April 29, 2014 – We are now 14 days out from the sub-freezing temperatures experienced across the state on April 15 and freeze injury has indeed occurred in numerous locations around the state. As with many freezes, the degree of injury varied dramatically with crop maturity and location. The highest percentage of damage in the Blacklands occurred north and west of Hillsboro, TX. One field I walked through was on a slope. Wheat at the bottom of the hill had approximately 50% blank heads, while the top of the hill had closer to 10%. Developing seeds also showed indications of damage with a shrunken or discolored appearance. Some kernels contained a watery liquid, rather than a healthy, milky white substance when squeezed open. Another field in Bosque County was completely frozen out according to the county agent. Most wheat in the southern Blacklands is at flowering to milk stage.

As expected, most of the wheat acres across the Texas Panhandle remained largely unaffected by the freeze with only minor leaf burn observed in spots. Irrigated wheat looks good with the most advanced fields around flag leaf emergence. Many dryland fields are already dead from drought. Some hail damage was reported from storms in the Eastern Panhandle last week, but injury was localized and mostly on dryland fields already in poor condition, though some irrigated acres were impacted.

For the Southern High Plains, damage was variable by field, but significant injury in more advanced fields was evident. In Bailey and Parmer Counties, Dr. Calvin Trostle reported little to no injury in later planted fields that had not yet, or were just now heading. “Texas wheat fields did not demonstrate any ready evidence (heads, most recently emerging leaf), or stems and nodes that suggested freeze injury. The lack of
heading suggests these were later planted wheat fields where we would be less likely to find injury.” However, fields that were more advanced did show signs of damage. In wheat plots near Clovis, NM early maturity varieties showed between 5 and 40% dead emerging leaves even though no varieties had reached boot stage. Triticale samples from Parmer County were farther along than most wheat fields in the region and showed approximately 2/3 bleached heads on fields where approximately 50% of tillers had headed according to Dr. Trostle.

County agents (Kerry Siders and Jeff Molloy) in Cochran County noted 40-60% damaged (bleached white) heads from freeze injury on more advanced fields. Many of these fields are expected to be harvested for hay. Fields that were pre-heading did not show any obvious outwards signs of damage at the time of their report on April 21.

Farther south, wheat was in the flowering stage in many fields in the San Angelo and Brady area and damage was more widespread according to regional extension agronomist, Dr. David Drake. “[The freeze] could not have come at a worse time as fields were mostly near flowering. There are some fields that were in warm (usually higher elevation) spots, flowered earlier or were otherwise protected, that have lower damage, but not too many.” He also noted significant damage at research plots at Millersview and Brady, TX.

White wheat heads observed near San Angelo, TX from April 15 freeze. (Courtesy David Drake)

Similar findings were echoed in areas surrounding St. Lawrence, TX. Dryland wheat that was drought stressed or planted later seemed to avoid serious injury, while better looking wheat was further along and suffered anywhere from 15-90% according to county agent, Brad Easterling.
In summary, I think Texas will see an impact on total wheat production in 2014 from freeze injury; however, this amount will pale in comparison to the amount of production lost due to drought considering the amount of dryland acres being abandoned or insured out in the Panhandle and Rolling Plains. Many other fields are likely to be grazed out instead of combined as well. The 7 day outlook for precipitation looks bleak and so most of the wheat across the state will have to finish grain fill with whatever limited soil moisture is available. For more information on wheat freeze injury assessment and updated field observations by extension specialists from around the state visit [http://wheatfreezeinjury.tamu.edu/](http://wheatfreezeinjury.tamu.edu/).

**Disease and Pest Update**

Recent observations of plots and commercial fields near Hillsboro and McGregor revealed abnormally low levels of leaf rust (*P. triticina*) for this time of year. Stripe rust (*P. striiformis*) on the other hand was low to moderate in susceptible lines; however, stripe rust was fading with little active growth. Leaf rust in College Station plots got off to a slow start, but is now well past economic threshold levels. The consensus from the northern Blacklands and Rolling Plains indicate little to no rust of any kind.

**Crop Stage**

In South Texas, most of the crop is at or past the milk stage (up to soft dough) with harvest about two to three weeks away. In the southern Blacklands and Central Texas wheat is still going through seed elongation and into milk stage. Much of the northern Blacklands and Rolling Plains is anywhere from late boot through flowering, while the majority of the Panhandle is in various stages of flag leaf emergence.

For additional support contact your regional extension agronomist:

- Jourdan Bell, Amarillo – jourdan.bell@ag.tamu.edu, 806-677-5600
- David Drake, San Angelo – drdrake@ag.tamu.edu, 325-653-4576
- Calvin Trostle, Lubbock – ctrostle@ag.tamu.edu, 806-746-6101
Seven day quantitative precipitation outlook April 30 through May 7, 2014 indicates no relief in the near future for drought-stricken portions of Texas (NOAA).

USDA Texas wheat crop condition report for April 27, 2014.