

BETWEEN THE ROWS[®]

Performing Yield Estimates

Wyffels.com

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In late summer and early fall, many corn growers evaluate fields and make yield estimates either for storage or marketing purposes. Estimating yield can be difficult since weather conditions can result in highly variable yield differences within a field. To improve accuracy of yield estimates, multiple samples need to be taken throughout a field.

Estimate on a whole field basis

When conducting whole field yield estimates, the Yield Component Method is commonly used and is calculated by:

$$\frac{\text{\# of harvestable ears per ac} \times \text{\# kernels per ear}}{\text{\# of kernels per bushel}} = \text{Yield (bu/ac)}$$

This yield estimate is best done at least 3 weeks after pollination when kernels are in the milk stage (R3) and beyond.

Kernels per bushel

The number of kernels required to make a bushel can be highly variable among hybrids and growing conditions. Typically, 90,000 kernels per bushel is used as an average, though hybrid differences are known to vary by over 30%.

Each year Wyffels research calculates the number of kernels per bushel (kpb) for each genetic family (see table on page 2). This factor will vary based on the growing conditions each year. For instance, kernel size tends to be smaller in lower yield environments which increases the kpb factor. Conversely, kernel size is typically larger in higher yield environments due to ideal conditions during grainfill, thus the kpb factor is smaller.

Although the exact number of kernels per bushel for each hybrid will vary each year based on crop conditions, the relative differences between hybrids will remain fairly consistent. So, even in more variable conditions the listed kernel per bushel factors will serve as a great tool to see differences between hybrids when performing yield estimates.

Yield estimate protocol

Use the following protocol to ensure more accurate estimates.

Ear counts

- Measure 1/1000th of an acre in one row (17'5" for 30-inch rows) and count the number of harvestable ears present. Do not rely on planting population as not all seeds likely emerged and every plant might not have an ear.
- Take several ear counts across the field to represent all the conditions present. Don't just hit the garden spots. In fields impacted by heat and drought or that have reduced stands, ten or more samples will be needed to ensure reasonable representation of the entire field.

Kernel counts

- Collect 3 to 5 ears in each harvestable ear count.
- Collect every 7th ear to get an unbiased, representative sample.
- Count and multiply the number of kernel rows around by the number of kernels in a row for each ear. For example: 16 kernel rows around x 34 kernels per row = 544 kernels/ear.
- Average the kernel counts across the ear samples.

Calculate yield

- Plug in the harvestable ears per acre and kernels per ear into the above formula
- Plug in the kernel per bushel factor for listed hybrids. If the hybrid is not listed, use 90,000 kpb for average sized kernels, 110,000 kpb if kernels are small, and 70,000 kpb for large kernels.

Wyffels Yield Calculator

In order to make yield estimates easier and more efficient, Wyffels has developed an online yield calculator. The Wyffels Yield Calculator can be found on the Wyffels.com website under the Agronomy tab. This calculator has been pre-programmed with all of the specific hybrid factors for hybrids in the Wyffels lineup. There is also a yield environment option to account for kernel size variability. To use the calculator, [click this link](#).

YIELD FACTOR Important note on hybrid kernel factors: These factors represent an average observation for each hybrid, and will be most accurate in yield environments of 210-250 bu/A.

	YIELD ENVIRONMENT (bu/A)		
	UNDER 200	200-250	OVER 250
W1356	94	82	76
W1487*	86	75	70
W1599	85	77	73
W1676	92	82	77
W1758	88	77	71
W1826	96	83	76
W1869	89	79	74
W1988	95	83	77
W1996	87	76	70
W2105*	86	75	70
W2386	86	75	70
W2446	89	78	72
W2557	93	82	76
W2629	85	75	70
W2674	84	73	67
W2867*	79	69	64
W3095	80	69	63
W3286	85	74	68
W3299*	80	70	65
W3309	79	70	65
W3576	76	68	64
W3654	82	72	67
W4025	85	75	70
W4246	85	75	70
W4439	79	69	64
W4487	80	72	68
W4514	86	75	69
W4545*	83	73	68
W4889*	93	82	76
W5086	83	72	67

	YIELD ENVIRONMENT (bu/A)		
	UNDER 200	200-250	OVER 250
W5129	89	78	73
W5406	84	73	67
W5610*	83	73	68
W5684	81	71	66
W5735*	78	68	63
W6110	84	74	69
W6215	80	72	68
W6479	91	80	74
W6505	78	67	62
W6644*	84	74	69
W6886	82	71	65
W7048	76	67	63
W7170	80	71	66
W7208	89	77	71
W7229*	81	71	66
W7424	78	71	67
W7485	75	66	62
W7499	80	70	65
W7544*	80	70	65
W7759	83	72	67
W7819*	76	67	62
W7876	76	67	63
W7888	86	75	70
W7945	80	71	67
W8007	80	72	68
W8086	75	66	62
W8134*	79	69	64
W8700*	72	63	59
W9097*	83	73	68
W9218	80	70	65

* Kernel factors for new hybrids are estimated.

Summary

No matter how detailed you are with this process, remember that you are performing an estimate. To improve accuracy, increase your sample number throughout the field. Using the kernels per bushel factor for each hybrid will help fine tune estimates for your Wyffels products. And using the online Wyffels Yield Calculator will help reduce mathematical error.

From the desk of



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