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Stalk borers moving into corn

Marlin E. Rice

Iowa State University, merice@iastate.edu

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Stalk borers moving into corn

Abstract

Stalk borers are notorious for killing or stunting corn rows next to fences, grassed waterways, and conservation terraces. Control measures can be taken to prevent this damage, but fields must first be scouted on a timely basis.

Keywords

Entomology

Disciplines

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INTEGRATED CROP MANAGEMENT

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Stalk borers are notorious for killing or stunting corn rows next to fences, grassed waterways, and conservation terraces. Control measures can be taken to prevent this damage, but fields must first be scouted on a timely basis.



Young stalk borer larva showing purple body with white longitudinal lines.

[Enlarge](#) [1]

Stalk borers in grass

Stalk borer larvae have already hatched in Iowa and most of the larvae are now inside bromegrass, other grasses or giant ragweed. However, a few stalk borers may already be in corn because they moved there first instead of to grass. Stalk borers in bromegrass eventually kill the grass, causing "dead heads" (see photo). When the larvae get too large for the grass stems they crawl out in search of larger diameter plants, including corn.

Degree days and migration

Early June is the predicted time for southern Iowa when stalk borers will move out of grass and into corn. Approximately 10 percent of the larvae will move out of the grass by 1,400 degree days (base 41°F) and 50 percent of the larvae will have moved by 1,700 degree days. When 1,300-1,400 degree days have occurred in your area (see map), scout to determine whether the larvae are moving into corn. These dates predict when 10 percent of the larvae will move into corn.

Scouting border rows

Scout corn adjacent to grass terraces, waterways, ditches, and fencerows; and especially those areas where stand loss has occurred in previous years. Stalk borers don't crawl very far from grass, so only the first four rows of corn next to grass would need to be sprayed. Look for small larvae resting inside the whorls or for new leaves with feeding holes. Larvae feeding in the whorl, but that haven't tunneled into the plant, can be killed with an insecticide. The smaller the corn, the more likely it is to be killed by stalk borers. Once corn reaches the 7-leaf stage (V7 stage), stalk borers are unlikely to kill the plants.

Fields with weeds

An exception to the border row problem is when weedy grasses or giant ragweed are growing throughout a cornfield. If these weeds are killed with herbicides, the stalk borers move out of the weeds and into the corn. Stalk borers can destroy a corn stand under these circumstances. To prevent this destruction, an insecticide (table 1) should be tank mixed with the herbicide (if it is a fast burndown herbicide) or the field should be sprayed with the insecticide approximately 7 days after the herbicide (if it is a slow burndown herbicide). Be sure to read the insecticide label before mixing pesticides.

Bt corn

In some of our experiments, we have found that Bt corn suppresses or slows down stalk borer injury. Bt corn does not have the same effect on stalk borers as it does on European corn borers, so don't expect complete control of this pest in Bt corn.

Economic thresholds. Economic thresholds can help in deciding whether to apply an insecticide (table 2). These thresholds are based on the percentage of infested plants, and assume \$13 per acre control costs and 80 percent control with an insecticide. If the number of infested plants in the first four rows of corn (adjacent to grass, terraces, fencerows) exceeds the percentage given for the plant stage, an insecticide application can be economically justified. Young plants have a lower threshold because they are more easily killed than older plants. Scouting is not necessary beyond the V7 developmental stage in corn.

Table 1. Insecticides labeled for stalk borers.

Insecticide	Rate per Acre (Low and High Rates)
Ambush 2E	6.4-12.8 ounces
Asana XL	5.8-9.6 ounces
Baythroid 2	1.6-2.8 ounces
Capture 2EC	2.1-6.4 ounces
Discipline 2EC	2.1-6.4 ounces
Lorsban 4E	1-2 pints
Mustang Max	2.72-4 ounces
Nufos 4E	1-2 pints
Pounce 3.2EC	4-8 ounces
Warrior 1E or T	2.56-3.84 ounces

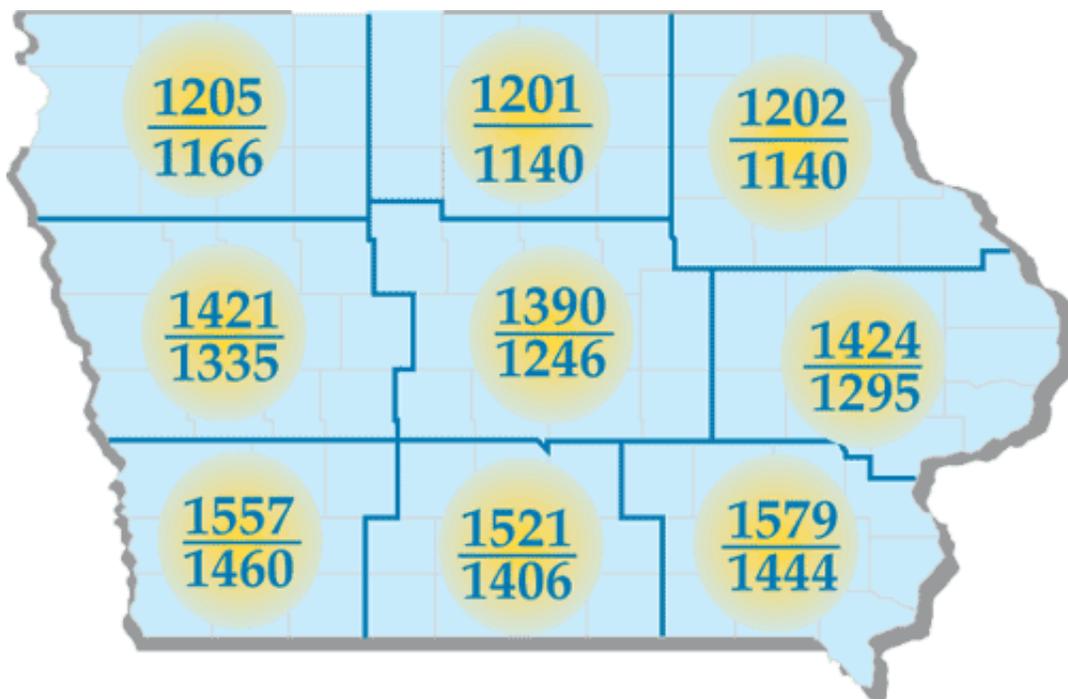
Read and follow all label directions.

Table 2. Commonly available insecticides labeled for stalk borer control in corn.

Stalk borer economic thresholds at \$2/bushel of corn.

Leaf stage	% Infested plants
1	10
2	12
3	15
4	16
5	17
6	34
7	100

Figure 1. Modified Degree Days, January 1, 2004 through June 6, 2004. Minimum 41, Base 41.



Accumulated degree days (upper number)

Normal degree days (lower number)

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[1] <http://www.ent.iastate.edu/imagegal/lepidoptera/stalkborer/001stalkborer.html>

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