Insect Management In Wheat

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Planting Date Effects on IPM. Don't plant your wheat until October, preferably mid October. October 15 is the Hessian "fly-free date", and this date corresponds to the approximate date of first freeze in West Tennessee. Hessian flies have two generations - one in the fall and one in the spring. Adult Hessian flies begin emergence from summer dormancy in late August and September. After a freeze, adult Hessian flies are no longer active. Thus, you can avoid potential infestations by abiding by the fly-free date above. There are other benefits to planting after the fly-free date. September planted wheat is sometimes attacked by fall armyworms, but pest rarely causes problems in wheat planted in October. Also, early planted wheat is more exposed to aphids. Aphid colonization of wheat fields is less likely in late fall and winter as the weather gets colder. Aphids can transmit barley yellow dwarf virus (BYDV), and fall transmission of virus has more potential to reduce yields than later transmission. Pictured: Hessian fly larva and pupa (flax seed stage) at base of wheat stem.

Hessian fly larva and pupa (flax seed stage) at base of wheat stem.

Another important management component is to destroy any volunteer wheat that may be persisting by no later than late August of early September. We had some major problem with the spring generation of Hessian flies during 2008. Some fields were not harvested. The worst infestations were in late planted fields following volunteer wheat that was not burned down until shortly before harvest. In some cases, heavily infested fields were nearby volunteer wheat that was either kept for production or just ignored. Volunteer wheat can be a nursery for the fall generation, and the subsequent spring generation of Hessian flies infested nearby fields. Fortunately, there does not seem to be much volunteer wheat around this year.

At-planting or Scheduled Insecticides for Suppression of Aphids/BYDV. Aphids only occasionally cause direct yield loss, but as mentioned above, most species of aphids found in wheat are capable of transmitting BYDV.

There are a several options to consider for managing aphids in wheat. The first is to do nothing. The occurrence of BYDV (and aphids) varies considerably from field to field, year to year, and across planting dates. It is not a sure bet that treating for aphids will increase yield. But keep in mind that you can't put the horse back in the barn if aphids do show up in numbers. By the time aphids are common in the field it is probably too late to treat with the hopes of preventing any disease transmission.

I often recommend some type of fall aphid treatment for wheat planted in October. Seed treatments such as Cruiser (1.0-1.3 oz/cwt) or Gaucho (1.3-1.6 oz/cwt) do a good job of controlling aphids populations during the fall, and treatment benefits may carry over into the spring. Data indicates an average seed treatment response of about 3-4 bushels per acre in Tennessee. I had a test at the WTREC last year where treatments with a Gaucho seed treatment yielded 8-15 bushels above the check, so bigger responses are possible.

Foliar application of insecticide is an alternative to using a seed treatment. Pyrethroid insecticides or Dimethoate are common choices for aphid control. An application can be made about 30 days after planting, or some states recommend a treatment threshold of one aphid per foot of row. This aggressive approach is designed to prevent aphid colonization and BYDV infection. Consider this approach on early planted (October) wheat if a seed treatment was not used.

Another foliar application may be justified in late winter prior to jointing (February-early March) if aphids are re-colonizing the field, or this may be a first application for late planted wheat. I have several data sets showing a late winter application can give a nice yield bump when a fall application or seed treatment was not used. We need more data about the potential value of a late winter insecticide application if insecticides were used in the fall.

Cruiser and Gaucho seed treatments do offer some control of Hessian flies during the fall, and this is a potential benefit for early planted wheat. Below ground insects sometimes reduce stands and vigor of wheat. These include critters like white grubs and wireworms. Foliar insecticide applications will have little effect on below ground pests. On the plus side, foliar applications are relatively inexpensive especially if they can be piggybacked with applications of herbicides or other products.

Other Considerations. Cereal leaf beetles and true armyworm are other pests worth mentioning, but these are springtime problems so I won't elaborate here. Both are very occasional pests, but populations should be monitored beginning in April. Treatment thresholds and insecticides recommended by UT are available on line. Δ

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