



## Crop Update:

Despite the cool temperatures so far in March, the Arkansas wheat crop is still running ahead of schedule. Late last week I was at my plots at Marianna and saw a large difference in growth stages between early and late maturing varieties (see photos below). This would be expected with a warm late winter. Growth stages ranged from Feekes 6 (first node visible) to a late Feekes 10 (boot). Statewide this growth stage range is also being seen with some fields in southern Arkansas near heading, while other fields are at approximately Feekes 7 (2 nodes visible). Most of the wheat in central and northern Arkansas appears to be at Feekes stage 6-7.



## Risk of Freeze Damage?

With freezing temperatures in parts of Northeast Arkansas this weekend and more forecast for much of central and northern Arkansas for Wednesday and Thursday morning, the questions are being asked about how cold it needs to be for damage to occur. Wheat freeze damage is highly dependent on growth stage, temperature, and duration of the low temperature. Even within a field, there can be temperature variations between the high and low areas of the field as well as growth stage differences across a field, so as you might expect, freeze damage can be variable across a field and difficult to say whether damage will occur or not. Current temperature forecasts from the National Weather Service estimate low temperatures Wednesday morning will mostly be in the mid-20's across Northeast Arkansas and mid-upper 20's to near freezing as far south as Helena, Brinkley,

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# ARKANSAS WHEAT



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Hazen, and the Arkansas River Valley in western Arkansas. With these forecast temperatures and estimated growth stages, freeze damage could occur, especially on the more advanced fields. The table below (from the Spring Freeze Damage to Kansas Wheat, <http://fieldcrop.msu.edu/uploads/files/Knsas%20freeze.pdf>) shows what low temperatures and duration of cold is needed to be injurious to wheat at different growth stages. For much of our wheat, temperatures between 24-28 degrees could be damaging. Heading to flowering is the most sensitive stage and most damaging for freeze damage to occur.

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

<b>Growth stage</b>	<b>Approximate injurious temperature (two hours)</b>	<b>Primary symptoms</b>	<b>Yield effect</b>
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

If freeze damage does occur, it will take several days of warm weather and good growing conditions to see the full extent of any damage. Freeze damaged leaves may be seen, but stem damage a few inches above the soil surface and damaged heads would be the greatest concern to evaluate for.

### Contact Information:

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