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# First hollow stem in wheat triggers grazing decision

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If you use a dual-purpose wheat system of grazing and grain production, detection of the development of wheat's first hollow stem is critical to gauge when to remove cattle from grazing. If you remove cattle too soon, prior to first hollow stem development, you will lose cattle gain. If you wait too long past first hollow stem, you will reduce grain yield potential.

Typically, first hollow stem will occur from February to early March. The timing of first hollow stem can vary as much as three weeks from year to year. This makes scouting fields for determination of first hollow stem important. Increasing day length and temperature are the big signals for wheat to switch from vegetative production to reproduction, but these are influenced by variety, planting date, soil fertility, soil moisture and grazing.

Wheat has reached first hollow stem when there is 5/8 inch or about the diameter of a dime of hollow stem below the developing wheat head (Figure 1). Detection of first hollow stem is easy, but it is important to look at wheat that has not been grazed to make the determination. Grazing delays first hollow stem occurrence, meaning that by the time you detect first hollow stem in grazed areas, you may be well past the time when cattle should have been pulled off.

*Figure 1. First hollow stem in wheat*

Pull up several plants or select the largest tillers from several plants and cut them off slightly below the level of the soil at the very top of the roots. Collect the largest tillers, take a sharp knife or blade, and split the stem lengthwise a few inches up, starting at the base of the tiller. Look for the developing wheat head in the stem of the tiller. It is the somewhat bullet-shaped structure pushing up through the stem. The stem below the seed head will be hollow, which is then measured for length.

The effect of grazing past first hollow stem on grain yield will vary based on environmental conditions for recovery after grazing and the intensity of grazing. Data from Oklahoma State University (OSU), based on the combined results of two research studies, show that grazing ▸

five days past first hollow stem can reduce grain yield by 13 percent (OSU Fact Sheet AGEC-265).

For operations that have had the opportunity to produce both stocker gain and grazing, it has seldom paid to graze past first hollow stem, due to reduction in grain yield. In years when cattle prices are high and wheat prices low, additional returns can be made from cattle by continuing to graze past first hollow stem. For 2014, that decision may be tougher to make with both high grain prices and record-setting feeder cattle prices. To help make the decision to either pull cattle off of wheat at first hollow stem or to graze past it for additional weight gain, OSU has developed a Grazeout Decision Maker program. This Excel spreadsheet can be downloaded at http://agecon.okstate.edu/faculty/publications/3443.xlsm. It consists of four parts: producer information, cattle information, wheat information and results. This spreadsheet is easy to use, customizable to your inputs and can generate financial results to help you make the decision of grazing termination or continuation. ■