

Wheat Streak Mosaic Infection in 2008

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There seems to be some confusion about what to do with wheat that is infected with wheat streak mosaic (WSMV). At this time of the year (April 24), only those fields that are severely infected should be abandoned or grazed out. For the most part, this will be dryland fields that were planted relatively early. The infection generally comes from volunteer wheat or other grasses that serve as a host for the wheat curl mite which transmits the disease. A good discussion of WSMV along with pictures of symptoms can be found at: <http://varietytesting.tamu.edu/wheat/docs/e337wheatstreakmosiacvirus-2.pdf>

This year we are seeing fields that are infected with any of three viruses. These are: WSMV, high plains disease (HPV) and the recently identified Triticum Mosaic Virus (TriMV). For information on TriMV see the following article:
<http://www.plantmanagementnetwork.org/pub/php/news/2008/TMV/>

Plants can be infected with any one or combination of these three viruses. This year, those plants that are expressing the most severe symptoms are usually infected with more than one of these viruses. It is impossible to tell the difference in the three viruses based on symptoms in the field. If a field is thought to be infected, whole fresh plant samples (including roots) can be collected and brought to the Texas AgriLife Research and Extension Center in Amarillo to be tested by the Plant Diagnostic Lab.

Expected Yield Reduction

So, how much will yield be reduced if a field is infected with one or all of these viruses? It really depends on the severity of infection on a per plant basis, and the percentage of the plants in a field that are infected. Usually, only part of a field is severely infected (the part of the field nearest the source of infection i.e. volunteer wheat or CRP/pasture land). Some fields will only have random plants infected. Those fields with a high percentage of plants infected early (fall or early spring) will have the most reduction in yield. These fields would have most certainly been exhibiting symptoms (yellowing, see above website) six weeks ago. Fields that are just now showing some symptoms are unlikely to see a dramatic reduction in yield. Irrigated fields that are just beginning to show signs of infection, particularly if it just random plants or only a small portion of the field, should not be abandoned. A research project in 2006 conducted by Texas AgriLife Research plant pathologists at Bushland, showed a reduction in yield of about 59% in a **highly susceptible** wheat variety **heavily infected** with WSMV under full irrigation. There are a few wheat varieties that have moderate tolerance to WSMV and would thus not have as much yield loss. These tolerant WSMV varieties may or may not be tolerant to HPV or TMV.