



WHEAT WATCH

Yield Estimation in Spring Wheat

In wheat, yield estimation can be done as early as stem elongation. The growth point develops the head during stem elongation, and a yield estimate can be done by cutting open the plant and counting the double ridges on the developing head and multiplying by 3. Environmental factors, such as intense heat, can heavily influence the number of spikelets that form and fill, therefore the more accurate time to preform a yield estimate is after head emergence.

Yield Calculation

$$\text{Yield (bu/ac)} = (\text{\# of heads per ft}^2) \times (\text{\# of kernels per head}) \times \text{TKW} \times 0.0016$$

To perform a yield estimate:

1. Select an average area of the field.
2. See the table below to determine the length of row to count based on your row spacing. Count the number of heads/ft² of row.

Length of row required to count heads per ft² based on row spacing

Row Width (inches)	Row Length (inches)
6	24.0
7	20.6
8	18.0
9	16.0
10	14.4
11	13.1
12	12.0
13	11.1
14	10.3

3. From the length of row, select 5 representative heads and count the kernels per head. This can be done by hand threshing and counting the exact number of kernels, or through estimation. You can estimate





kernels per head by counting spikes on the head and assuming 2-2.5 kernels per spike. This number will be less under high stress conditions such as drought and extreme heat. Top and bottom spikes shouldn't be counted as they do not contribute to yield.

- a. Take the average # of kernels (# of kernels in 5 heads/5)
4. Estimate Thousand Kernel Weight (TKW). This can be challenging- TKW can be influenced by cultivar, growing conditions, disease and pests. You can use the Saskatchewan seed guide or a seed lab report to estimate this number; increase or decrease based on environmental conditions. Poor conditions such as extreme heat, drought, severe weather events, insects and disease can decrease TKW.
5. Complete the yield estimate in 5-8 representative locations across the field for a more accurate yield estimate. Take the average of all sample sites for the field yield estimation.

Source: The Growing Point: Yield Assessment Guide. Alberta Wheat Commission

