

PLANT DISEASE AND INSECT ADVISORY



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Wheat Disease Update Bob Hunger, Extension Plant Pathologist



Wheat leaf rust has continued to persist since my last update in mid-November 2004. A couple of strong cold spells have helped reduce infected leaves and inoculums, but my examination of field plots the week of January 3 here at Stillwater revealed numerous spore-producing lesions still present on lower leaves. Combining this inoculum with free moisture and mild temperatures that have occurred between the cold snaps will promote infection of the younger, green foliage although pustules will be slow to develop. These are exactly the type of conditions needed to allow leaf rust to overwinter in Oklahoma. Similar observations of leaf rust have been reported from Gary Strickland (County Extension Educator Jackson County) in southwestern Oklahoma wheat fields. Additionally, Dr. Stephen Harrison (small grains breeder at Louisiana State University) has reported finding active wheat

leaf rust on both old and new leaves in observation plots in Louisiana. Further, the weather was extremely conducive for continued sporulation, spread and development of leaf rust.

The only addition to the reports on wheat leaf rust is a sample of 2174 from north central Oklahoma that tested **positive for wheat streak mosaic virus**. Watch for symptoms of WSMV and/or High Plains Virus (HPV) this coming spring as there were numerous reports and confirmations of both of these viruses during the fall in Oklahoma and Texas.

Hessian Fly Reported in Oklahoma Wheat Tom A. Royer, Extension Entomologist

Hessian fly has been found in several wheat fields in north central Oklahoma this winter. It is a major pest of wheat, but major infestations are unusual in Oklahoma, probably due to the drier environment that exists in most growing years. Since this winter was unusually wet and mild, it may have provided better conditions for fly survival. These flies have already done their

damage, and are now resting and waiting for spring to re-infest the field. Unfortunately there is little that a producer can do to control spring infestations of Hessian fly.



The adult Hessian fly is a tiny, about one-eighth of an inch long, and resembles a gnat. The damaging stage is the larva, which is a shiny, white headless and legless maggot that measures up to 3/16 of an inch. When mature, the larva forms a 1/8 inch long dark brown puparium that looks like a grain of rice and is commonly referred to as a “flaxseed”.



There are 2 main generations that occur, one in the fall and another in the spring. Larvae injure the wheat by feeding on stem tissue at the crown of young plants or just above the nodes of jointed wheat. During a fall infestation, young infested plants become dark-green to bluish green in color and are stunted with thickened leaves. Often, secondary tillers fail to develop. To confirm an infestation, the plant and roots should be removed from the soil and inspected for maggots or flaxseeds by gently pulling the leaf sheath away from the stem and examining the crown area. In a spring infestation, the stem is often injured, and

will lodge. A heavily infested field looks like it has suffered hail damage. In such fields, the lodged plants nearly always contain flaxseeds that are inserted at the first joint of the stem, just under the leaf sheath.

Control: Delayed Planting: As stated earlier, Hessian fly infestations are rare in Oklahoma, probably due to the drier environment that exists in most of the wheat belt. In many wheat areas, there is an established “fly free” planting date to use as a guide for planting. If the field is planted after the fly free date, there is little likelihood that the field will be infested. The fly-free date is tied to the occurrence of average killing frosts. Unfortunately, killing frosts can occur so late in Oklahoma that it becomes impractical to delay planting long enough to plant in the “fly free” date. Even so, if fields are planted later, say in October, the risk of a fall infestation will be reduced.

Resistant Varieties: There are 16 known biotypes of Hessian fly. If the most prevalent biotypes of the Hessian fly are known, resistant varieties can be planted. Typically, we have the “GP” biotype in Oklahoma, but that could easily shift over time. I will collect some samples from several of the infested fields and send them to Kansas State University to be identified to biotype. Once the biotype is identified, I may be able to suggest some resistant varieties that can be considered for planting in infested areas.

Clean Tillage: Hessian fly infestations are associated with continuous wheat, which occurs over much of Oklahoma. Infested wheat stubble should be buried at least two to four inches below the surface. Volunteer wheat should be destroyed as soon as possible if summer rains stimulate germination in the field.

Chemical Control: Seed can be treated with Gaucho or Cruiser insecticide to control fall infestations. There is no effective insecticide control for spring infestations; however, researchers in Georgia have obtained some control by timing a Warrior insecticide application to coincide with spring emergence of adult flies.

The best option for early-planted wheat intended for grazing is to consider using a resistant variety or have the seed treated with insecticide. Either resistant varieties or seed treatment will reduce the incidence of a fall infestation, and resistant varieties help with spring infestation as well. Seed treated with Gaucho or Cruiser has a 45 day grazing restriction, but that should not be a problem, since it often takes that long to get wheat mature enough to graze.

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