

Hardin County Extension News Release

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Winter Wheat Stand Evaluation

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 saturated soils and freeze-thaw cycles that cause soil heaving. All of which may lead to substantial stand reduction, and consequently, low grain yield. This year, many areas of Ohio have been wet and wheat plants look poor. However, a stand that looks thin in the spring does not always correspond to low grain yield. Rather than relying on a visual assessment only, we suggest counting the number of wheat stems to help estimate wheat grain yield.

When using the Wheat Stem Count Method, 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. In Ohio, Feekes 5 growth stage is generally early to mid-April, depending on the weather and location within the state.

After counting the number of stems from several areas within the field, calculate the average. Then, a person can estimate wheat grain yield. For example, if there were 20-39 stems in a linear foot of row, median yield is estimated to be 78 bushels per acre with a range in yield of approximately 65 to 85 bushels per acre.

If there were 40-59 stems in a linear foot of row, median yield is estimated to be 79 bushels per acre with a range in yield of approximately 62 to 92 bushels per acre. If there were 60-79 stems in a linear foot of row, median yield is estimated to be 97 bushels per acre with a range in yield of approximately 82 to 108 bushels per acre.

If there were 80-99 stems in a linear foot of row, median yield is estimated to be 102 bushels per acre with a range in yield of approximately 88 to 114 bushels per acre. If there were 100-

119 stems in a linear foot of row, median yield is estimated to be 104 bushels per acre with a range in yield of approximately 90 to 115 bushels per acre. If there were 120-139 stems in a linear foot of row, median yield is estimated to be 103 bushels per acre with a range in yield of approximately 101 to 123 bushels per acre.

While stand assessment methods can be useful, there are limitations. These yield estimates are made at Feekes 5 growth stage to allow time to plant an alternative crop such as corn or soybean. However, a large portion of the growing season still remains after Feekes 5. Stand assessments may predict high yields, but late-spring freezes, hot/dry conditions at grain fill, or disease may limit yield later in the growing season. Conversely, in some years, stand assessment may predict low yield, but yield could be high if growing conditions are favorable (low disease and long grain fill period).

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