

Preventing Wheat Streak Mosaic Virus

Wheat Streak Mosaic Virus is a viral disease that attacks wheat, oats and barley plants. Based on observations, the 2015 wheat crop experienced tremendously high levels of Wheat Streak Mosaic Virus levels. First documented in 1922, the disease has been present for a long time and is only transmitted by a vector, namely an insect called the Wheat Curl Mite. Therefore, control strategies include managing this insect vector.

Wheat Streak Mosaic Virus symptoms include a yellow “mosaic” pattern on wheat leaves and sometimes stunted wheat plants. Normally these symptoms show up in wheat plants during the spring, but can, in some cases be present in the fall. Long, warm fall temperatures can enable the Wheat Curl Mite to remain active late in the season. In the spring as air temperatures rise, symptoms become more apparent. Often times, High Plains Virus is also present when Wheat Streak Mosaic virus is present.

A key factor in wheat virus outbreaks has been over-summering hosts which harbor the Wheat Curl Mite. These hosts can include wheat fields, volunteer wheat, pasture wheat grasses, and even corn fields. However, volunteer wheat is the number one “green bridge” contributing to Wheat Streak Virus outbreaks. When volunteer wheat is left growing late in the summer, Wheat Curl mites jump from volunteer wheat to newly planted emerged wheat and the “green bridge” is complete, with newly emerged wheat plants now infected with the virus. Once wheat plants are infected with a virus, there are no control measures. Wheat Curl mites are not winged, but glide with winds to new wheat fields. Gliding distance appears to be less than 1 mile, normally.

Prevention is the key to best management when it comes to Wheat Streak Mosaic Virus. Once the crop is infected, nothing can be done to fix the issue. **Controlling volunteer wheat is the most important management strategy.** Volunteer wheat must be controlled with either tillage or herbicides a minimum of 10 days prior to newly planted wheat emerging. This 10 day period breaks the “green bridge” as Wheat Curl Mites cannot survive on dead wheat plants.

Other strategies include planting wheat varieties that can tolerate Wheat Streak Mosaic Virus better. Varieties in this class include: Clara, Mace, RonL, T163, and Tam 112. On the other hand, susceptible varieties include: Hatcher and Brawl CL Plus among others. Popular wheat varieties, such as CSU’s Byrd, not mentioned above fall under the moderately susceptible category. Another strategy includes planting wheat later in the season. As weather cools the mites become less active.

Strategies employed to reduce the likelihood of Wheat Streak Mosaic Virus infections will pay dividends in the form of increased yields.



Wheat Streak Mosaic Virus in Wheat.

Source: Stephen Wegulo, G. Hein, R. Klein, R. French. University of Nebraska publication EC 1871.