



PLANT DISEASE AND INSECT ADVISORY

Entomology and Plant Pathology
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Armyworms and Wheat Head Armyworms: How to Tell the Difference Tom Royer, Extension Entomologist

Oklahoma wheat growers are experiencing a full blown armyworm outbreak, with infestations ranging from 4-5 worms per foot of row to well over 14 worms per linear foot of row. I have heard that most aerial applicators have waiting times of 5-7 days before they can even get to a field to spray it. It is extremely important for growers to check their fields for numbers. We suggest a threshold of 4-5 caterpillars per linear foot of row as a treatment threshold. That is a very conservative threshold, so if your fields are experiencing populations at that level, there is no need to panic. The armyworms are already at the ½ inch stage, and will probably cycle out and turn into pupae within the next 7-10 days, a spray applied a week from now would not protect very much yield. I have also been finding the cocoons of a wasp parasitoid known as *Glyptopanteles militaris* in many fields. This indicates that many of the caterpillars that are alive right now have begun to die as the parasitoids mature.

I have also heard reports of wheat head armyworm infestations in some areas of the state. I have not yet confirmed the presence of wheat head armyworms, but because of its potential, I believe that growers should be aware of the problem.

The “true” armyworm will feed on wheat beards and glumes of the seed, and may even feed on very immature developing seed. However, they tend to not feed on seeds that have developed past the soft dough stage.



The soft dough stage is about the time that wheat head armyworms begin to really feed on the wheat heads. They feed on seed from the soft dough stage through maturity. They are difficult to control because they become noticeable so late in the growing season, typically when it is too late to apply an insecticide treatment because of the pre-harvest intervals that most products have.

So how can you tell the difference? Here are some comparisons on the two caterpillars:





Armyworm

Body Color: Striped, yellow to brownish green with 3 distinct stripes on each side; the upper stripe is pale orange, the middle one is dark brown and the bottom is pale yellow. Their head capsule is typically smaller of about as wide as their body.



Wheat Head Armyworm

Body Color: Gray to greenish with a distinct yellow, white and brown stripes going lengthwise across the body, but no orange stripe. They typically have a larger head relative to their body. They are very active and “wiggly“ when disturbed. I sometimes characterize them as an armyworm that has overdosed on caffeine. Because the larvae are so variable in color, the best way to identify them is to take a sample to your County Extension Office for submission to the Plant Disease and Insect Diagnostic Lab at OSU.

Wheat head armyworms typically are found in greater numbers along the margins of fields. There is no established treatment threshold for this pest because it so rarely causes economic damage and the damage goes unnoticed until the grain is harvested. Treating a field now for armyworm will likely eliminate any wheat head armyworms as well. However, if you don't need to treat for armyworms, it is important to check your fields for the presence of wheat head armyworm. Registered controls for wheat head armyworms are the same as for armyworm, and you still need to consider the Pre Harvest Intervals for any product you apply.

Wheat Disease Update

Bob Hunger, Extension Wheat Pathologist

Over the last two weeks there has been a scurry of activity still on diseases in Oklahoma, including some diseases that we rarely see. However, given the extended cool and wet conditions we have had (and are still having) through May, this is not all that surprising. Some of these “not-commonly seen diseases” and other observations include:

- Stem rust of wheat, which I found on stems of McNair 701 near Stillwater on about May 21. Samples were collected and sent to the Cereal Disease Lab in Minnesota. Please note the comparison between wheat leaf, stripe and stem rust in Figures 1-3.



Fig 1. Wheat leaf rust (courtesy Dr. Jeff Edwards, Oklahoma State University)

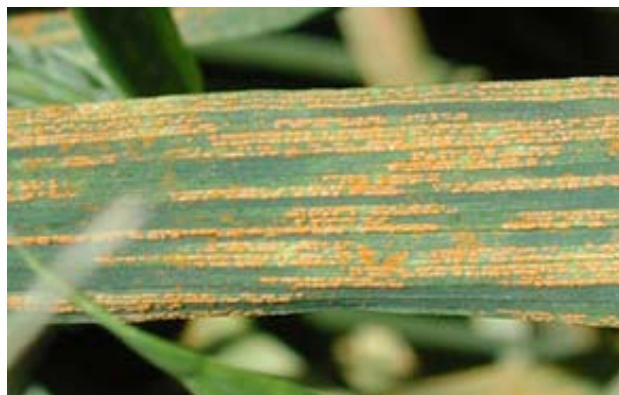


Fig 2. Wheat stripe rust (courtesy of Cereal Disease Lab, St. Paul, MN)



Fig 3. Wheat stem rust (courtesy Cereal Disease Lab, St. Paul, MN).jpg

- Symptoms consistent with the bacterial disease black chaff (Figure 4) have been observed and reported from northern and southwestern Oklahoma. Note the dark discoloration as well as the banding pattern of alternating dark and light bands on the awns.



Fig 4. Black chaff (courtesy Dr. Jeff Edwards, Oklahoma State University)

- A big increase of leaf rust on the varieties Overley and OK Bullet right at the end of the season. Again, samples were collected and sent to the Cereal Disease Lab for race typing to see how the virulence of the rust at the end of the season compares to the rust collected earlier this year.
- Barley yellow dwarf virus and wheat streak mosaic virus continued to be found with BYDV much more common than WSMV.
- Within the last couple of days, samples have come to the lab that had *Fusarium* associated with roots.
- Dr. Brett Carver (OSU Wheat Breeder) reported seeing severe stripe rust in irrigated plots in the panhandle near Goodwell. In contrast, little stripe rust was apparent in dryland plots and fields. However, leaf rust was heavy in both irrigated and dryland plots. This is a good indicator of how a different environment can make all the difference in the incidence and severity of a disease such as stripe rust.

Dr. Richard Grantham
Director, Plant Disease and Insect Diagnostic Laboratory

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