

Post Rock Extension District Column
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Is our wheat condition due to drought, fertility or disease concerns or ALL the above?

Well, the old myth, “Wheat has nine lives!”, may be on the tail-end, as some of our wheat fields may be destroyed or simply left and not taken for grain! Unfortunately, these dry conditions are the worst in the history of the state for drought conditions! However, some wheat fields look fairly decent considering the growing condition. Stay tuned and I will share with you a wheat condition update.

So, if your wheat fields are turning yellow or dying, just want are some of the causes?

Let’s start with the obvious cause..... Drought!!! The dry conditions that we have been experiencing, as you know, have caused significant concerns for the wheat crop. **Poor root growth** is certainly at the top of the list! If the plants have a poor root system, then the root systems are not extensive enough to access enough water and nutrients, causing the plant to turn yellow and even prematurely die.

Cold weather injury at the tillering stage has also been a problem for this year’s wheat crop. A sudden drop in temperatures after the wheat has greened up, but before it reaches the jointing stage will burn back the top-growth, often giving the field a yellowish cast but not necessarily reducing yield potential injury is likely cosmetic, provided the growing point is still healthy. Variety release from winter dormancy can also affect the extent of the symptoms, as early varieties would have been less cold-hardy and thus likely sustain more injury. But as we all know, some fields simply just greened up and then went backward pretty fast, which is probably due to the limited root development to sustain the already stressed plant.

Even with the dry conditions, one disease can still show up which is the **Wheat streak mosaic complex**. This viral disease is vectored by the wheat curl mite. Yellow areas in the field will appear in spring around the jointing stages of growth; usually on field edges adjacent to **volunteer wheat**. Leaves will have a mosaic of yellow streaks, stripes, or mottling. Plants infected with wheat streak mosaic are often smaller than healthy plants. There are two additional viruses, Triticum mosaic virus and high plains mosaic virus, that also result in similar symptoms.

What about fertility concerns in the wheat crop? **Nitrogen deficiency** could also be a problem out in the wheat. As the crop starts to grow in the spring, its nitrogen (N) demand increases and it is common to see N deficiency, especially while the temperatures are lower and not much N is mineralized from the soil organic matter. Nitrogen deficiency causes an overall yellowing of the plant, with the **lower leaves yellowing** and dying from the leaf tips inward. Nitrogen deficiency also results in reduced tillering, top growth, and root growth. The

primary causes of N deficiency are limited root growth to uptake nutrients, insufficient fertilizer rates, application problems, applying the nitrogen too late, and the presence of heavy amounts of crop residue, which immobilizes nitrogen. Producers have been making some tough decisions on spending the money to top dress the wheat or destroy it.

Similar to nitrogen, the crop's **sulfur** requirement increases in the spring as it takes off on reproductive growth. Due to a decrease in sulfur deposition in the rainfall, there has been an increasing number of fields with sulfur deficiency symptoms in Kansas in recent years. Sulfur deficiency can also occur where soils are cold in the spring due to a reduced rate of release of sulfur from organic matter. The symptoms of sulfur deficiency are very similar to nitrogen deficiency. However, **sulfur deficiency** differs from N deficiency in that the whole plant is pale, with a greater degree of chlorosis (yellowing of plant tissue) in the **young/upper** leaves.

So, what about **weed pressure**? With the thinner wheat stands, weeds will be a concern, if not managed for this year. Weeds have been showing up even with the dry conditions. Be vigilant in scouting for weeds and manage them on a timely basis.

Okay, on more of a “lighter” note, I have been driving around north central Kansas and looking at the wheat fields! There are actually some pretty good wheat fields out there considering what we have experienced. So, I think we will still have some wheat here, just depends on where Mother Nature dropped the moisture!

Please contact me if you have any questions on your wheat crop and I would be glad to visit with you and come and take a look at your wheat fields.

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 “Ag News Roundup” every Friday. Also remember our website is www.postrock.ksu.edu and my twitter account is @PRDcrops.