

4-9-2014

## Predicted Mortality of Bean Leaf Beetle Is Highest in 25 years

Erin W. Hodgson

*Iowa State University*, ewh@iastate.edu

Adam J. Sisson

*Iowa State University*, ajsisson@iastate.edu

Follow this and additional works at: <http://lib.dr.iastate.edu/cropnews>

 Part of the [Agricultural Science Commons](#), [Agriculture Commons](#), and the [Entomology Commons](#)

---

### Recommended Citation

Hodgson, Erin W. and Sisson, Adam J., "Predicted Mortality of Bean Leaf Beetle Is Highest in 25 years" (2014). *Integrated Crop Management News*. 62.

<http://lib.dr.iastate.edu/cropnews/62>

**The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit <https://crops.extension.iastate.edu/>.**

---

# Predicted Mortality of Bean Leaf Beetle Is Highest in 25 years

## **Abstract**

Bean leaf beetle adults are susceptible to cold weather and most will die when the air temperature falls below -10°C. However, they have adapted to winter by protecting themselves under plant debris and loose soil. 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 accumulating subfreezing temperatures. Predicted mortality rates in Iowa were extremely high during the 2013-2014 winter and ranged from 89-99 percent (Fig. 1). Not surprisingly, central and northern Iowa experienced colder temperatures, and most of the bean leaf beetle adults are not expected to survive.

## **Keywords**

Entomology

## **Disciplines**

Agricultural Science | Agriculture | Entomology

search

Subscribe to Crop News

Archives

2014

2013

2012

2011

2010

2009

2008

Previous Years

ISU Crop Resources

Extension Field Agronomists

Crop & Soils Info

Pesticide Applicator Training

Agronomy Extension

Entomology Extension

Plant Pathology Extension

Ag and Biosystems Engineering Extension

Agribusiness Education Program

Iowa Grain Quality Initiative

College of Agriculture and Life Sciences

ISU Extension

# Integrated Crop Management NEWS

- PRINT STORY
- EMAIL STORY
- ADD TO DELICIOUS
- ATOM FEED
- FOLLOW ON TWITTER

## Predicted Mortality of Bean Leaf Beetle Is Highest in 25 years

By Erin Hodgson and Adam Sisson

Bean leaf beetle adults are susceptible to cold weather and most will die when the air temperature falls below -10°C. However, they have adapted to winter by protecting themselves under plant debris and loose soil. 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 accumulating subfreezing temperatures. Predicted mortality rates in Iowa were extremely high during the 2013-2014 winter and ranged from 89-99 percent (Fig. 1). Not surprisingly, central and northern Iowa experienced colder temperatures, and most of the bean leaf beetle adults are not expected to survive.

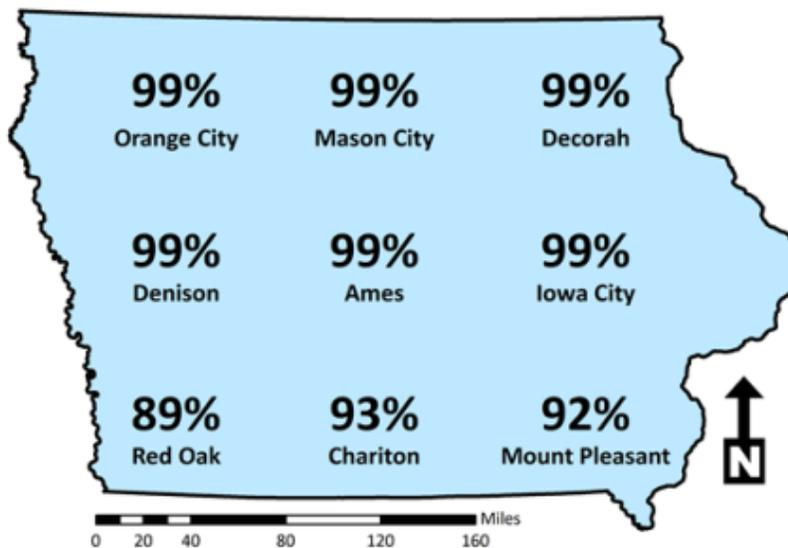


Figure 1. Predicted overwintering mortality of bean leaf beetle based on accumulated subfreezing temperatures during the winter (October 1, 2013 – March 31, 2014).

