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 corn storage or marketing purposes. Estimating yield can be difficult since weather conditions at various stages of growth can result in a highly variable crop appearance and differences in yield. Obtaining accurate yield estimates requires multiple samples 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:

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

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

Perform estimates for each specific hybrid

Wyffels research has documented the number of kernels per bushel for each hybrid (listed on the chart, page 2). This factor has been updated with 2022 data with newly released hybrids. Not all hybrids have yield factor data available. Products from the same genetic family use the same yield factor. This factor can vary based on the growing conditions each year. Hot and dry conditions can cause smaller kernel size which increases kernels per bushel. These factors should serve as a good baseline for accurate yield estimates for each genetic family.

If seed set is scattered on the ear, the kernel size may increase thereby decreasing the number of kernels per bushel. In fields impacted by heat and drought or that have reduced stands, more samples will be needed to ensure reasonable representation of the entire field. This yield estimate is best done at least 2 weeks after pollination at the milk stage (R3) and beyond.

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

Take Samples

Use the following protocol to ensure more accurate estimates.

1. Measure 1/1000th of an acre in one row (17'5" for 30-inch rows) and count the number of harvestable ears present.
2. Collect every 7th ear to get a representative sample.
3. 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.
4. Average and record the kernel counts of at least 3-5 ears in each harvestable ear count to determine average ear size (kernels/ear) in that location.

   Do several harvestable ear counts across the field to represent all the conditions present. Ten or more locations may need to be sampled in a field that's variable.

5. Plug in ear and kernel counts into the above formula to arrive at the estimated yield. Dividing by 90,000 kernels / bushel is an average that many growers use. For specific hybrids, use the factor listed below in the calculation.

This yield calculation uses actual harvestable ear counts, so low stand counts are accounted for in the estimation. An accurate ear count is very important for good estimates. Simply using the planting rate will overestimate yield.

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. 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.

Genetic Family	Factor	Genetic Family	Factor
W1306	84	W5518	73
W1468	75	W5778	72
W1528	79	W6215	69
W1546	80	W6408	76
W1548	79	W6826	72
W1588	73	W6886	72
W1636	80	W6898	77
W1758	75	W6906	72
W1787	80	W6935	66
W1826	77	W6956	72
W1996	72	W6978	74
W1988	80	W7048	66
W2016	80	W7198	71
W2086	79	W7208	77
W2196	78	W7338	69
W2198	78	W7368	73
W2236	76	W7416	66
W2276	80	W7456	66
W2446	78	W7510	66
W2506	76	W7536DG	76
W2595	75	W7578	70
W2618	84	W7696	72
W2648	74	W7726	75
W2656	78	W7736	81
W2629	72	W7759	72
W3018	78	W7806	79
W3286	76	W7878	66
W3309	72	W7888	75
W3488	79	W7945	68
W3576	68	W7956	64
W3579	69	W7976	73
W4025	74	W8086	66
W4196	70	W8108	76
W4246	76	W8148	69
W4358	72	W8228	77
W4588	72	W8306	68
W4796	74	W8646	69
W5019	72	W8918	71
W5086	72	W8936DG	68
W5406	77	W9218	70

What about Lodging?

If the field has evidence of root lodging, some additional calculation may be necessary to account for additional yield loss. Root lodging can reduce yields, but the stage of growth has an impact on the amount of actual loss. Root lodging at early vegetative growth stages (before V10-V12) may cause yield reductions of 0-5%. When root lodging occurs at R1 and beyond, yield reductions range from 10-30%. The actual yield lost by root lodging is impacted by weather conditions and other agronomic factors that occur after damage is present.

Stalk lodging can also cause yield loss. Some estimates indicate about 1/3 of stalk-lodged plants may be lost at harvest. Some of these losses may occur after a yield estimate is made. You may want to account for this possibility in your estimate.

Summary

Estimating yield can be difficult and variable. Increasing the number of ear samples and thoroughly covering the field will ensure the best estimates. Using the specific hybrid factor for each hybrid will help you fine tune estimates for your Wyffels products.

From the desk of

Jared Goplen
Agronomy Manager

507.829.0614 cell
jgoplen@wyffels.com

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