

Post Rock Extension District Column

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Controlling volunteer wheat important NOW!

Many producers are busy out in the fields swathing and baling alfalfa and forage sorghum or sudan, but it soon will be time to be out in the fields with wheat drilling! There is still time to control or kill the volunteer wheat **BEFORE** you attempt to plant your 2021 wheat crop.

Producers really don't like the mention of **volunteer wheat**, but you can always count on it rearing its ugly head. Volunteer wheat is a fact of life in wheat production and no combine is perfect, so there is usually plenty of grain left on the ground in the field to produce volunteer. Stay tuned and I will share with you the management guidelines to help prevent this disease in your wheat for 2021.

Volunteer wheat can serve as a host for insects such as the wheat curl mite, Hessian fly, greenbug and the bird cherry-oat aphid along with diseases such as wheat streak mosaic and barley yellow dwarf. **Wheat Streak mosaic, spread by the insect...the wheat curl mite**, is the most important threat from volunteer wheat.

The wheat can be infected with the wheat streak virus in the fall or in the spring with fall infection most impacting the yield. Adult and immature wheat curl mites are tiny, white, cigar-shaped organisms with four legs near the head. They are nearly invisible to the naked eye and fit between the veins of the wheat leaves. Eggs are placed in rows along leaf veins. The mites reproduce most rapidly at 75° to 85°F. Reproduction stops at temperatures near freezing, but the mites can survive for several months at near freezing temperatures and for several days at 0°F. Under good conditions, a generation can be completed in 10 days. Most mites are found on the terminal leaves and move to each new leaf as it emerges. Heavy mite populations can cause the leaf margins to roll or curl inward, hence the name.

As the wheat plant dries down, the wheat curl mites congregate on the flag leaves and even the glumes of the head where they are picked up by wind currents and carried to their over-summering grass hosts including **volunteer wheat, corn and a few other grasses**. As summer hosts start to dry down the reverse process occurs and mites are carried by winds to newly emerged winter wheat. The most severe wheat streak mosaic is found where volunteer wheat provides a "**green bridge**" through the summer between successive wheat crops. Hail during the heading period can also lead to high over-summering populations by knocking heads containing wheat curl mites to the ground and starting early volunteer. This early volunteer can then be immediately infested with wheat curl mites. Look for **yellow streaking or mosaic patterns on young leaves**. Infected plants are stunted and tiller poorly and tillers may sometimes be prostrate on the ground.

On average, Kansas producers lose 10 million bushels per year to this disease. **Control of volunteer wheat is the best defense against the wheat streak mosaic virus.**

If the volunteer is still alive, or worse yet, dying when new wheat is emerging, pests and diseases will likely move from the volunteer wheat directly into the new wheat. Some worst cases of wheat streak mosaic, in past years, were in fields where volunteer was sprayed soon after the wheat crop was planted. As the volunteer slowly died from the herbicide the wheat curl mites moved into the emerging wheat and spread the wheat streak virus to the plants.

Volunteer wheat can be destroyed by either conventional tillage or by use of chemicals or a combination of both. **Destruction of volunteer wheat at least 2 weeks prior to planting winter wheat in the fall is the most effective management practice for controlling the wheat curl mite and the disease that it vectors.** Avoiding early planting can also reduce wheat curl mite numbers and the length of time that they have to transmit the wheat streak virus. Varietal selection can also be an important way to reduce the impact of wheat streak. Producers in areas where wheat streak is common should avoid varieties that are highly susceptible to the wheat streak mosaic virus. To date, control of wheat curl mites with foliar miticides has not been shown to be an effective practice. Since the mite is carried by the wind from plant to plant and from field to field, the control of **ALL** volunteer is essential. The mite can be carried for several miles so the cost of **NOT** controlling volunteer may hurt you and also your neighbor.

If you are noticing volunteer wheat close to where you will be planting winter wheat you may want to select a variety that has some resistance to wheat streak mosaic or plant later as indicated by the **Best Management Practices** which ranges from September 29 in Jewell and Smith Counties to October 4 in Lincoln with Osborne and Mitchell counties in between those dates. Very few wheat varieties possess the wsm2 gene for resistance to wheat streak mosaic with one variety including a NEW variety KS Dallas which is also intermediate to the triticum mosaic virus. SY Wolverine, WB 4418 and WB 4792 are intermediate for the WSM virus which might help in lessening the virus infection.

A couple of excellent publications are available for producers through K-State Research and Extension including the 2020 Wheat Variety Disease and Insect Ratings along with the 2020 Chemical Weed Control for Field Crops, Pastures, Rangeland and Non-cropland. The Disease ratings publication provides evaluation of each of the wheat varieties for disease and insect resistance while the chemical publication outlines weed control chemicals for each of the major crops in Kansas. Remember volunteer wheat is the source of severe problems and may actually cost much more if **NOT** controlled. Stop by or call any office of the Post Rock Extension District for the publications I mentioned, or additional information on controlling volunteer wheat.

If you have additional questions on controlling volunteer wheat contact me at any of the Post Rock Extension District Offices in Beloit, Lincoln, Mankato, Osborne or Smith Center.

Post Rock Extension District of K-State Research and Extension serves Jewell, Lincoln, Osborne, Mitchell 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 now 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.