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Cereal Leaf Beetle

David L. Matthew Jr.

C. Richard Edwards
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The cereal leaf beetle was first reported in the United States in 1962. The initial infestation was discovered in Michigan and Indiana in a small area 15 to 25 miles west and northwest of South Bend, Indiana. Since then, it has spread throughout Indiana, into adjacent states and north and east into New York and southern Canada.

Host Plants
The cereal leaf beetle appears to feed only on plants of the grass family. Though it will feed on wild and cultivated grasses, such as orchardgrass, quackgrass and timothy, it prefers spring-seeded small grains—especially oats. Summer adults feed on corn leaves, but the plants outgrow this damage.

Type of Damage
Both adults and larvae cause damage by feeding on the host crop. The adult beetles eat longitudinal slits between the veins and completely through the leaves, and may kill the plant. The larvae eat only the outer surface of leaves, giving them a silver cast and the whole field a frosted appearance before the plants die.

Description
Adult: The adult is a hard-shelled beetle, measuring 3/16 inch long. Its wing covers and head are metallic bluish-black, while its legs and front segment of its thorax (just behind the head) are reddish-orange.

Egg: Newly-laid eggs are elliptical, yellow and
smaller than a pin head. Before hatching they
turn almost black. Eggs are deposited singly or in
rows of up to three or four, but never in clusters.
They are usually found close to the mid-rib on the
upper surface of (host plant) leaves. An exception
is corn, where eggs are often laid on the underside
of leaves.

Larva: The larva is slightly longer than the
adult and resembles a slug. Although its skin is ac-
tually yellow to yellowish-brown, the larva’s
black, slug-like appearance is caused by a moist
glob of fecal material which it deposits on its back.
The only time a larva is found without this excre-
tment is immediately after a molt.

Pupa: The pupa, or inactive stage, is also yel-
low to yellowish-brown. However, the pupa is rarely
seen, because it is encased under the soil surface
in an earthen cell which the larva builds before
pupation.

Life Cycle and Habits
Cereal leaf beetle adults overwinter, usually in
clusters, wherever they can find shelter—in old
corn stalk leaves, in the cracks of fence posts, in
chaff on the ground, in grain stubble and straw,
and under the loose bark of trees.

In the spring, when temperatures get above
60°F, the beetles come out of hibernation to feed.
They first attack wild grasses, such as quackgrass
and orchardgrass, near their hibernation spots.
Then they fly to fields of winter wheat and winter
barley. (Cereal leaf beetles are strong flying in-
sects. They have been collected as high as 1,000
feet above the ground in traps attached to an air-
plane.) When spring oats emerge, the beetles
quickly infest the young plants, where they will
both feed and lay their eggs.

The beetles feed for about 2 weeks before egg
laying begins. With warm weather, the eggs may
hatch in 5 days, and the larvae may develop in the
next 10 days. It is the larvae that do most of the
crop damage.

Before pupating, the larvae rest for a day or two
on the leaves of host plants. Then they descend
into the top 2 inches of soil, where they form pupal
cases and change into adults. The pupal stage usu-
ally lasts about 2 to 3 weeks before the new beetles
emerge.

These summer adults first seek food. They feed
mostly on corn which at that time is about knee
high and the only grain that is young and succu-
cent. After feeding for about 2 weeks, the beetles go
into summer hibernation for the rest of the season.
As fall and winter approach, they work their way
into deep cover for winter hibernation.

The cereal leaf beetle has only one generation
per year, in the field.

Control Measures
Control of the cereal leaf beetle is suggested
when counts of small larvae average more than
one larva per stem. Make counts on 20 randomly
selected stems in each of five areas of the field (to-
tal of 100 stems) to obtain the average count per
stem. If control is required, apply one of the follow-
ing insecticides:

1. Azinphosmethyl (Guthion) at 1/2 lb. actual
toxicant per acre (2 pints of 2 lb. per gallon EC or
1 lb. of 50% WP). Do not apply more than once per
season. Do not harvest for food, feed, forage or
graze within 30 days of treatment.

2. Endosulfan (Thiodan) at 1/2 lb. actual tox-
icant per acre (1 1/3 pints of 3 lb. per gal. EC). Do
not apply after heads begin to form. Do not feed
treated forage to livestock.

3. Malathion at 1 lb. actual toxicant per acre
(1/5 gal. of a 5-lb.-per gal. concentrate), or

4. Malathion ULV at 10 oz. per acre of the 95%
formulation. (For use by aerial application only by
specially nozzled aircraft.) Apply undiluted. Do
not harvest or graze malathion treated crops with-
in 7 days of treatment.

Other Control Methods
Parasites of the cereal leaf beetle have been re-
leased and are established in many counties of the
State. In addition, the wheat variety, Downy is
resistant to cereal leaf beetle. Wheat producers in
areas of heavy beetle infestations should consider
planting this variety.

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