

Wheat Update March 26, 2013

Cold Temperatures



Dear LSU Wheat Update Recipient:

I have received quite a few call and emails regarding the potential for damage to wheat from the cold temperatures of last night and possibly tonight. I got on line and checked temperatures around the state just before daylight this morning. The Shreveport area probably got down to 28 F for a couple of hours. Monroe probably reached about 30 F for an hour. There was a breeze most of the night and very little dew so any frost that occurred happened right at daylight and was of short duration.

I doubt that last night's temperatures caused any significant damage to wheat. Most of the state did not get quite as cool as forecast and wheat in north Louisiana is generally between the early flag leaf and late boot stages of development. Wheat at the boot stage is the most susceptible and can be damaged by 28 F if the duration is long enough (as shown in the chart below). We may have sterilized some pollen last night and there could be some heads that are partially sterile and/or have trouble emerging from the flag leaf but any yield loss should be minor. We were not at 28 F for more than an hour or two and there was a wind that should have prevented cold pockets or air from developing.

The link below is a good summary of spring freeze damage symptoms in wheat from our friends at Mississippi State. . http://msucare.com/crops/wheat/faq7_damage.html

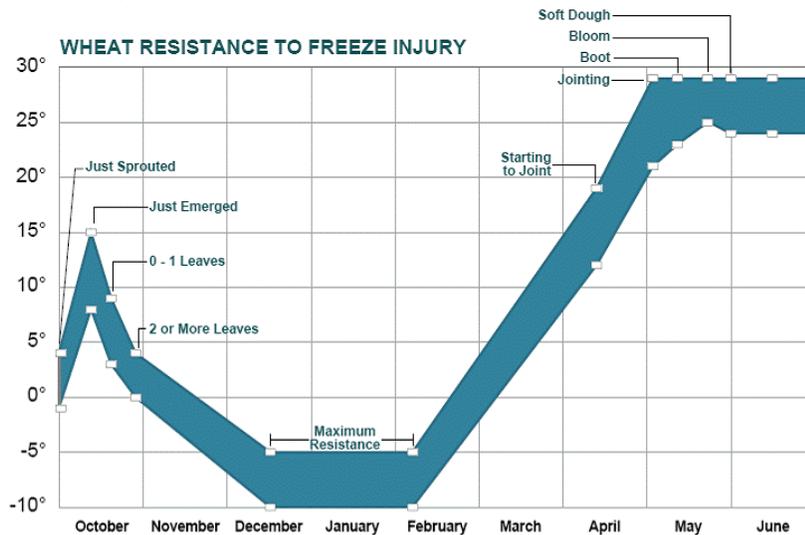


Figure 1. Temperatures that cause freeze injury to winter wheat at different growth stages. Winter wheat rapidly loses hardiness during spring growth and is easily injured by late freezes (graph adapted from A.W. Pauli).

Table 1. Temperatures that cause freeze injury to wheat at spring growth stages and symptoms and yield effect of spring freeze injury.

Growth stage	Approximate injurious temperature (two hours)	Primary symptoms	Yield effect
Tillering	12 F (-11 C)	Leaf chlorosis; burning of leaf tips; silage odor; blue cast to fields	Slight to moderate
Jointing	24 F (-4 C)	Death of growing point; leaf yellowing or burning; lesions, splitting, or bending of lower stem; odor	Moderate to severe
Boot	28 F (-2 C)	Floret sterility; spike trapped in boot; damage to lower stem; leaf discoloration; odor	Moderate to severe
Heading	30 F (-1 C)	Floret sterility; white awns or white spikes; damage to lower stem; leaf discoloration	Severe
Flowering	30 F (-1 C)	Floret sterility; white awns or white spikes; damage to lower stem; leaf discoloration	Severe
Milk	28 F (-2 C)	White awns or white spikes; damage to lower stems; leaf discoloration; shrunken, roughened, or discolored kernels	Moderate to severe
Dough	28 F (-2 C)	Shriveled, discolored kernels; poor germination	Slight to moderate

The bottom line is that we came close to having a serious problem last night but are probably OK. It will take a week or so until those heads in the boot stage emerge and we can easily detect damage. I have seen very little damage from the freeze we had on March 3 and doubt that there will be much from last night.

Despite the fact that we have had a lot of wind at night and not many prolonged dews, I have seen quite a bit of stripe rust in the Baton Rouge nursery. It looks like we will have conditions favorable for stripe rust to continue to develop over the next week. I will probably get over to southwest Louisiana (Jeanerette and Crowley) this week to rate plots and get an idea what is going on with leaf rust. Growers should continue to scout fields and spray as necessary. All topdress nitrogen should have been applied by now. The wheat crop is a mixed bag with those fields that were planted on lighter and well-drained soils being in good condition and some fields in heavier soils showing the effects of the wet winter we had.

Regards and good growing.



Stephen A. Harrison

Professor, School of Plant, Environmental & Soil Sciences
LSU AgCenter, 104 Sturgis Hall
Baton Rouge, LA 70803
email: sharrison@agcenter.lsu.edu

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