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Alfalfa Weevil Life Cycle and Impact

SITUATION

Alfalfa weevils typically hatch in early spring from the eggs that they overwinter in and then move into a larva stage. They transform into the larva stage after approximately 200 – 250 Growing Degree Units (GDU), typically around mid-May, depending on geography. It is during this timeframe that the damage is typically most severe. Even though they live the entire summer as beetles, as the days get hotter, the weevils become dormant. This is why the most damage is caused by the larvae and pupae weevils instead of the adult weevils. Alfalfa weevils can completely defoliate a field if infestation is high enough. Typically, the damaged leaf will appear to be a skeleton because the weevils will eat the leaf tissue but leave the veins intact.

FACTORS TO CONSIDER

Though alfalfa weevils can cause great damage in a field, the extent of damage is based upon:

- Time of year that the alfalfa weevils appear.
- Cutting cycle of your particular crop.
- What percentage defoliation occurs.
- Quality of the specific alfalfa crop.

ACTION PLAN

1. **Start scouting when 250 GDU have accumulated.** It takes about 200 GDU for eggs to hatch and larvae to become active. When scouting, you should take note of three things:
    - Progress of the alfalfa plant (pre-bud, bud, flowering)
    - Length of Stems
    - Percentage of leaf tip feeding that's occurring

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The following is a ***Guide to Treatment*** plan from Purdue University Extension.

Heat Units	% Tip Feeding	Advisory
250		Begin sampling
300	0 - 40 (30)*	Re-evaluate in 7 to 10 days using the appropriate heat units or treat immediately with a residual insecticide if 3 or more larvae are noted per stem and % tip feeding is above 50%.
400	60 (50)**	Treat immediately with a residual insecticide.
500	75	Treat immediately.
600	75+	If cutting is delayed more than 5 days, treat immediately.
750		If harvesting shortly, return to the field in 4 - 5 days after cutting and spray if: 1. There is no regrowth and weevil larvae are present. 2. Feeding damage is apparent on 50% of the stubble and weevil larvae are present.

*Note if larvae are still present, actively feeding and/or diseased.

**Shorter than normal growth at beginning of season.

2. Treatment. In most cases, insecticide application is the preferred method of treatment. However, if the threshold is met within five days of projected cutting, there may not be a treatment needed. Cutting the alfalfa is also an effective control method, but scouting should continue until the following cutting to ensure control was achieved and re-infestation didn't occur.

SUMMARY

Alfalfa weevil damage typically occurs during late spring (around the first cutting of alfalfa) when they are in the larvae to early pupae stage. The severity of the damage is dramatically influenced by the weather. Cool, wet conditions can cause the weevils to become diseased and either die or dramatically decrease their damage. Although alfalfa weevils can be devastating, they are relatively easy to scout for and treat if infestation does occur.

RESOURCES

https://extension.entm.purdue.edu/fieldcropsipm/insects/alfalfa-weevil.php