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Alfalfa Weevils Active Throughout Iowa

Erin W. Hodgson

Iowa State University, ewh@iastate.edu

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Alfalfa Weevils Active Throughout Iowa

Abstract

Adult alfalfa weevils begin moving as soon as temperatures exceed 48°F and begin laying eggs in alfalfa. Alfalfa weevil eggs develop based on temperature, or accumulating degree days, and hatching can start around 200-300 degree days. Start scouting alfalfa fields south of Interstate 80 at 200 degree days and fields north of Interstate 80 at 250 degree days. Based on accumulated temperatures since January, weevils could be active throughout Iowa (Fig. 1).

Keywords

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Alfalfa Weevils Active Throughout Iowa

By Erin Hodgson, Department of Entomology

Adult alfalfa weevils begin moving as soon as temperatures exceed 48°F and begin laying eggs in alfalfa. Alfalfa weevil eggs develop based on temperature, or accumulating degree days, and hatching can start around 200-300 degree days. Start scouting alfalfa fields south of Interstate 80 at 200 degree days and fields north of Interstate 80 at 250 degree days. Based on accumulated temperatures since January, weevils could be active throughout Iowa (Fig. 1).

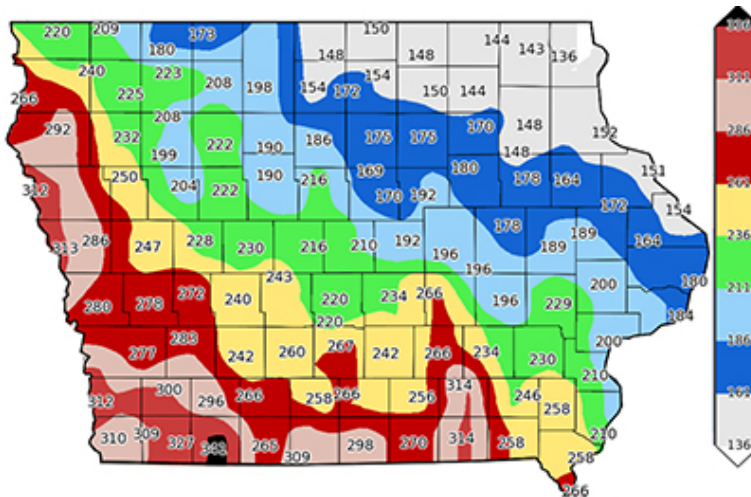


Figure 1. Accumulated growing degree days (base 48°F) in Iowa from January 1 – April 14, 2015. Map courtesy of Iowa Environmental Mesonet, ISU Department of Agronomy.

This dynamic degree day map is updated daily. To more accurately time scouting efforts in April and May, use this [website](#) to generate up-to-date information for your area. Click on the “View Degree Day Map” button in the left corner of the page and then set the parameters for degree days to create a new map. Make sure to set the start date to January 1 of the current year and the end date to today; set base temperature to 48°F and ceiling temperature to 86°F.

Biology. Alfalfa weevil is an important defoliating pest in alfalfa. Heavy infestations can reduce tonnage and forage quality. Adults feed on plants, but typically the larvae cause the majority of plant injury. Female alfalfa weevils can lay 800-4,000 eggs in a lifetime and insert 5-20 at a time into alfalfa stems. Newly hatched larvae can be found feeding on terminal leaves, leaving newly expanded leaves skeletonized. Gradually maturing larvae (Photo 1) move down the plant and begin feeding between leaf veins. Peak larval activity occurs around 575 degree days. Often silken pupal cases are attached to leaves in the lower canopy or in leaf litter. The time it takes to reach the adult stage is dependent on temperature, but can take about eight weeks. Adults (Photo 2) eat along the leaf margin, leaving irregular notches. A heavily infested field will look frosted or silver (Photo 3).



Photo 1. Alfalfa weevil larvae have a dark head and pale green body with a white stripe down the back. Fully-grown larvae are about 5/16 inches long. Photo by Clemson Cooperative Extension Slide Series, www.ipmimages.org.



Photo 2. Alfalfa weevil adults have an elongated snout and elbowed antennae. Their wings and body are mottled or brown in color. Photo by Clemson University, ipmimages.org.



Photo 3. Heavily-defoliated alfalfa fields appear frosted from a distance. Photo by Whitney Cranshaw, Colorado State University, ipmimages.org.

Management. After reaching benchmark degree days (200 in southern Iowa and 250 in northern Iowa), use a sweep net to sample for adults and larvae. South-facing slopes warm up faster and may be a place to start sampling. After larvae are first collected in sweep nets, collect six alfalfa stems from 5 locations throughout the field. Take each stem and vigorously shake into a bucket to dislodge larvae from the plant. Small larvae can be difficult to separate from the plant and therefore careful plant inspection is also needed. Average the number of larvae per 30 stems and plant height to determine if the economic threshold is approaching (Table 1). Remember, cutting alfalfa is an effective management tool for alfalfa weevil larvae, and an insecticide application may be avoided if harvesting within a few days of reaching the economic threshold. For more information on how to interpret the table, [click here](#).

		Plants 12-18 inches AND Control costs (\$/acre)				Plants 18-24 inches AND Control costs (\$/acre)				Plants 24-30 inches AND Control costs (\$/acre)			
		\$12	\$14	\$16	\$20	\$12	\$14	\$16	\$20	\$12	\$14	\$16	\$20
		Hay value (\$/ton)	\$120	68	79	91	114	75	87	100	124	78	91
\$140	59		68	77	99	64	75	86	107	67	78	90	112
\$160	51		60	68	86	56	65	75	93	58	68	79	98
\$180	45		52	60	77	50	58	67	84	52	61	70	87
\$200	41		48	54	69	45	52	60	76	47	55	63	79
\$220	37		43	49	63	41	47	55	69	42	50	57	72
\$240	34		40	45	58	37	43	50	63	39	46	53	66
\$260	31		37	42	54	35	40	46	59	36	43	49	61
\$280	29		34	39	50	32	37	43	55	33	40	45	56
\$300	27		32	36	47	30	35	40	51	31	37	42	53
\$320	26		30	34	44	28	33	38	48	29	35	40	49
\$341	24		28	32	41	26	31	36	45	27	33	37	46
\$360	23		26	30	39	25	29	34	43	26	31	35	44
\$380	22	25	28	37	24	27	32	41	24	29	33	42	
\$400	20	24	27	35	22	26	30	39	23	28	32	39	

Table 1. [Economic threshold of alfalfa weevil](#), based on the average number of larvae in a 30-stem sample (Originally published by John Tooker, Penn State Extension.

Erin Hodgson is an associate professor of entomology with extension and research responsibilities; contact her at ewh@iastate.edu or by calling 515-294-2847.

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