

2008 Wheat Midge Forecast Favorable for Wheat Producers

A soil survey conducted last year detected decreasing levels of overwintering wheat midge larvae for the upcoming 2008 season, according to Janet Knodel, North Dakota State University Extension Service entomologist.

“Wheat midge populations ranged from zero to 678 midge larvae per square meter, with most of the state having less than 200 midge larvae per square meter during 2007,” Knodel says. “Approximately 56 percent of the soil samples were positive for wheat midge larvae, with an average of 107 larvae per square meter.”

The area with more than 500 midge larvae per square meter was concentrated in Cavalier and Towner counties in 2007, but the numbers have decreased in 2008. However, a small, new pocket, with more than 500 midge larvae per square meter, has shown up in Divide County in northwestern North Dakota.

There also are several small pockets of lower numbers of 201 to 500 midge larvae per square meter in the counties of (west to east) central Divide, south-central Burke, west-central Renville, east-central Mountrail, central Ward, northern Benson, eastern Eddy, northern Ramsey and a larger pocket in central Cavalier. Areas with more than 200 midge larvae per square meter should be scouted to determine if economic population levels exist.

No soil samples were collected with more than 1,200 midge larvae per square meter in 2007, which is considered a high-risk for wheat midge infestation in 2008.

“At this infestation level, some control tactic must be used to reduce midge populations, such as insecticide spraying, or planting of a nonwheat host, such as canola, soybeans or sunflowers,” Knodel says.

“The good news is that the tiny, black parasitic wasp that helps control wheat midge populations has doubled from an average parasitism rate of 8 percent in 2007 to 16 percent in 2008,” Knodel says. “This wasp is a parasitoid, which means it lives inside the wheat midge larvae and eggs. The wasp will emerge the following spring, which kills the wheat midge larvae it was living in.”

There are several reasons for the increasing parasitoid population in North Dakota. There is a correlation with fungicide spraying for wheat scab and the amount of insecticides sprayed for wheat pests because tank-mixing of fungicides and insecticides is popular to save application costs. Since the weather has been unfavorable for scab development during the past few years, less fungicides and insecticides have been applied. As a result, the parasitoid was not killed as readily because fewer poisons were sprayed on fields.

Parasitism typically ranges from 0 percent to 100 percent each year, with the higher rates occurring in areas where midge populations have been high the past few years.

“However, this year several counties, including Burke, Mountrail, Ward, McHenry, McLean, and Bottineau counties had areas with parasitism rates of more than 50 percent.” Knodel says. “This is good news for North Dakota wheat growers.”

With the high price of wheat and durum, producers may want to lower the density of adult wheat midge present in fields as their action threshold. The typical action threshold is one midge per four to five wheat heads for hard red spring wheat and one midge per seven to eight heads for durum when wheat and durum is below \$10 per bushel.

A new bulletin, “Integrated Pest Management of Wheat Midge in North Dakota” (E-1330) is available through NDSU Extension Service county offices. The publication summarizes scouting procedures and best pest management strategies to optimize wheat yield.

The wheat midge survey is conducted by the NDSU Extension Service and supported by the North Dakota Wheat Commission.

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