Fly-free date for planting wheat is today

Planteing date is one of the critical management practices that affect wheat yields. Wheat is planted in fall and generally in fields that were previously planted to soybeans.

For top yielding wheat, a farmer would like to have three to five tillers established before winter. Tillers are shoots that develop off the main stem. Fall tillers generally produce more grain than spring tillers.

Adequate fall growth is also needed to get plants through the winter and have enough energy stored for spring growth.

Two events generally determine when farmers plant wheat: soybean harvest and the fly-free date. Weather determines soybean harvest, but the fly-free date is the same each year.

The fly-free date is the time that the main fall brood of adult Hessian flies have completed their life cycle and died before emergence of susceptible wheat seedlings. Research has established today, Sept. 25 for Hancock and Putnam counties, and Wednesday, Sept. 26 for Hardin and Wyandot.

The adult Hessian fly is a tiny, dark-colored insect about 1/4-inch long that resembles a large grain or small mosquito. Females lay eggs on the seedling leaves, which hatch in three to seven days.

Newly emerged maggots will move down to the crown of the plant and reside in the grooves of the leaf sheath and stem. They will feed on plant tissue by using their mouthparts like sandpaper and lap up juices that seep out.

Larvae are the only stage that damage wheat; adult flies do not feed. Maggots usually feed on the lower leaves and stems and reduce plant vigor. Infested plants become stunted and stilly erect, and leaves are thickened with a bluish-green color.

A single maggot feeding on a plant for three days can stunt a young plant or tiller. Heavily damaged plants usually die during the winter.

Outbreaks of the Hessian fly have caused severe losses in wheat for the past 235 years in this country. It also may damage barley and rye, but not oats. Its damage was first observed in North America in the Long Island, New York area in the late 1770s.

The fly was found in the vicinity where British Gen. William Howe's troops were encamped. It was thought that Hessian soldiers in his army brought the pest from Europe in straw used for bedding; thus its name — Hessian fly.

The Hessian fly moved from Long Island approximately 20 miles annually until it reached the wheat-growing region of the Great Plains. Problems associated with the pest and possible control methods are discussed at length in Thomas Jefferson's agricultural writings.

Hessian fly caused a national shortage of wheat in 1836 that caused economic problems for farmers prior to the Panic of 1837. It was reported in Ohio agricultural reports as early as 1847.

In the latter part of the 1800s Hessian fly infestations were specifically reported in Crawford, Defiance, Seneca, and Wood counties of Ohio. Serious outbreaks occurred in Ohio in 1885 and 1920. Parts of Indiana had serious outbreaks as late as the early 1960s.

A "fly-free" date was observed as a possible control practice as early as the late 18th century in the Mid-Atlantic States. The Ohio Agricultural Experiment Station started using fly-free dates for Ohio from 1911 to 1919.

Nationwide fly-free dates were established from studies conducted from 1918 to 1935. The dates used today in Ohio and other states were a result of this research.

In addition to fly-free dates, resistant variety programs were initiated in our region in the 1940s. New varieties with Hessian fly-resistant genes were heavily introduced between 1950 and 1983.

The low incidence of damage from Hessian fly in Ohio today can be attributed to both host-plant resistance and planting date. However, over the past decade, surveys have shown that the genes are no longer effective against a new emerging biotype of Hessian flies.

With the loss of plant resistance, planting date will once again be our main defense against devastating yields losses to Hessian fly. With global warming, new research may be required and the dates adjusted as our climate changes.

The fly-free date is not an absolute planting time. Research has shown that yields are minimally affected as long as wheat is planted within two weeks of the fly-free date. If temperatures stay above normal for the next few months, even wheat planted during the end of October may do well providing it is a mild winter.

Research has also shown that wheat planted weeks before the fly-free date is more vulnerable to disease, such as barley yellow dwarf virus, and insect feeding from aphids and mites. The extra growth from early seedlings may also increase the chance of foliar diseases in the fall.

Thus the fly-free data has proven to be a good calendar tool for planting high-yielding wheat. As the beans are harvested in the area, wheat farmers will be trying to plant their wheat over the next two weeks.

Additional information on the Hessian fly may be found at: https://entomologytoday.org/2018/06/01/hessian-fly-new-guide-details-wheat-integrated-pest-management/

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