

WHEAT PRODUCTION NEWSLETTER



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Destroy Volunteer Wheat and Reduce Threat of Other Wheat Pests

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The unharvested wheat from this past growing season left a huge seed bank of potential "volunteer" wheat in many fields that could germinate every time we receive significant rain. This volunteer wheat acts like a nursery for wheat pests such as the Hessian fly, wheat curl mite and cereal aphids. Damage from these pests can be reduced by eliminating their "home" at least two weeks before the wheat crop is seeded.

Hessian fly over-summers on wheat stubble, and will increase in number on volunteer wheat when it becomes available for food. Adult flies "hatch" from their pupal cases when we get a triggering rainfall event of at least a half inch. Hessian fly development depends on temperature, but can be completed in about 21 days in warm weather. Adults will lay eggs which will hatch and develop on volunteer wheat. Those flies can complete development and infest other wheat plants that are available later in the growing season. Wheat seed that is treated with Gaucho or Cruiser will help control Hessian fly infestations in the wheat crop, but seed treatments are not 100% effective in every climatic condition, so any practice, such as destruction of volunteer wheat will reduce fly numbers and help achieve better control with an insecticide seed treatment.

Wheat curl mite is a vector of wheat streak mosaic virus. They can build on wheat plants in large numbers, and move with prevailing winds into a newly emerged wheat field. Wheat streak mosaic virus can cause heavy yield loss, especially when young plants are infected in the fall. There is no chemical control for wheat curl mite, so the primary practice of controlling volunteer wheat is the most effective way to reduce wheat curl mite, and thus, wheat streak mosaic virus.



Control volunteer wheat now to reduce the likelihood you will find Hessian fly flaxseed (picture above) in your wheat crop next spring



When left unchecked, volunteer wheat (field on the right) can serve as a host for the wheat curl mite. If neighboring fields, such as the wheat field in the left side of the picture, are infested then total crop loss may occur. This field near Balko was abandoned due to wheat streak mosaic virus in 2007.

Cereal aphids that attack wheat live on other plants during the summer until wheat is again present. Besides being a direct pest of wheat, the bird cherry oat aphid and the greenbug are vectors of barley yellow dwarf virus. Volunteer wheat can serve as a source of aphids and disease, which can be moved over into a wheat field later in the growing season.

Volunteer wheat can be controlled with tillage, or a nonselective burndown herbicide such as glyphosate. In either case, volunteer wheat must be killed at least two weeks before the crop is planted. Tillage will kill volunteer wheat almost immediately. An herbicide application will likely take a week to ten days to completely kill volunteer wheat, so the actual timing of the herbicide application needs to be at least three weeks prior to planting. Whatever the control mechanism, it is very important to kill volunteer wheat now to ensure a healthy wheat crop later in the season.



Controlling volunteer wheat now can also help reduce aphid numbers and the incidence and severity of barley yellow dwarf virus (BYDV). BYDV is characterized by stunted growth and purple leaves as shown in the picture above

Tough decisions regarding seed

By: Jeff Edwards, Small Grains Extension

Many of the calls I have received over the past few weeks are in regards to the extremely tight supply of seed wheat. Growers are scrambling trying to find seed and it appears that adjustments in seeding rates, varieties, and planting date will be in order this fall. To help with these decisions I will go through some of the frequently asked questions regarding seed wheat.

Q: What about variety x, y, or z from Nebraska, South Dakota, etc.

A: I would only advise this as an absolute last resort. If a variety has been tested in southern KS or in northern TX, these data might be applicable to Oklahoma. Otherwise, it is hard to tell how a variety that does very well in another area of the country might perform here in Oklahoma. Some of the varieties that are rated as early in the Northern Great Plains, for example, are still later maturity than some of our latest-maturing

varieties. Again, I would advise stretching the seed of proven varieties rather than going with an untested variety.

Q: I found some seed of a variety that we used to grow about 10 years ago, how would that variety do now?

A: If a variety has fallen out of favor, there is probably a good reason for it. The most likely reason that a variety may have fallen out of favor is because of the disease package. If this is the case, then the issue could be addressed with a foliar fungicide next spring. Issues such as plant height and standability, however, cannot be addressed with chemicals.

Another word of caution on buying seed of an older variety: don't forget seed quality and purity. If the seed is of an 'older' variety then it has likely been out of certification several

years. This means there has been no one checking the standards for seed production, and it is likely the seed has been passed from neighbor to neighbor. It is also likely it picked up a few weed seed along the way. This may not always be the case, but it is very important not to introduce a weed problem to your farm that you don't currently have! Doing so can have repercussions far beyond this growing season.

Q: I am thinking of planting some bin run seed. What do you think about that idea?

A: In almost all circumstances this is a bad idea. As with the previous example, there is a high likelihood that you could wind up with a new weed problem on your farm as a result of bin-run seed. I won't go into detail in this article, but it is also important to consider all applicable PVP laws and how they might affect this decision (see discussion on the next page).

Q: How can I make my seed stretch farther?

A: This is a good question. I would prefer planting 50 lb/a of good quality seed as opposed to sowing 90 lb/a of questionable seed. First and foremost, calibrate your drill. It is a good idea to recalibrate your drill each time you change varieties or anytime field conditions change significantly. The type of calibration I speak of goes beyond looking at the chart on the backside of the drill cover. Actually catch seed or count seed in the furrow to measure how much the drill is delivering. You will find the accuracy of the chart on the drill lid varies greatly by seed lot.

Another option is to plant by seed number. For grain only systems, we only need about 1 million seed per acre. This is roughly 60 lb/a of a seed lot with 16,000 seeds/lb. You might find that your seed this year is closer to 22,000 seeds/lb. As long as you know the germination % and have

your drill calibrated correctly, you could likely cut back on your seeding rate. However, this should only be done if you have good seed and a known germination rate.

Farmers can also stretch seed by sowing a little earlier. This will increase tillering and make each seed go a little further. The downside of planting early, though, is an increased risk for Hessian fly and aphid infestation. So, it is important to weigh both sides of this option, and consider measures such as insecticide and fungicide seed treatments to balance things out.

Q: What can we do to make sure this doesn't happen again?

A: Support your local seed producers. We don't currently have the certified seed production capacity to meet all of our planting needs in Oklahoma. When we have a weather-related disaster such as this year, it only adds to this problem.

This issue is not exclusive to agriculture. Similar to our local hometown businesses, our certified seed producers need support and business during the good and bad years. So, consider the value of having that local certified seed producer around and take this into consideration when you plan for seed in 2008.

Another option is to become a certified seed producer yourself. This process can seem a little daunting at first, but once you get into it you discover that the practices you need to implement are all good agronomic techniques that are likely to increase your wheat yields anyway.

Q & A about PVP laws

By: Jeff Edwards, Small Grains Extension

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.

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.

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