

# PLANT DISEASE AND INSECT ADVISORY



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## Should You Consider Using an Insecticide Seed Treatment for Wheat?

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I have shared results of our seed treatment evaluations (Gaucho, Cruiser) in wheat and sorghum at several grower meetings over the past few years, and I am sometimes asked my opinion as to whether a producer “should use an insecticide seed treatment?” Their biggest concern is “getting their moneys worth” in yield protection to cover the added expense of using these products. My answer to that question is the always frustrating “it depends” because seed treatments are not for everyone. The research results from my evaluations indicate that a seed treatment can “pay for itself” under some circumstances, but will probably not in others. I believe that by answering the following questions, a producer can more easily make a correct decision as to whether a seed treatment would be a cost effective choice.

Q 1: Is your wheat field under no-till or conservation tillage?

Yes

No (Go to Question 4)

Q 2: Is your wheat field in a continuous wheat rotation?

Yes

No (Go to Question 4)

Q 3: Will you plant a HF-susceptible varieties such as Jagger, Jagalene or Overly?

Yes

No



If you answered yes to all of these questions, you should consider using an insecticide seed treatment. In fact, you should consider a seed treatment even if your field is located next to a field grown under these conditions. Why? Because of the threat from Hessian fly. When I came to OSU in 1997, I was surprised to discover that Hessian fly was not a problem here, since the predominant rotation was continuous wheat and it was planted very early. The only reason that I could come up with for the lack of Hessian fly problems was

that nearly all of the fields were clean tilled several weeks to a month before planting, which probably destroyed any over summering pupa. During the past few years, there has been a renewed interest in conservation tillage among Oklahoma producers, especially because increased fuel prices provide a strong incentive to try and reduce “trips across the field”. Unfortunately, Oklahoma producers have limited choices of winter crops to rotate with their

wheat, so a common rotation is continuous wheat. In the last two years, I have seen more and more wheat fields that were damaged by Hessian fly. The factors common among those fields are that the fields were in continuous wheat rotations, planted early with a Hessian fly – susceptible variety, and produced under no-till or conservation tillage.

Last fall, I collected wheat plants from several fields in north-central Oklahoma that illustrate the importance of some management strategies that can be used for Hessian fly.

Table 1: Hessian fly infestation levels in several wheat fields in Kay County Oklahoma, 2005.

Field Number	Tillage	Crop Rotation	Plant Date*	Seed Treatment**	Plants Infested	Tillers Infested
1	NoTill	Continuous Wheat	Early	No	61%	41%
2	No-Till	Continuous Wheat	Early	Yes	0%	0%
3	No-Till	Continuous Wheat	Early	No	89%	40%
4	Clean Till	Continuous Wheat	Early	No	22%	5%
5	NT Close***	Corn/Wheat	Early	No	94%	51%
5	NT Far	Corn/Wheat	Early	No	33%	10%
6	No Till	Corn/Wheat	Late	No	0%	0%

\* Early = planted in early to mid September, Late = planted in mid October

\*\* Seed treated with Gaucho or Cruiser

\*\*\* NT Close = Sample was taken next to a field of wheat stubble from a neighboring field, NT Far = Sample was collected ½ mile from the neighboring wheat stubble

Here is another set of questions to consider if you are using clean tillage methods.

**Q 4:** When do you plant your wheat?

August-September  
October

1 point  
0 points

**Q 5:** Will you be harvesting the wheat for grain (even if it is being grazed)?

Yes  
No

1 point  
0 points



Discussion: If your answers to questions 4 and 5 add up to 2 points, you could consider a seed treatment. In essence, wheat planted early that will be harvested for grain is more likely to benefit from a seed treatment. Why? Because aphids, especially bird cherry oat aphids are more likely to infest wheat that is planted early. Dr. Kris Giles and I evaluated seed treatments in Lahoma and Perkins for two years in which we looked at aphid control and resulting yields. In addition,

Dr. Bob Hunger has looked at seed treatments for control of aphids and barley yellow dwarf virus. The results of these studies suggest that a producer is most likely to benefit from using a seed treatment when: (a) a low rate is used, (b) there is a need to protect grain yield, and (c) there is a greater likelihood that aphids will infest the wheat. Aphid infestations are more likely to occur if a producer is planting wheat in early to mid-September. Late planting (early to mid-October) will reduce the threat of an aphid infestation. So, wheat that is planted in early to mid-September and will be harvested for grain it is more vulnerable to yield loss caused by aphids, regardless if it is going to be grazed. The following table illustrates the results of our work at Lahoma and Perkins:

Tables 2a-b. Average Return over Untreated Control from using Gaucho for Aphid Control, 1997-1999

2A: Insecticide Rates Combined

Date of Planting	Average Return \$/Acre
Early	- \$6.49
Middle	+ \$9.21
Late	- \$1.99

2B: Planting Dates Combined

Rate of Application (oz/acre)	Average Return \$/Acre
0.75 oz	+ \$1.58
1.50 oz	\$0.00
3.00 oz	- \$6.27

These data show that wheat planted in mid-September are more likely to benefit from aphid protection provided by a seed treatment, and that using a lower rate will provide more consistent returns.

A final reminder: if you are targeting Hessian fly, make sure that you use correct rate that is labeled specifically for Hessian fly. Insecticide rates are higher for Hessian fly control than for aphid control. There are other things to consider when making a decision to use seed treatments (such as insecticide/fungicide combinations to control bunts and smuts). For more information related to the use of seed treatments to control bunts and smuts of wheat, see Vol. 5, No.17 of the Plant Disease & Insect Advisory at <http://entopl.okstate.edu/Pddl/advisory.htm>

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