



Cereal leaf beetle

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Picture credits

John Tooker, PSU, Bucks Co pics.
Chris DiFonzo, MSU, all others

The cereal leaf beetle (CLB) is a small grain pest that is native to Europe and Asia. In 1962, it was found near Galien, MI in Berrien County. It has since spread across the Midwest and to the east coast, and also found in some wheat-producing states in the western U.S. CLB was initially an important defoliator in wheat and oats, but as a pest it is now relatively uncommon in Michigan. The U.S. government and universities such as MSU released several beneficial parasitoids in the 1960s and '70s, and these natural enemies effectively control CLB in many parts of the Midwest.

CLB adults overwinter along edges of field. They have pretty dark-blue wing covers, a distinctive red thorax (a red neck), and red legs. They emerge in the spring and lay eggs on the upper surface of small grain leaves. Larvae are white, fat, and hump-backed, with a black head and six small legs. However, larvae won't appear white in the field because they have unique defense mechanism to avoid being eaten - they smear a covering of excrement over their body, as in the photograph below.



USDA bulletin from 1965 warns farmers of the then recently-discovered cereal leaf beetle



Close-up of a cereal leaf beetle larvae.

Note its shiny, wet covering of fecal pellets. This covering provides a defense against predatory insects.

(if you were a ladybug, would you want to eat this?)



Larvae feed for 2-3 weeks on grain leaves, scraping the leaf surface. Hot-spots in fields appear white or frosted (similar to heavy alfalfa weevil feeding), but damage to an entire field is rare in Michigan. Infestations may be greater along field edges, and greater in oats than in wheat.

CLB larvae feed by scraping the leaf surface (right) Feeding gives leaves a white appearance.

Typical CLB feeding in Michigan is light (left) and involves a few plants or a small hot spot in a field.



Larvae pupate underground in late-May or early June (although the life cycle seems delayed in 2009). There is only one generation per year. New adults emerge and may feed on small grains or corn briefly, but then they spend the rest of the summer in an inactive state along field edges. Thus the only damage occurs in May and early June as larvae feed.

Management: Early in the season, the threshold is 3 or more eggs and/or larvae per plant. On larger plants, the threshold is one or more larvae per flag leaf. I have never seen a field over threshold in Michigan, but CLB is still a problem on the east coast. Avoid unnecessary insecticide applications to small grains for CLB, aphids, and other insects because broad-spectrum insecticides kill the parasitoids that are responsible for most of the control of CLB in Michigan.

Exceptional CLB damage is rare, but can occur, particularly in the eastern U.S. where parasitoids are not as well-established. This wheat field in Bucks County, Pennsylvania is heavily damaged and has multiple larvae per flag leaf. [May 28, 2009 – John Tooker, Penn State University]

