

AGRONOMIC ALERT



Japanese Beetles in Corn and Soybean Fields

High populations of Japanese beetles might already be occurring across the region. Feeding by the adults can be a serious problem in both corn and soybean, thus scouting is crucial especially during the reproductive stages of both crops.

Mild winters and early planting generally promote higher populations of this insect. Heavily infested areas with white grubs, which are the larval stage, do not guarantee severe injury from adult beetles in the same area. Adults can interfere with pollination in both corn and soybean, which may negatively impact yield potentials.

Life Cycle and Identification

Adults emerge from the ground, mate, and soon after lay eggs. Females burrow 2 to 4 inches into the soil and lay 1 to 4 eggs every 3 to 4 days for several weeks.

The grubs grow quickly to a full size, about 1 inch long. Grubs feed on the roots of living plants and then overwinter. When soil temperature climbs above 50° F in the spring, the grubs begin to move up the soil surface again, pupate and remain there prior to emerging as adults.

Adult Japanese beetles are approximately ½ inch in length, have a metallic green head and neck region and reddish to bronze wing covers with a row of six bunches of white bristles along the side of their abdomen.

Corn Scouting and Thresholds

The adults feed on leaves, tassels, silks, and pollen. Corn leaves may appear “lacy”, or skeletonized but leaf feeding is hardly of economic importance.

Economic damage can occur when the beetles prevent pollination by early silk clipping. When the silks are clipped before or during pollination the ears will only be partially pollinated. Silk clipping after pollination does not affect yield. Such clipping is usually spotty and mainly occurs 10 to 12 rows deep into the field.

When scouting corn for Japanese beetles, always evaluate a representative portion of the field. If sampling only occurs near field edges, where populations of Japanese beetles are usually clumped together,

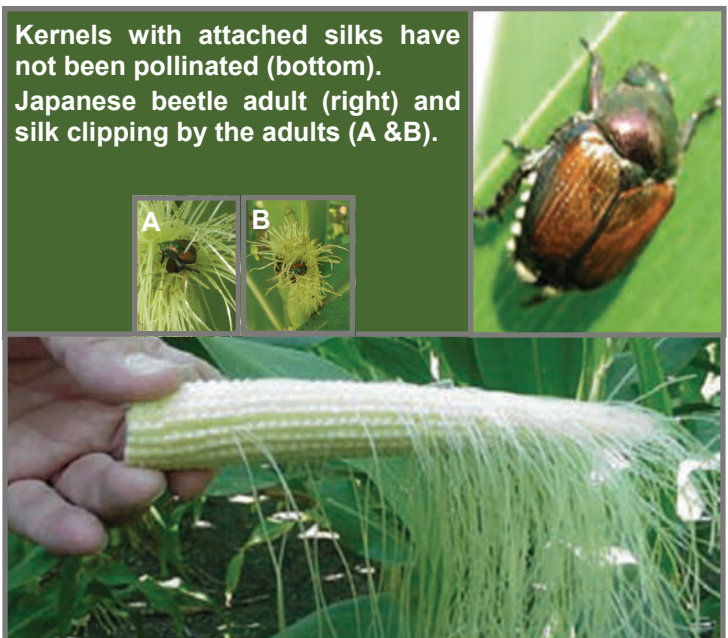
populations across the field could be overestimated. An insecticidal treatment should be considered during corn silking stage if:

1. There are 3 or more Japanese beetle adults per ear, **and**
2. Silks have been clipped to less than ½ inch, **and**
3. Pollination is less than 50% complete, **and**
4. Japanese beetles are still present and actively feeding.

Soybean Scouting and Thresholds

Adults feed on leaves and flowers but most of the damage from Japanese beetles is to the leaves. Although this insect can cause extensive defoliation, soybean plants have the capability to compensate for the

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Kernels with attached silks have not been pollinated (bottom). Japanese beetle adult (right) and silk clipping by the adults (A &B).

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damage and seldom affects yield potential. Scout flowering fields for the presence of Japanese beetles and the extent of defoliation.

There are a few guidelines established for defoliation levels during various soybean plant stages:

- Forty percent defoliation occurs prior to bloom can be tolerated without affecting yield potential.
- Fifteen to 20% defoliation occurring after bloom and during pod fill can negatively affect yield potential.
- Estimate the percent defoliation on randomly selected leaves in at least five different areas of the field.

Insecticidal treatments should be considered when defoliation reaches 30% before bloom, 20% between bloom and pod fill stages, and beetles are present and actively feeding.

Control

Insecticides recommended for control of Japanese beetles in corn and soybean can be found in Table 1.

Table 1. Insecticides labeled for control of Japanese beetle adults in corn and soybean.

Product (active ingredient)	Rate of application/ A in corn	Rate of application/ A in soybean
Adjourn™*	— ¹	5.8 to 9.6 oz
Ambush 25W*	—	6.4 to 12.8 oz
Asana® XL*	5.8 to 9.6 oz	5.8 to 9.6 oz
Baythroid® XL*	1.6 to 2.8 oz	1.6 to 2.8 oz
Bifenthrin 2EC™*	2.1 to 6.4 oz	— ²
Endigo ZC®*	—	3.5 to 4.5 oz
Leverage® 2.7*	—	3.8 oz
Proaxis™*	2.56 to 3.84 oz	3.2 to 3.84 oz
Warrior II with Zeon Technology®*	1.28 to 1.92 oz	1.6 to 1.92 oz

*use restricted to certified applicators.

¹product not labeled for this use in corn.

²product not labeled for this use in soybean.

Source: Iowa State University Extension, 2009.

Sources:

K. Cook and M. Gray. 2004. Japanese beetle fact sheet. Univ. of Illinois Extension, Integrated Pest Management.

Table data source: 2008 Illinois Agricultural Pest Management Handbook. <http://www.ipm.uiuc.edu>, (viewed 6/16/10).

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Individual results may vary, and performance may vary from location to location and from year to year. This result may not be an indicator of results you may obtain as local growing, soil and weather conditions may vary. Growers should evaluate data from multiple locations and years whenever possible. **ALWAYS READ AND FOLLOW PESTICIDE LABEL DIRECTIONS.** Technology Development by Monsanto and Design(SM) is a servicemark of Monsanto Technology LLC. All other trademarks are the property of their respective owners. ©2010 Monsanto Company.