

Triticum Mosaic: A New Wheat Disease in Kansas

Erick De Wolf, Plant Pathologist

Dallas Seifers, Plant Pathologist

Triticum mosaic is a wheat disease discovered by plant pathologist Dallas Seifers and wheat breeder Joe Martin at the KSU Agricultural Research Center - Hays. The disease was discovered in 2006 when the variety RonL, which is one of the first varieties to have high levels of genetic resistance to wheat streak mosaic, developed severe symptoms of viral disease. The virus infecting RonL and causing the symptoms is now recognized as *Triticum mosaic virus* (TriMV).

Symptoms

The symptoms of wheat infected with triticum mosaic include light-green or yellow streaking, spotting, or mottling (Figure 1), and are nearly identical to the symptoms of wheat infected with wheat streak mosaic or the high plains disease.

The variety RonL is known to be susceptible to triticum mosaic, but additional evaluation is needed before the reaction of other varieties can be determined. Preliminary evaluation suggests that some wheat varieties grown in Kansas are moderately resistant to infection by the virus. However, when plants are infected with both triticum mosaic and wheat streak mosaic, the symptoms may become much more severe (Figure 2). Plants that are infected with both diseases may die prematurely and produce little or no grain. This type of reaction also occurs when plants are infected with wheat streak mosaic and the high plains disease.



Figure 1. Symptoms of triticum mosaic include yellow streaking, spotting or mottling of leaves. These symptoms are very similar to those of wheat streak mosaic.

Quick Facts

- Discovered in 2006, triticum mosaic is a new viral disease affecting wheat in Kansas.
- The symptoms in wheat infected with triticum mosaic are virtually identical those of wheat infected with wheat streak mosaic and the high plains disease and include yellow streaking, spotting, or mottling.
- Preliminary evaluation suggests that some wheat varieties may have moderate levels of resistance to triticum mosaic. However, severity of the disease is greater when plants are infected with both triticum mosaic and wheat streak mosaic.
- Volunteer wheat is known to be a favorable host for the virus and the wheat curl mites that spread the virus. Eliminating volunteer wheat 2 weeks before planting greatly reduces the risk of severe triticum mosaic and wheat streak mosaic.

The full distribution of triticum mosaic has not been determined, but the disease is known to occur in the western half of Kansas including Cheyenne, Ellis, Ford, Ness, Osborne, Pawnee, and Trego counties. To date, the

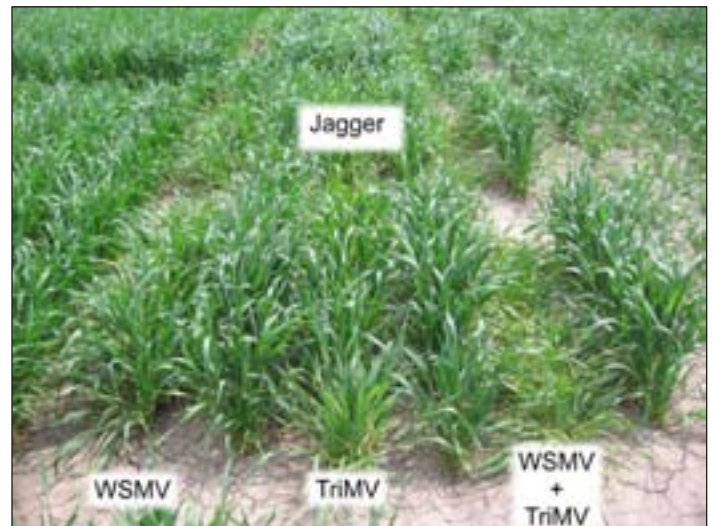


Figure 2. Symptoms of wheat infected with wheat streak mosaic virus (WSMV), Triticum mosaic virus (TriMV), and plants infected with both Wheat streak mosaic virus and Triticum mosaic virus (WSMV+TriMV). Notice that plants infected with both viruses have greater disease severity.

virus appears to be rare in other areas of Kansas, but surveys are ongoing to more fully define the distribution of the disease.

Control

The management recommendations for triticum mosaic are nearly identical to those currently used to

control wheat streak mosaic. The wheat curl mite spreads both viruses. Eliminating volunteer wheat, which is known to harbor large numbers of wheat curl mites and the viruses, can significantly reduce the risk of severe disease. Destroying these volunteers with herbicides or tillage at least 2 weeks before planting a new wheat crop will significantly reduce the risk of severe disease.

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