



THE OHIO STATE UNIVERSITY

COLLEGE OF FOOD, AGRICULTURAL,
AND ENVIRONMENTAL SCIENCES

Hardin County Extension News Release

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Evaluating Wheat Stands

Hardin County – Between planting in the fall and Feekes 4 growth stage (beginning of erect growth) in the spring, winter wheat is vulnerable to environmental stress such as freezing temperatures with limited snow cover, saturated soils, and freeze-thaw cycles that cause soil heaving. All of which may lead to substantial stand reduction, and consequently, low grain yield.

However, a stand that looks thin in the spring does not always correspond to lower grain yield. Rather than relying on a visual stand assessment, farmers should estimate the yield potential of their winter wheat crop by counting stems, before deciding whether a field should be destroyed and planted to corn or soybean. However, many farmers do not count wheat stems because the measurement is tedious.

An alternative method to evaluate wheat stand is fractional green canopy cover (FGCC). Fractional green canopy cover can be used to measure the canopy surface area using the mobile device application Canopeo. The app can be downloaded for free at <http://www.canopeoapp.com>.

Wheat Stem Count Methods: Wheat stems (main stem plus tillers) should be counted at Feekes 5 growth stage (leaf sheaths strongly erect) from one linear foot of row from several areas within a field. An average of these counts is then compared to a table that estimates grain yield based on the number of stems. Research shows that fractional green canopy cover methods estimate wheat grain yields better than stem counts.

Fractional Green Canopy Cover Methods: Fractional green canopy cover should be measured at Feekes 5 growth stage using the mobile device application Canopeo. The smartphone camera should be held at a height to capture three rows of wheat horizontally in the image. An average of these app readings is then compared to a table that estimates grain yield based on the percentage of canopy cover. Fractional green canopy cover methods should be conducted prior to Feekes 6 growth stage (first node visible).

After counting the number of wheat stems or measuring FGCC, the table can be used to estimate wheat grain yield. For example, if an average of 51 stems is counted from one-foot length of row, the predicted grain yield would be 100 bu/acre. Similarly, if the average FGCC measurement was 35%, the

predicted grain yield would be 100 bu/acre. The table is provided with this article and can also be obtained at the Hardin County Extension office.

Article written by Dr. Laura Lindsey, OSU Extension, Soybean and Small Grains Specialist, edited by Mark Badertscher – OSU Extension, Hardin County.

Wheat Stand Evaluation		
<u>Grain Yield</u> <u>(bu/acre)</u>	<u>Stem Count</u> <u>(# per foot of row)</u>	<u>FGCC</u> <u>(%)</u>
85	27	17
90	34	23
95	42	29
100	51	35
105	63	41
110	80	47
115	100	53
120	---	59
125	---	65
130	---	71