



## **PLANT DISEASE AND INSECT ADVISORY**

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### **How will Recent Weather Conditions Impact Alfalfa Weevil Egg Populations in 2007????**

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Alfalfa weevil egg populations for January are located in the attached table. In addition, degree days through January 17, 2007 are presented in the last column. For the purposes of comparison, January egg populations and viability of those eggs for the previous two years are also depicted in the table. Viability measurements for this year's samples are still being processed; however, only one location (Payne County) had sufficient egg numbers for testing. Extremely low numbers of eggs were recovered in all counties. In 2007, degree days through January 17 are averaging 27.4 across the twelve sample sites. This represents less than one-third of the degree days accumulated last year at this time and egg numbers are down considerably from the previous three years.

In an attempt to decipher what may have happened to alfalfa weevil populations over the last couple of years, we looked at the percentage of normal precipitation in each of the twelve counties sampled this year. From January 2006 through January 2007, 10 of the twelve counties experienced 80% of normal precipitation. Washita and Tulsa counties had 90% of normal precipitation and Alfalfa County yielded only 60% of normal precipitation. While those deficits may not account for the extremely low numbers of alfalfa weevil eggs recovered this year, if you look at the added impact from fall 2005 it sheds a greater light on the situation. In fall of 2005, only three counties experienced 80% of normal precipitation (Kingfisher, Washita and Alfalfa) during that period. In contrast, seven counties had 60% of normal precipitation and Grady and Pottawatomie Counties experienced only 40% of normal. The combination of persistent drought with extremely high temperatures during the summer months of 2006, have likely resulted in increased mortality of summer diapausing adult weevils. Since egg populations were dramatically lower in southern counties than northern ones, these higher temperatures in southern counties helps explain the differences in spite of precipitation. In addition, those counties located in the north that had lower egg populations this year, also had greater deficits of precipitation. Therefore, it appears the combination of prolonged drought with increased temperatures during the summer months have impacted weevil populations appreciably.

Remember, as far as alfalfa weevil populations are concerned, 150 degree-days represents the level that serves as an indicator for growers and consultants to begin scouting for larvae. So far this year, very few early (suicidal) emerging larvae were present in our samples. Any of these

early emerging larvae will likely be killed by current and ensuing cold weather events. Continued and persistent cold with ice and/or rainfall will further enhance mortality. In contrast, blankets of snow may provide insulation for both weevils and aphids. This last spell of weather, with ice and freezing rain did not provide protection to insects exposed to these conditions and heavy insect casualties are likely. Adult activity of alfalfa weevil generally peaks in January and February of each year; however, if cold conditions persist we may continue to see egg populations stay below normal. If present populations hold through the February sampling period, and oviposition does not increase between now and then due to warm weather events, we could experience an extremely light and/or later infestation of alfalfa weevil than we experienced last season. The nice part about that is populations were relatively light last year and aphids were a greater concern. Cold, wet weather conditions will help keep aphid populations in check.

During sampling, we often keep our eye out for any additional insect activity, such as army cutworm or aphids. Low numbers of spotted alfalfa aphids were observed in some fields; however, cold, wet weather will likely have a detrimental effect on these insects. We will keep you posted in a later release about the egg viabilities for the January 2006 samples and for those that we hope to take in February. Currently, the outlook for this coming season is optimistic for low and late populations.

County	January 2007	January 2006	January 2006 % Viable*	January 2005	January 2005 % Viable*	January 2004	January 2004 % Viable*	Degree Days (2007)
Grady	.8	56.0	---	43.6	---	206	34	26
Kay	19.6	58.8	---	124	84	94.8	49	22
Kingfisher	48.0	82.0	---	162	94	207.2	75	26
Payne	56.4	189.6	45	338.8	90	241.2	79	31
Pottawatomie	14.8	134.8	41	218	82	118.4	79	25
Tillman	2.0	40.8	---	54	---	26.8	---	31
Washita	3.6	130.0	45	57.2	93	486	69	26
Woods	22.0	208.8	58	88	85	496	72	28
Garvin	0.0	111.6	76	113.2	87	38	---	33
Tulsa	40.0	30.4	---	105.6	86	115.2	90	25
Stephens	5.6							30
Alfalfa	31.6							26

\*\* Means            20.3            104.3                            130.4                            203                            27.4

\* No viability in a specific county means that egg numbers recovered was insufficient to conduct an assessment.

\*\* Means, within each year, represent all areas sampled, not simply those depicted.

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