The statewide-predicted mortality from the 2013-2014 winter is the highest since Marlin Rice started tracking these data in 1989. It is important to remember insulating snow cover and tillage residue can help protect bean leaf beetle from harsh air temperatures. Recent fluctuating temperatures can also negatively influence spring populations. The average mortality rate in central Iowa over the last 25 years is 72 percent, but >99 percent of adults were predicted to have been killed last winter around Ames (Fig. 2).

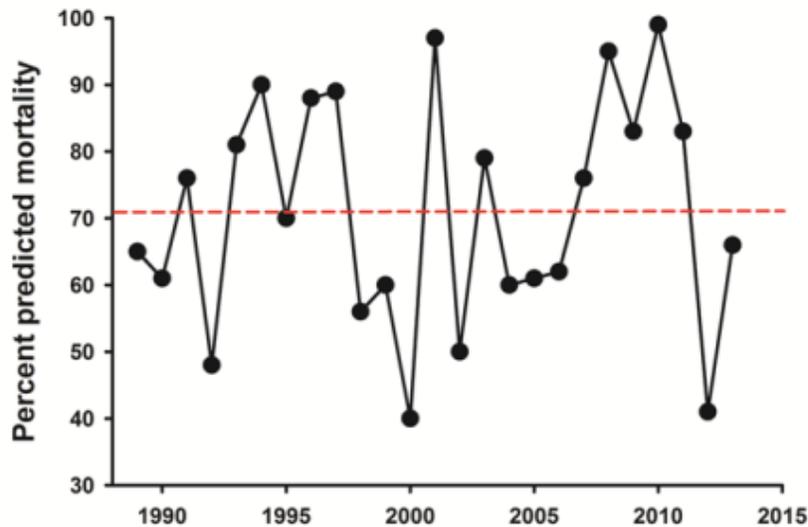


Figure 2. Predicted bean leaf beetle mortality by year for central Iowa; the red line indicates the average mortality rate.

Although overwintering beetle populations are expected to be low this year, consider scouting soybean fields, especially in southern Iowa, if:

1. Soybean is planted near alfalfa fields or if the field has the first-emerging plants in the area. Overwintering adults are strongly attracted to soybean and will move into fields with emerging plants (Fig. 3).
2. Fields have food-grade soybean or are seed fields where reductions in yield and seed quality can be significant.
3. Fields have a history of bean pod mottle virus.



Figure 3. Overwintering bean leaf beetles can defoliate young soybean plants. Photo on the left by Marlin E. Rice.

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. To learn more about managing bean leaf beetle and bean pod mottle virus, click [here](#).

Erin Hodgson is an associate professor of entomology with extension and research responsibilities; contact her at [ewh@iastate.edu](mailto:ewh@iastate.edu) or by calling 515-

294-2847. Adam Sisson is an Integrated Pest Management extension specialist; contact him at [ajsisson@iastate.edu](mailto:ajsisson@iastate.edu) or by calling 515-294-5899.

---

This article was published originally on 4/9/2014. The information contained within the article may or may not be up to date depending on when you are accessing the information.

---

Links to this material are strongly encouraged. This article may be republished without further permission if it is published as written and includes credit to the author, Integrated Crop Management News and Iowa State University Extension. Prior permission from the author is required if this article is republished in any other manner.

---

Copyright ©2014 [Iowa State University Extension](#) | [Iowa State University](#)  
[Contact us](#) | [For Staff](#) | [Nondiscrimination and Information Disclosures](#) | [CMS Admin](#)  
Last Updated 4/9/2014