CROPLAN By WINFIELD UNITED

MidWeek Review

Yield trial data: Where do you start?

Variety	BU/Acre	BU/ACRE RANK	H2O%	$/Acre
Variety A	81.2	Winner 1	14.3	730.50
Variety B	75.7	2	12.4	680.96
Variety C	74.8	3	13.4	673.02
Variety D	74.6	4	12.2	671.14
Variety E	74.3	5	13.1	668.26
Variety F	74.0	6	12.0	666.31
Variety G	72.8	7	12.9	655.11
Variety H	72.7	10	13.0	654.31
Variety I	72.7			
Variety J	72.7			
Variety K	72.4			
Variety L	72.0			
Variety M	72.0	13	13.8	647.77
Variety N	71.4	14	12.7	642.23
Variety O	71.3	15	13.1	641.78
Variety P	71.3	16	12.7	641.53
Variety Q	71.0	18	12.4	639.26
Variety R	71.0	17	12.5	639.41
Variety S	70.9	19	12.6	637.93
Variety T	70.8	20	13.6	637.61
Variety U	70.7	21	13.3	636.14
Variety V	70.4	22	12.6	633.38
Variety W	70.0	23	12.6	630.04
Variety X	69.5	24	12.2	625.46
Variety Y	69.0	25	12.2	620.81
Variety Z	68.3	26	12.1	615.00
Variety AB	68.0	27	12.1	612.09
Variety CD	68.0	28	13.5	611.63
Variety EF	67.2	29	12.6	604.85
Variety GH	67.1	30	12.7	604.27
Mn	**71.6**		**12.8**	**644.32**
CVErr	**3.955**		**2.302**	**3.956**
LSD(.10)	**4.8**		**0.5**	**43.26**

Statistically the same

How do you know when a "winner" is a "winner?" First, think about if 2 products have the same yield potential and you have them side by side in a field. Just like flipping a coin, the odds of either one winning is 50%. If you toss a coin 10 times, you won't always get 5 heads and 5 tails though, right? There will be some variance. Now, assume a product has a 5 bu./ac. advantage vs. another product. It will win more frequently than the less superior product, but it's not assured to win every time. No product, even one's known to be elite & superior, will win every yield plot. Often, these products will only have 60-65% winning percentages against the next best product because of environmental factors, different genetic responses, and management strategies.

So how do find the winner in a yield trial, and not just head to head comparisons? Statistical differences tell the story the best. You are about to be bombarded by yield trial data this fall. Use things like LSD and CV's to sort them out. The first thing I look at with yield results is the CV, or coefficient of variation. A large CV indicates lots of variability, less stability or less uniformity in the data of the trial. A small CV indicates less variability or more uniformity in the data. No set of trials will have a CV of 0. Our goal is to have a CV of less than 10, indicating good consistency across the field trials, and single location Answer Plot® trials, often come in around 4-7 % CV.

Next, I look at LSD's, or Least Significant Difference. It describes the difference in yield products must have to be statistically different from each other at a certain confidence interval. LSD (0.10) =4.8 on the bottom left means we're 90% confident we can replicate the data to show it requires 4.8-bushel separation between 2 products for one to be superior to the other. In the table to the left, Variety A is statistically the #1 product, but the LSD says Variety B-S are the same since they're within the LSD of each other!

CV: percentage of variation in a trial that is unexplained. Universal statistic that can be used to compare trial error across different trials and data sets, allowing for apples-to-apples comparisons of trial error.

LSD (# of bushels): least difference between two means of hybrids or products in a set of data that we can say with high probability they are different considering the amount of error in the trial.

An idea for interpreting yield data:

1) Use LSD's and CV's to determine statistical differences and reliability (*LSD really high? CV > 10? Be cautious*).

2) Evaluate many locations and environments

3) Utilize prescriptive data like WinField United CHT charts, not descriptive data like side-by-side trials, to make insights on 2018 placement.

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