



Mesonet Agweather Alfalfa Weevil Advisor Description

The Oklahoma Alfalfa Weevil Advisor is a tool that can help growers determine the need and proper timing for insecticide applications to avoid serious weevil damage.

After 150-degree day heat units have accumulated since January 1, it is time to begin scouting alfalfa fields. To assess alfalfa weevil activity, collect a 30-stem sample, from 30 evenly-spaced spots across the dry interior portions of the field. Place the collected stems in a 2-3 gallon container and beat vigorously against the inside of the container for 10-20 seconds. Count and record the number of larvae that fall out.

To determine alfalfa height, select 10 stems and record their average length to the nearest inch.

Consult the Spraying Recommendation Table to determine whether spraying is necessary, or when the fields should be scouted again.

The Oklahoma Alfalfa Weevil Advisor is based on three factors:

1. The growth stage of the alfalfa weevil (modeled via degree days),
2. The growth stage of the alfalfa plant (obtained through scouting), and
3. The population levels of weevil larvae (also obtained through scouting).

Insect development can be predicted based on degree-day heat units. Each insect species has lower and upper temperature thresholds. These are the minimum and maximum temperatures required for growth and development. For the alfalfa weevil, the minimum temperature is 48°F. Degree-day heat units are calculated for each day and the daily units added together to give degree-day heat unit accumulation from a "Planting Date." This is done by taking the average temperature for a single day and subtracting the 48°F minimum temperature. For example, if your average day's temperature is 58°F, then $58^{\circ}\text{F} - 48^{\circ}\text{F} = 10$ degree-day heat units for that day.

The Alfalfa Weevil Advisor logs the degree-day heat units accumulated since January 1 above a 48°F base.

Note that the advisor calculates two sets of variables that relate to the temperature thresholds associated with mortality of alfalfa weevil eggs (10°F) and larvae (20°F). Beginning in December, the advisor shows the number of hours since December 1 that temperatures were at or below 10°F, the last date on which such temperatures occurred, and the number of hours of such temperatures occurring on that date. Beginning in February, the advisor also shows the number of hours since February 1 that temperatures were at or below 20°F, the last date on which such temperatures occurred, and the number of hours of such temperatures occurring on that date.

For additional information on controlling alfalfa weevil refer to:

- Alfalfa Weevil and Its Management in Oklahoma, OSU Extension Fact Sheet PSS-2097
- Scouting for the Alfalfa Weevil in Oklahoma, OSU Extension publication CR-7177

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