

IOWA STATE UNIVERSITY

Extension and Outreach

Integrated Crop Management

Start Scouting for Stalk Borers in Southern Iowa

June 2, 2020

In 2019, numerous field edges were infested with common stalk borer. Tracking degree days is a useful tool to estimate when common stalk borer larvae begin moving into cornfields from their overwintering hosts. Foliar insecticide applications, if needed, are only effective when larvae are migrating and exposed to the insecticide. Start scouting corn for larvae when 1,300-1,400 degree days (base 41°F) have accumulated. Much of Iowa has reached this important benchmark (Figure 1), and therefore scouting for migrating larvae should begin now to make timely treatment decisions.

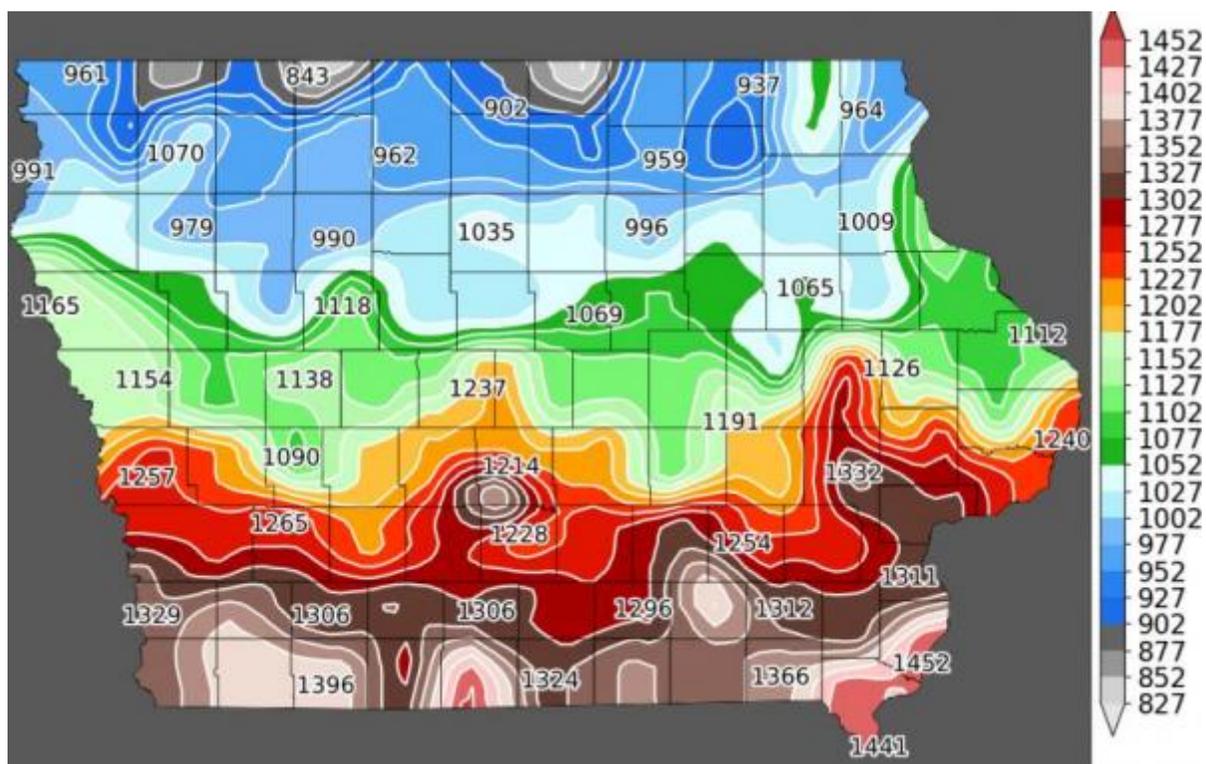


Figure 1. Degree days accumulated (base 41°F) for stalk borer

in Iowa (January 1 – June 2, 2020). *Map courtesy of Iowa Environmental Mesonet, ISU Department of Agronomy.*

Management

Female moths prefer to lay eggs in weedy areas in August and September, so managing weeds (especially brome grass and giant ragweed) earlier in the growing season can help make fields less attractive. Additionally, long-term management requires mowing grassy edges and roadsides around fields so that females will not lay eggs in that area during the fall. Using burndown herbicides before corn planting can force stalk borers to move and infest emerging corn.

Stalk borers tend to re-infest the same fields, so prioritize fields with a history of stalk borers for scouting first with extra attention to the field edges. Finding “dead heads” in weeds is an indicator of stalk borers in the area. The larvae are not highly mobile and typically only move into the first four to six rows of corn. Young corn is particularly vulnerable to severe injury; plants are unlikely to be killed once they reach V7 (Photo 1).



Photo 1. Stalk borer larvae can shred corn leaves and destroy the growing point.

Larvae excrete a considerable amount of frass pellets in the whorl or at the entry hole in the stalk, which is a good indication that larvae are present. Also, look for new leaves with irregular feeding holes that may indicate the presence of larvae. To prevent stand loss and determine if an insecticide treatment is warranted, look for larvae inside the whorls and determine the percentage of plants infested. The use of an economic threshold (Table 1),

first developed by Iowa State University entomologist Larry Pedigo, will help determine justifiable insecticide treatments based on market value and plant stage. Young plants have a lower threshold because they are more easily killed by stalk borer larvae.

Market value		\$3/bu				\$4/bu				\$5/bu			
Yield		150	175	200	225	150	175	200	225	150	175	200	225
leaf stage	1	5.80	4.9	4.30	3.80	4.30	3.70	3.20	2.90	3.46	2.97	2.60	2.31
	2	7.10	6.00	5.30	4.70	5.30	4.50	4.00	3.50	4.23	3.63	3.17	2.82
	3	9.30	8.00	7.00	6.20	7.00	6.00	5.30	4.70	5.60	4.80	4.20	3.73
	4	9.90	8.50	7.40	6.60	7.40	6.40	5.60	5.00	5.95	5.10	4.46	3.97
	5	11.30	9.70	8.50	7.60	8.50	7.30	6.40	5.70	6.80	5.83	5.10	4.54
	6	19.80	17.00	14.90	13.20	14.90	12.80	11.20	9.90	11.90	10.20	8.93	7.94
	7	54.70	46.90	41.10	36.50	41.1	35.20	30.80	27.40	32.84	28.15	24.63	21.89

Table 1. Economic thresholds (expressed as percent of infested plants) for stalk borer in corn, based on market value, expected yield, and leaf stage.

If an insecticide is warranted based on stalk borer densities, the application must be well-timed to reach exposed larvae before they burrow into the stalk. Target applications at peak larval movement, or 1,400-1,700 degree days (base 41°F). Applying insecticides after larvae have entered the stalk is not effective. Since larvae are not highly mobile, consider border treatments. Make sure to read the label and follow directions, especially if tank-mixing with herbicides, for optimal stalk borer control.

For more information on stalk borer biology and management, read a *Journal of Integrated Pest Management* article by Rice and Davis (2010), called "Stalk borer ecology and IPM in corn."

Category: Insects and Mites

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Crop:

Corn

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