Post Rock Extension District Column

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The key to managing the Wheat Streak mosaic virus is controlling your volunteer wheat

Well we had a welcome relief from the hot temperatures! Hopefully we will continue to receive some moisture. Producers are preparing for the 2022 wheat crop with variety selection and ground preparation. Stay tuned and I will share with you some management guidelines to remember about controlling volunteer wheat and the wheat streak mosaic virus.

Let's review this past wheat growing season. This year, the wheat crop faced several challenges that might have increased the amount of seed left behind after harvest, which could also increase the amount of volunteer wheat. These problems included: A considerable amount of head scab (Fusarium head blight) which causes shriveled and light weight kernels that might have blown out the back of the combine. These kernels can germinate as the normal developed kernels. Possibly some hailed-out wheat along with the delay of wheat harvest in many areas due to rainfall.

The Wheat streak mosaic virus was prevalent around the state which is vectored by the wheat curl mite. One of the best preventative measures for wheat streak is the control of volunteer wheat early and often after harvest. If volunteer wheat is allowed to stand, it creates a "green bridge", allowing wheat streak mosaic and wheat curl mites to survive. Volunteer wheat should be terminated at least two weeks prior to planting to allow sufficient time for mites to die off.

Wheat curl mites will move off growing wheat as the green tissue dries down and dies. After moving off the existing wheat at or near harvest time, the mites need to find green tissue of a suitable host soon or they will die. Producers often like to wait several weeks after harvest before making their first herbicide application to control volunteer wheat. This allows as much volunteer as possible to emerge before spraying it or tilling it the first time. Glyphosate and atrazine are two herbicides that are often used for this purpose. Often, a second application or tillage operation will be needed later in the summer to eliminate the green bridge to fall-planted wheat by making sure all volunteer is dead within ½ mile of wheat being planted in the fall. As we saw in 2020, wet weather through late summer often favors multiple flushes of volunteer wheat and also favors the growth of other grassy weeds that can also support moderate populations of the curl mites and virus.

Volunteer wheat is not the only host of the wheat curl mite. Over the years, multiple research studies have evaluated the suitability of wild grasses as hosts for both the curl mite and the wheat streak virus. There is considerable range in the ability of a grassy weed species to host the mite and the virus. Barnyardgrass is among the more suitable hosts for both virus and mites, but fortunately it is not that common in wheat fields. In contrast,

various foxtails, although a rather poor host, could be an important disease reservoir simply because of their abundance.

If volunteer wheat and other hosts are not controlled throughout the summer and are infested with wheat curl mites, the mites will survive until fall and could infest newly planted wheat. Wheat curl mite infestations of wheat often lead to wheat streak mosaic infections.

Lastly, other than timely control of volunteer, wheat variety genetic resistance is also an important tool for WSMV control. Genetic resistance to wheat streak can also reduce the risk of severe disease problems. There are currently a few varieties adapted to Kansas that have wheat streak mosaic resistance, including KS Dallas and resistance to the wheat curl mite which includes KS Western Star and T-158. So be a good neighbor and control your volunteer wheat! If you have additional questions on controlling volunteer wheat and the wheat streak mosaic virus, give me a call or stop by any of our Post Rock District Offices in Beloit, Lincoln, Mankato, Osborne or Smith Center.

Post Rock Extension District of K-State Research and Extension serves Jewell, Lincoln, Mitchell, Osborne, and Smith counties. Sandra may be contacted at swick@ksu.edu or by calling Smith Center, 282-6823, Beloit 738-3597, Lincoln 524-4432, Mankato 378-3174, or Osborne 346-2521. Join us on Facebook at "Post Rock Extension" along with our blog site at "postrockextension.blogspot.com. Also remember our website is www.postrock.ksu.edu and my twitter account is @PRDcrops.