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Correct Hybrid/Variety Choices – How to choose wisely?

By Shawn Damen, CCA

As corn and soybean farmers sort through the “mountain” of trial information and hybrid/variety data now available, it is certainly understandable that after attempting to digest this information they may feel even more confused and have more questions regarding the correct hybrid/variety choices for their farm. This update will attempt to explain the differences in trial data sources available for Ontario corn and soybean growers and identify the steps that may assist growers to “choose wisely”.

In a Wisconsin survey, corn growers ranked the following sources of information as the five most useful when choosing corn hybrids:

1. Results of yield tests on their farm
2. Corn company tests on their farm
3. Test results close to their farm
4. University/Government trials i.e. Ontario Corn Committee (OCC Trials)
5. Information from corn company dealers and agronomists

With this many potential sources of data, how can we identify the correct hybrid choice?

During the past 40 years, the genetics of corn hybrids have steadily improved, with increases in grain yield potential ranging from 0.7 to 2.6 percent per year. Considering this information, we are faced with an interesting dilemma when using yield trial data to select hybrids.

Most researchers would agree that data becomes more reliable as we add locations and years.

However, keep in mind that each year of data we add makes the hybrid that much further behind the newer genetics entering the system. Many sources suggest that utilizing two years of data from two or more locations per year may be the best balance between yield stability and capturing the higher yield potential of new genetics. Corn germplasm is changing so rapidly that waiting for a third year of data can often be a costly mistake.

Identifying differences within a trial and different locations is an often overlooked but very important part of the hybrid evaluation process. Variations in yield in a trial are a result of differences in soil type and quality, and other variables that may conspire to lower the precision of the results. Using statistical analysis tools such as LSD (Least Significant Difference) make it possible to determine whether the yield difference between hybrids/varieties is real or whether it may have occurred by chance. It also provides a measurement of the overall “quality” of the information within the plot and allows poor plots to be sorted out while improving overall confidence with data presented.

The Ontario Corn Committee does present LSD values at the bottom of each table for each plot location. Consider this example:

Hybrid A - yield index of 105
Hybrid B - Yield index of 102
LSD for this trial is 5

Using this information, there does not exist any statistical

difference between these two hybrids – they should be considered as equals due to the inherent variability that existed in this trial. Had they differed by more than 5 we could be more confident that Hybrid A for example had superior yield results versus Hybrid B. Where the difference between two selected hybrids within a column is equal to or greater than the LSD value at the bottom of the column, there is a real difference between the two hybrid averages. If the difference is less than the LSD value, the difference may still be genuine, but the trial has produced no evidence of real differences. Using this same mindset, when evaluating on farm plots or plots nearby, will allow you to sort out the plots that due to variability or poor plot set-up really should not enter into your hybrid decision-making plans.

Finally, while yield is often the first factor considered when choosing a new hybrid do consider other key factors such as maturity when making your selections. As this year has certainly demonstrated, hybrid maturity can be very important as it has a direct effect on crucial components of yield such as, harvest moisture and the chances of having to deal with immature, poor quality and yielding corn in a shortened growing environment. Factors that certainly should also be utilized when choosing between hybrids/varieties include insect resistance, stalk quality, herbicide tolerance and disease tolerance as well as incorporating genetic diversity into your seed choices.

Sources:

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This industry driven program helps ensure that Ontario crop producers are well served by those providing their crop production advice. This article was written by one of those CCA's.