



.....STRAIGHT FROM THE HORSES MOUTH

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April 3, 2015 Edition

I have always said that wheat is like a cat...it has nine lives. But after a couple of weeks of looking at wheat fields across South Central Nebraska I have to say I am afraid, in many cases, it has used up all of its lives. I was a little afraid of what we would have when wheat came out of dormancy because of a couple of factors. One is that we didn't get much fall rain, hardly any snow for cover and moisture, and then a few days of below zero wind that just howled over the exposed young wheat. Oh, I know that every field and location with the bottom tiers of counties is different, and it seemed to me that it digressed in condition as you move from Nuckolls to Franklin County, and I am sure even worse further West. I thought first that we were just short of moisture and felt that with some rain we would see a green-up and the outgrowth of some shoots. Unfortunately the rain was limited and spotty in nature and many of the fields I observed in the Northern half of Webster County got only a sprinkle, which was way short of what we desperately needed. Now in those fields that did get some rain, there was indeed some greening up, but unfortunately winterkill appears obvious in some fields -- on top of the drought stress. It just makes me sick! So drought again - plus winterkill - a double whammy! Let's explore that this week!

I had the opportunity to go look at fields all last week and mostly to evaluate if we should fertilize or use any herbicides. We pretty much ruled that out until we seen if we got some moisture or not as most of the fields were showing stress. My first impulse was that it was drought related but then this past week I started seeing more signs of winter kill. That was confirmed when UNL Plant Pathologist, Stephen Wegulo, came out to look at Blue Hill and Bladen area wheat fields. We met up with farmers and looked at particular fields in that region. We also found a team of observers from Norder's doing the same thing we were. The good news is that we did not find insects or disease, but the bad news is that the confirmation of drought and winterkill effects on our wheat. It also proved to be a little confusing as we saw fields with wheat that exhibited winterkill, other's that were most likely drought stress and in some fields it showed the ravages of both stressors.

As far as winterkill, we saw examples where the same variety would show these affects in one field but not in other fields. There were different varieties that seemed to fair a little better, but then with some fields it did not seem to make any difference. It should be noted that winter wheat survival also can be affected by a number of factors besides variety tolerance to winterkills. Most of the fields we looked at had been planted with "Overland" which is shown to have "good to very good winter hardiness". One field that was very obvious in winterkill was a half of a field that was planted to the "Cy Wolf" variety. That particular wheat was rated "very good winter hardiness", but that particular field showed no doubt if it would come back. That cat was dead! Go figure! It would be interesting to find out how other varieties have fared.

My guess is that it will be across the board with all varieties as if you look at winterkill or at least injury, several factors may contribute including: 1) lack of rain; 2) lack of snow and snow cover; 3) fluctuating high-low temperatures; 4) loose seed beds; 5) amount and distribution of crop residue; 6) seeding date and depth; 7) type of drill use; 8) soil type and quality; and 9) conservation practices. We also noticed that where there was protection to the north of the field with a windbreak, you just didn't see the extent of winter kill. It also made a big difference of what had been planted the year before. It seemed that for the most case, last year's soybean fields had the tendency to show the most damage. I am not so sure that that may have been a combination of stress from lack of moisture plus very little residue with exposure to the cold.

According to <http://cropwatch.unl.edu/>, with the harsher winter conditions, the effects of practices such as seeding date and seedbed preparation are more evident. Early seeded winter wheat used soil water last fall, leaving little moisture in the soil profile in some areas. Dry soil heats up and cools down six times faster than moist soil, increasing winter injury and winterkill. Late-seeded winter wheat also sustained damage in some areas as it was not well enough established to tolerate the harsh winter conditions. In some fields greener plants in wheel tracks suggest the importance of preparing a firmer seedbed throughout the field. That was evident in at least one field between Blue Hill and Bladen. Too often in wheat, we see the more compacted areas are better established suggesting the need for a firmer seedbed during planting. Temperature fluctuations also can cause damage and winterkill. Since fall we have seen some high temperatures that dropped quickly to some pretty low temperatures. Experience with winter wheat has been that if you get a couple of these cycles where the wheat starts growing and goes in and out of dormancy, it loses its winter hardiness.

The type of drill can also be a factor. Did you use a Van Brunt style or a no-till drill? Drill openers also can be a factor. There is normally less injury and kill with hoe drills versus disk drills. This is probably due to the soil sloughing off the sides of the furrow and protecting the crown and roots of the plant. Also, the furrow catches some snow. Seeding depth is also critical because crowns close to the soil surface are more subject to changes in temperatures, dry soil, and harsh winter conditions. Winterkill can be caused by lack of soil moisture which doesn't allow for a buffer against heating/cooling of the soil. It can also be caused by late-seeding of wheat which isn't well enough established to tolerate winter conditions. Last winter, a few cycles of really high temperatures dropping down quickly to low temperatures also affects wheat as it goes in and out of dormancy affecting winter hardiness. Seeding too shallow also allows crowns too close to the soil surface where they aren't buffered from soil temperature and moisture changes. All sad! Now we have to look at decisions for that wheat!!

The preceding information comes from the research and personal observations of the writer which may or may not reflect the views of UNL or UNL Extension. For more further information on these or other topics contact D. A. Lienemann, UNL Extension Educator for Webster County in Red Cloud, (402) 746-3417 or email to: dlienemann2@unl.edu or go to the website at: <http://www.webster.unl.edu/home>