

News Column
by Greg McClure, KSU-Riley County Extension Agriculture Agent
110 Courthouse Plaza
Manhattan, KS 66502

For Release 05/01/17
Phone: 785/537-6350
Fax: 785/537-6353

FREEZE INJURY?

I grew up on a farm and I started either helping or getting in the way just as soon as I could crawl. They tell me I climbed half way up the windmill tower at 18 months of age. My earliest memories are about age four, sitting at the end of the field playing in the dirt while Dad planted wheat.

Fast forward to 1980 and I was back on the farm, working part-time for my dad and farming a few acres for my great-uncle. I planted my first wheat crop in the fall of 1980. In the spring of 1981, my first wheat crop froze.

I looked it up. The temperature dipped below freezing between May 9 and 11, 1981, damaging about half the wheat in the state of Kansas. My wheat yielded 14 bushels per acre that year.

The temperature dropped below freezing in parts of Riley County last week, so we may see some injury to this year's wheat crop. It is usually pretty hard to tell initially if there is freeze damage. So, we often make a guess based on temperature and growth stage, then wait to see what symptoms appear later on.

The following table shows temperatures at which we might expect freeze damage to wheat, and the damage that can be expected.

<u>Growth Stage</u>	<u>Temperature (for 2 hours)</u>	<u>Yield Effect</u>
Tillering	12 F	Slight to Moderate

Jointing	24 F	Moderate to Severe
Boot	28 F	Moderate to Severe
Heading	30 F	Severe
Flowering	30 F	Severe
Milk	28 F	Moderate to Severe
Dough	28 F	Slight to Moderate

Locally, wheat was just starting to head last week when it got cold. If it didn't drop below 30 degrees Fahrenheit for two hours, there shouldn't be damage. If there is damage, the symptoms will appear later.

With freeze damage at heading, or when wheat is flowering, we would expect some floret sterility, white awns or white spikes, and some leaf discoloration. Near harvest time parts of heads may be blank and white, while the rest of the head will produce grain.

On the hill where I live, the temperature got just cold enough to leave frost on the windshields, a really thin layer of ice on the water buckets, and ice in the water hoses. I don't think it was cold enough to damage the wheat.

As you know, it is always colder in the low spots. If you're looking for damage, check the low areas first – down by the creek, or just a depression in a field. That's where you'll be most likely to find damage, if there is any.

If you have questions, you can reach me at the Riley County Extension Office at 785/537-6350. Or, you can send e-mail to gmcclure@ksu.edu.

K-State Research and Extension is an equal opportunity provider and employer.