

News Column

Stacy Campbell

Cottonwood Extension District, Hays

September 21, 2020

The Hessian fly

A recent question prompted me to write this week's article about this tiny insect pest to wheat.

The question I received was – with farmers planting oats and triticale for forage and/or a cover crop or both. Do either of them serve as a plant host to the hessian fly? No, host plants to hessian fly are wheat, and to a lesser extent barley and rye.

The Hessian fly or barley midge, is a species of fly that is a significant pest of cereal crops including wheat, and to a lesser extent barley and rye. Though a native of Asia, interestingly the Hessian fly was first observed in New York in 1779 near a Hessian soldier encampment, hence the common name. Supposedly in the straw bedding of the Hessian troops during the American Revolution (1775-83).

This small, gnat-like fly and the injury it causes, frequently go unnoticed until harvest. Infestations are fairly common in all but the extreme southwestern portions of the state. This insect has been known to do considerable damage to wheat when conditions are favorable for development.

The adult Hessian fly is a tiny, dark-colored insect about 1/8-inch long that resembles a gnat. These adults only live for one to three days, during which time they mate. After mating, females lay eggs in the leaf grooves of fall-seeded (preferably seedling) wheat.

Within three to 10 days, the oblong reddish eggs hatch into tiny larvae that migrate downward during the night when humidity is high. Larvae cannot survive exposed on the leaf surface. Larvae feed by withdrawing sap from the plant for eight to 30 days. Temperature influences development, and most larvae mature before the onset of cold weather. Mature larvae are shiny, whitish, legless and headless maggots about 3/16-inch long. Full-grown larvae gradually form flaxseed, and just as in the summer, the insects pass the winter in this flaxseed stage.

Fall infestations are not always conspicuous at first. Infested shoots are stunted and sometimes killed. In less common and severe cases, the entire stand may be lost, especially if significant infestation occurs shortly after germination while plants are in the seedling stage. If tillering has begun at the time of infestation, only individual tillers may actually be killed.

Overwintering pupae that produce the spring brood may become adults in late March, although peak emergence usually occurs in April. Females prefer young leaf blades for egg laying. By this time plants usually are jointing, much larger, and better able to withstand infestation. Mild infestations are not obvious and are potentially overlooked or attributed to hail or wind damage.

The Hessian fly life cycle includes a main spring brood, followed by flaxseeds that lie dormant in the stubble until they emerge to produce the main fall brood. Under favorable weather conditions, volunteer wheat present in or adjacent to infested fields can support development of a summer brood. These Hessian flies arising from this summer brood may produce a secondary fall brood that is likely to injure the planted crop. Because of this summer brood, damage is likely even though the fly-free date

was followed at planting time. An additional brood may be produced in the spring. It usually occurs later than the main infestation, and the attack often occurs higher on the stems.

Using the fly-free date means not planting until that date is reached in your location, Barton Co. Oct. 4th. In theory, waiting until this date allows time for the main fall brood of adult Hessian flies to emerge and die before wheat is planted. Without live wheat plants, emerging females are deprived of a place to lay eggs, minimizing fall infestation. There is still some risk if a nearby infestation exists and a secondary fall brood develops.

Now as the late Paul Harvey is famously known for saying— “and now the rest of the story”, will have to wait until next week’s article. When I cover some more information about the Hessian fly.