and insulating snow cover. An overwintering survival model was developed by Lam and Pedigo from Iowa State University in 2000, and is helpful for predicting winter mortality based on accumulated subfreezing temperatures. Figure 1 is a map of predicted mortality in Iowa for the 2011-2012 winter.

In general, Iowa experienced a warm winter, with predicted mortality ranging from 30-53 percent. The predicted mortality estimates are the lowest since the overwintering model was developed. Many areas in the state had less than normal accumulated snow cover, which could increase actual adult mortality. [A recent ICM News article](#) discusses the implications for warm winters, lack of snow cover and insect survival.

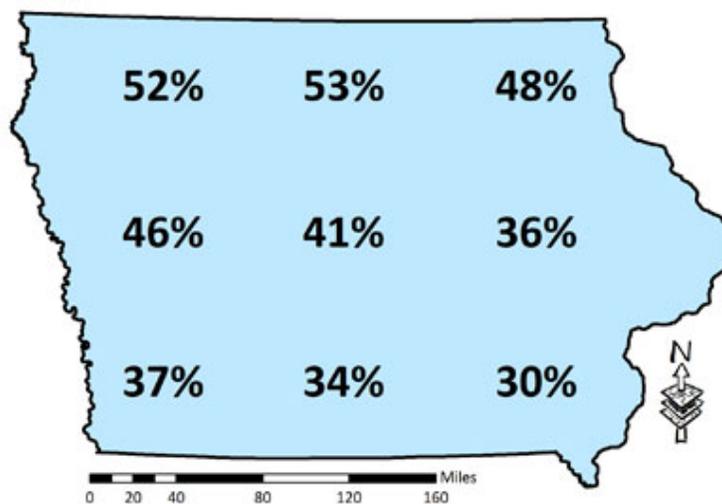


Figure 1. Predicted overwintering mortality of bean leaf beetle based on accumulated subfreezing temperatures during the 2011-2012 winter (1 October 2011 – 8 March 2012).

Overwintering adults are strongly attracted to soybean and will move into fields with newly emerging plants (Fig. 2). Early-planted fields should be monitored closely this year, given the predicted likelihood of adult

overwintering survival. Other fields of concern include food-grade soybean and seed fields where reductions in yield and seed quality can be significant. Information about [managing bean leaf beetle and bean pod mottle virus](#) is available on the Iowa State entomology website.



Figure 2. Overwintering bean leaf beetles can defoliate young soybean plants and vector bean pod mottle virus.

Bean leaf beetle is easily disturbed and will drop from plants and seek shelter in soil cracks or under debris. Sampling early in the season requires you to be sneaky to estimate actual densities. Although overwintering beetles rarely cause economic damage, their presence may be an indicator of building first and second generations later in the season.

Erin Hodgson is an assistant professor of entomology with extension and research responsibilities; contact at ewh@iastate.edu or phone 515-294-2847. Adam Sisson is an Integrated Pest Management program assistant. Sisson can be contacted by email at ajisson@iastate.edu or by calling 515-294-5899.

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