

INTEGRATED CROP MANAGEMENT

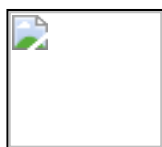
Alfalfa weevils active in Iowa

On April 15, Tom Hillyer from West Liberty in Muscatine County found alfalfa weevils actively feeding. This feeding matches our projected scouting date based on base-48 degree-days in southeast Iowa. Effective management of alfalfa weevil depends on four steps:

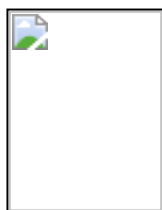
0. timely scouting,
1. correct identification,
2. effective scouting, and
3. determining control strategies.

Timely scouting. Large populations of alfalfa weevil can be very destructive to the first-cutting of alfalfa. Forage yield and quality is reduced by the loss of leaf tissue from feeding activity, starting at stem tips and progressing down the stem. Larvae are small and not readily noticed during early stages. Large populations can cause significant damage before damage becomes obvious to the casual observer. Alfalfa weevil development progresses according to accumulated base-48 degree-days. Larvae begin hatching at approximately 200 degree-days in fields south of I-80, and 250 degree-days north of the highway. The map on page 62 shows accumulated degree days for the nine crop reporting districts in Iowa, and a projected date to begin scouting is provided for each district. South-facing slopes tend to warm up faster and are typically the first areas to check for alfalfa weevil larvae.

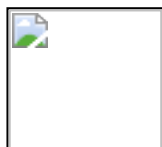
Correct Identification. Alfalfa weevil larvae are pale green with a white stripe down their back. Their heads are black. At hatch, they are about 1/16 inch long and may be light yellow for the first day or two after hatching. Fully grown larvae are 5/16 inch long.



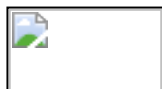
[1] **Alfalfa weevil larvae.**



[2] **Alfalfa weevil larvae.**



[3] **Alfalfa weevil are small; less than 5/16-inch long.**



[4] Clover leaf weevil larva.

Another insect in alfalfa fields, the clover leaf weevil, is often mistaken for the alfalfa weevil. Clover leaf weevils are much larger, have light-brown heads, and often the white stripe is edged with pink. Clover leaf weevils feed predominantly in the lower leaves at night and spend the day hiding at the base of the plant. Clover leaf weevils rarely cause economic yield losses and should not be counted as part of the alfalfa weevil sample.

Effective scouting. You can quickly check for the presence of alfalfa weevils with a sweep net. If you find larvae in the net, collect 30 stems and look carefully for larvae in the upper leaves. The best way to gather the stems so that you avoid losing weevils is to grab the tip of the stem in one hand and break or cut the base of the stem with the other hand. Place the stems in a 5-gallon bucket and beat them against the side. Large larvae will be dislodged easily, but you also must pull apart the youngest leaves to find larvae feeding at the stem tip.

Determining control strategies. If two or more larvae are found per stem, and 40 percent of the stems show leaf feeding, the best option is to cut the hay within 5 days, if possible. Early cutting is a cultural control that avoids the use of insecticides. If the alfalfa will not be mature enough to cut within 5 days, chemical control may be an option. Entomologists at the University of Nebraska have developed economic thresholds for alfalfa weevil. The thresholds are for alfalfa at the early bud stage, when third- and fourth-instars (larvae) do 90 percent of their damage. To use the economic threshold chart, determine the control costs in dollars per acre and then estimate the forage values in dollars per ton. The point where these intersect on the chart gives you the average number of alfalfa weevil larvae per stem needed to justify alfalfa weevil control. For example, if control costs are \$10 per acre and forage value is \$75 per ton, then an average of 3.4 larvae per stem must be present to justify use of an insecticide. If the weevil count is below the economic threshold, resample the field in 3 to 5 days. Several insecticides are labeled for alfalfa weevil. Read and follow all label directions before using any insecticide.

Economic thresholds for alfalfa weevil larvae in early bud stage alfalfa (average number of larvae per stem).

	Forage value (\$ per ton)							
Control costs (\$ per acre)	45	55	65	75	85	95	105	115
7	4.0	3.3	2.8	2.4	2.2	1.9	1.8	1.6
8	4.6	3.6	3.2	2.7	2.4	2.2	2.0	1.8
9	5.2	4.2	3.6	3.1	2.7	2.5	2.2	2.0
10	5.8	4.7	4.0	3.4	3.0	2.7	2.5	2.2
11	6.3	5.2	4.4	3.8	3.4	3.0	2.7	2.5
12	6.9	5.6	4.8	4.2	3.7	3.3	3.0	2.7

13	7.4	6.1	5.2	4.5	3.9	3.5	3.2	2.9
----	-----	-----	-----	-----	-----	-----	-----	-----

Source: University of Nebraska.

Insecticides labeled for alfalfa weevil.

Insecticide	At low and high rates	Harvest interval (days)
Ambush 2E	6.4-12.8 ounces	0-14
Baythroid 2E	1.6-2.8 ounces	7
Furadan 4F	0.5-2 pints	7-28
Lannate LV	3 pints	0
Lorsban 4E	1-2 pints	14-21
Penncap-M	2-3 pints	15
Pounce 3.2 EC	4-8 ounces	0-14
Sevin XLR+	3 pints	7

This article originally appeared on pages 51-53 of the IC-480 (7) -- April 27, 1998 issue.

Source URL:

<http://www.ipm.iastate.edu/ipm/icm//ipm/icm/1998/4-27-1998/aweevil98.html>

Links:

- [1] <http://www.ipm.iastate.edu/ipm/icm//ialfwlarv2.html>
- [2] <http://www.ipm.iastate.edu/ipm/icm//ialfwlarv1.html>
- [3] <http://www.ipm.iastate.edu/ipm/icm//iawwpenny.html>
- [4] <http://www.ipm.iastate.edu/ipm/icm//icloverw.html>

IOWA STATE UNIVERSITY
University Extension