



**COLORADO STATE UNIVERSITY
EXTENSION**

Colorado State University Extension Golden Plains Area Extension

*Contact: Todd Ballard
Title: Area Extension Agronomist
Phone: 970-474-3479
E-mail: todd.ballard@colostate.edu*

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Agronomy Agent's Corner #17

Todd Ballard

Evaluating Winter Kill

Cold damage to wheat can occur in the right set of conditions. If temperatures drop below freezing for an extended period, the temperature of the soil surrounding the growing point will fall as well removing valuable heat from the growing point. Ice crystallization inside of cells will burst their cell walls. To recognize this damage, pull up a few plants and check for two signs of living plants. First cleaned roots should be white. Second a cross sectional view of the growing point should show a white fleshy "button" within the growing point only if it is healthy. A damaged growing point will be off-white or brown in color and signifies severe injury. Brown coloration beyond the growing point is an indication that means an infection has started from burst cells allowing bacteria into the plant. This infection is commonly fatal.

Optimism can be found despite the severe cold. The coldest temperature at Haxtun of -26^o F occurred on February 14th when six inches of snow were present on the ground. This snow provided insulation for the soil to prevent a deep freeze underground. Early planted wheat should do better than wheat planted later in the season. The 2020 planted wheat got a slower than normal start due to the drought conditions. Much of the late planted wheat's winter hardiness potential was not realized due to the combination of late planting and slow fall development.

Leaf burn will occur. Observing the aboveground growth has browned is not a sign that the wheat has been killed. Waiting seven to ten days after the observation of leaf burn to look for signs of life will give a more accurate review of how much winter kill occurred. Checking immediately will not allow time for the roots to brown or the infection in burst cells to grow to a visible extent.

If you need assistance in evaluating winter kill in your wheat field, please contact myself at the Sedgwick county office: 970-474-3479.