WHEAT PRODUCTION NEWSLETTER

August 30, 2006
Volume 3, Issue 2

OKLAHOMA COOPERATIVE EXTENSION SERVICE

Oklahoma State University Small Grains Extension
www.wheat.okstate.edu

Insecticide seed treatment?

By Tom A. Royer

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 money's 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 questions to the right, a producer can more easily make a correct decision as to whether a seed treatment would be a cost effective choice.

Even coverage of the seed, as shown on the wheat seed to the right, is essential for obtaining full benefit from a wheat seed treatment

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

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

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

If you answered **NO** to any of these questions skip to Question #4 on the next page. However, 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".

cont.. on page 2

cont.. from page 1

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. A summary of my findings are shown in Table 1.

Table1: 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	1 point
October	0 points

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

Yes	1 point
No	0 points

cont.. on page 3

cont.. from page 2

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. Tables 2A&B illustrate the results of our work at Lahoma and Perkins.

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.

Tables 2a-b. Average return above nontreated control from using Gaucho for Aphid Control at Lahoma and Perkins, OK from 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

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 "The Plant Disease & Insect Advisory," Vol. 5, No.17, July 31, 2006 at website: http://entoplp.okstate.edu/Pddl/advisory.htm

PVP Law Q & A

By Jeff Edwards

Q What is the Plant Variety Protection Act (PVPA)?

A Legislation enacted in 1970 and amended in 1994 to promote the development of new varieties by allowing the variety owner to determine who may sell seed of the variety. Farmers may save seed for their own planting needs but are prohibited from selling any "farmer saved seed" without the permission of the variety owner. The Act provides protection of the variety for 20 years. All seed sales must comply with state seed laws. Applies to all varieties protected prior to April 4, 1995.

Q What does 'Title V' mean?

A An option for protected varieties that allows for the sale of the seed by variety name only as a class of certified seed. Non-certified sales are prohibited. Seed may be called "Certified" only after meeting all requirements and standards of an Official Seed Certifying Agency.

In other words, if this option is selected by the variety owner, it means the variety must be sold as a class of certified seed. Title V of the Federal Seed Act makes sales of non-certified seed of these varieties illegal.

Q What are utility patents?

A A means of protection for certain varieties, especially those developed through genetic engineering or biotechnology. Farmers may not save, clean/condition, or sell any seed protected under a utility patent. An example of this would be the Clearfield wheat varieties or Roundup Ready Soybean.

cont.. on page 5

Q What are the benefits of Plant Variety Protection for Farmers?

A The Plant Variety Protection Act was designed to promote the development of new plant varieties. Allowing plant breeders to determine who can sell seed of the varieties developed gives them the ability to insure that the farmers are getting a particular variety. It also allows the breeder to recoup some of the development costs usually through royalties and re-invests in future variety development programs.

Q How important are new varieties to Oklahoma's agricultural economy?

A Researchers estimate that more than 50% of increased performance in agricultural crops is due to improved genetics. Since 1950, the number of varieties available of Oklahoma's major crops has more than tripled!! Besides increased yield, there have been improvements in herbicide, disease and pest resistance, and varieties that are adapted to various soil types and production practices.

Q How can I tell if the seed I buy is protected under the 1970 or 1994 PVP?

A The label on the bag of seed will clearly identify if the seed is protected and distinguish which Act it is protected under.

Q Can a farmer save seed of a protected variety?

A A farmer can save seed protected under both the 1970 and 1994 PVPA for planting on his own holdings (land owned, leased or rented).

Q Can a farmer sell seed of a protected variety?

A Under the 1970 PVPA - Yes, to a neighbor but only the amount needed to plant his own holdings. Under the 1994 PVPA - No, unless permission is given by the variety owner.

Q Can I condition/clean seed for a farmer?

A Yes, but any actions taken as a step in marketing farmer-saved seed are infringements of the rights of the owner. This can include cleaning excess seed or delivering seed to a third party. Under the 1994 PVPA, cleaning or storing farmer saved seed for sale are infringements. Anyone who cleans or conditions farmer saved seed should keep written documentation from the farmer stating that the seed being cleaned is not in violation of PVP laws or Patents.

Q In an effort to get around the law, can a farmer advertise farmer saved seed of a protected variety as "variety not stated"?

A No, selling a protected variety as VNS is a violation of the law.

Q If a farmer harvests and stores his seed at the local elevator then at planting time asks the elevator to plant his acres with his stored seed, is this seed considered farmer saved seed under PVP?

A Unless the seed was kept in a separate bin, then it is considered commingled and assurance as to variety would be unknown. The acres would be considered as illegally planted.

Dr. Jeff Edwards
Small Grains Extension Specialist, Oklahoma State University

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, James Trapp, Director of Oklahoma Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at no cost to the taxpayer.

Subscription Information

The *Wheat Production Newsletter* is published in electronic format on an as needed basis throughout the year. To receive an electronic copy in pdf format, send an email with **subscribe** as the subject line to jeff.edwards@okstate.edu

Don't forget to check out the World of Wheat podcast at:

http://quicksilver.okstate.edu/wheat

Want more information?

Visit our web site at:

www.wheat.okstate.edu