

# ALFALFA WEEVIL FIELD SAMPLING PROGRAM

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The use of degree day accumulations, average alfalfa stem length, and numbers of weevil larvae on 30 stems collected randomly in the field allows accurate management decisions to be made on this important first-cutting pest. Timely field sampling will help you to detect potentially damaging weevil numbers in time to take some sort of control action, an insecticide application or early harvest. Using degree day information to schedule field checks will save you time. Alfalfa weevil degree day information, a vital part of this program, is available from your county extension office or from the [University of Kentucky College of Agriculture Ag Weather Center](http://www.wagwx.ca.uky.edu/) home page-  
<http://www.wagwx.ca.uky.edu/>

## When to Sample

Damage will appear on the leaves, growing tips, buds and new shoots of the alfalfa plant. Leaves become skeletonized and the resulting bleached out plant has an appearance resembling frost damage. Field samples for alfalfa weevil should be made at least every 7 days, or more frequently if recommended by the recommendation tables.

Select the appropriate management table based on the degree day accumulation for your area. Fields should be first examined when 190 day degrees (base temperature 48 degrees F) have accumulated. If alfalfa weevil larval feeding damage is observed, take stem samples using the equipment and procedures listed below to determine the magnitude of the alfalfa weevil population and to decide what management strategy is needed.

## Equipment needed

- Yardstick or other measuring device
- a white or yellow plastic bucket
- Alfalfa Weevil Pest Management Recommendation Tables
- pencil and paper.

## Sampling Procedure

1. Walk into the field at least 20 paces before beginning to sample.
2. Collect 30 complete stems while moving through the field in a "U" or "Z" shaped pattern and place each stem, top first, into the bucket. After collecting 30 stems return to the edge of the field and lay them on a clean, flat surface, such as the hood of a truck.
3. Select 4 or 5 stems at a time and beat them vigorously against the inside of the bucket to dislodge alfalfa weevil larvae. Count all larvae, including any that may have fallen onto the surface where the stems were resting and record this number.
4. Randomly select and measure 10 of the 30 stems. Measure each stem to the nearest inch. Calculate the average stem height.
5. Turn to the Alfalfa Weevil Pest Management Recommendation Table that corresponds to the current degree day range. Use the number of larvae per 30 stems and average alfalfa height in inches to determine the management recommendations for the situation in the field you are sampling.

Note the growth stage of each stem that you measured; pre-bud if there are no buds; bud if buds have formed and flower if any flowers present. Calculate and record the percentage of the plants in the bud or flower stage. This information is useful in determining when to harvest the crop.

## How to Use the Pest Management Tables

These tables can help you to make accurate pest management decisions. The table to use depends upon the number of degree days that have accumulated in your area at the time the field check is made.

**Example:** Suppose that first sample is taken when 200 degree days have accumulated, the average alfalfa height is 4" and a total of 24 larvae have been found in the 30 stem sample. By checking the 190-225 Degree Day table we find that the management recommendation for this situation is: "Resample in 2 days if the larval number is not exceeded but is above 15". You will need to sample this field again in two days. At that time you will use the table

with the degree day accumulation as of that day. Be sure to read the footnotes that are found on the bottom of the tables.

### Alfalfa Weevil Pest Management Recommendation Tables

<b>190 to 225 Degree Days</b>				
Number of larvae per 30 stems	27	67	100	130
Plant height(inches)	2	4	6	8
<ul style="list-style-type: none"> <li>• Apply a long residual insecticide if the larval number you find is greater than the number in the table above for the average height of alfalfa sampled. Spraying now protects alfalfa weevil parasites emerging later.</li> <li>• Sample again in 2 days if larval number is above 15 but fewer than the table value -OR- sample again in 7 days if you find fewer than 15 larvae in your sample.</li> </ul>				

<b>226 to 275 Degree Days</b>				
Number of larvae per 30 stems	15	19	20	
Plant height (inches)	2	4	6 or taller	
<ul style="list-style-type: none"> <li>• Apply a long residual insecticide if the larval number you find is greater than the number in the table above for the height of alfalfa sampled.</li> <li>• Sample again in 7 days if you find fewer than the number of larvae for the appropriate alfalfa height.</li> </ul>				

<b>276 to 325 Degree Days</b>					
Number of larvae per 30 stems	37	60	83	105	135
Plant height (inches)	4	6	8	10	12 or taller
<ul style="list-style-type: none"> <li>• Apply a medium residual insecticide if the larval number you find is greater than the number in the table above for the height of alfalfa sampled.</li> <li>• Sample again in 7 days if you find fewer than the number of larvae for the appropriate alfalfa height.</li> </ul>					

<b>326 to 375 Degree Days</b>			
Number of larvae per 30 stems	82	105	
Plant height (inches)	8	10 or taller	
<ul style="list-style-type: none"> <li>• Apply a short residual insecticide if the larval number you find is greater than the number in the table above for the height of alfalfa sampled.</li> <li>• Sample again in 2 days if alfalfa is less than 16 inches and the number of larvae found is more than 20 but fewer than 82 per 30 stems -OR- sample again in 7 days if alfalfa is taller than 16 inches and the number of larvae found is fewer than 20.</li> </ul>			

<b>376 to 525 Degree Days</b>				
Number of larvae per 30 stems	52	64	72	80
Plant height(inches)	12	14	16	18 or taller
<ul style="list-style-type: none"> <li>• Apply a short residual insecticide if the number of larvae is exceeded for the size alfalfa sampled or harvest now if the alfalfa is in the 30% bud stage or greater.</li> <li>• Sample again in 2 days if the number of larvae is fewer than but within 20 of the number justifying a treatment.</li> </ul>				

## Evaluating Post-harvest Alfalfa Weevil Larval and Adult Damage

Routine stubble sprays are not justified. If early harvest was used as a weevil management tool, there occasionally may be sufficient larvae or newly-emerged adults present to justify an insecticide application. Watch such fields carefully for the normal green-up that indicates active regrowth. Surviving larvae may feed on developing leaves and new adults can cause "notch-like" feeding holes on leaves giving them a feathery appearance.

The table below may be used to evaluate larval numbers and plant height to determine whether or not control is necessary. Treatment may be justified if adult weevils are found feeding on 50% or more of the crowns and regrowth is prevented for 3 to 6 days. Use low rates if an insecticide application is necessary.

<b>ASSESSING ALFALFA WEEVIL LARVAE ON FIRST CUTTING REGROWTH (5 to 7 days after harvest)</b>				
Number of larvae per 30 stems*	20	33	47	60
Number of larvae per 30 stems**	17-20	17-32	23-46	23-59
Plant height (inches)	2	4	6	8 or taller
<ul style="list-style-type: none"> <li>*Spray with a short residual insecticide if the number of larvae/30 stems exceeds the number in the table above for the appropriate alfalfa height.</li> <li>**Sample again in 2 days if the number of larvae per 30 stems is in this range for the appropriate alfalfa height. If numbers are below this level, no treatment should be necessary.</li> </ul>				

**CAUTION!** Pesticide recommendations in this publication are registered for use in Kentucky, USA **ONLY!** The use of some products may not be legal in your state or country. Please check with your local county agent or regulatory official before using any pesticide mentioned in this publication.

Of course, **ALWAYS READ AND FOLLOW LABEL DIRECTIONS FOR SAFE USE OF ANY PESTICIDE!**

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