

PLANTING TIME TIPS FOR ON-FARM COMPARISONS

Keeping it specific, simple, similar when comparing fertility programs, crop genetics.

With a plethora of new crop genetics and new plant nutrition products on the market, producers often conduct on-farm comparisons to see which provides the greatest improvement in production and profitability on their own farm. To get an accurate comparison, it's important to compare apples to apples and that is where ag retailers and crop consultants can be extremely valuable. Keeping the experiment specific, simple and similar will help ensure the answer at harvest provides usable information.

"When a grower compares two products in on-farm trials, it's important to address the field's spatial variability. This is usually done by replicating the trial several times across the field," said Matt Wiebers, agronomy research lead at the Mosaic Company. "A good place to start is with fields that have good crop records, including soil tests, crop rotations and any other management factors that can significantly influence yield across the field. The use of precision farming tools makes it easier to establish the test areas than in years past.

"Lay out the research with harvest in mind," Wiebers said. "The replicated strips or 'treatments' need to be wider than the harvesting equipment to accurately measure the effect of each treatment using GPS yield monitors or a weigh wagon." On-farm experiments generally compare two different products or practices, such as fertilizer, seed, fungicide or tillage. One of the most common experiments growers conduct on-farm includes splitting the planter or drill in half to compare different varieties or hybrids. Four strips of each treatment through the field are suggested to provide enough data at harvest for a statistical comparison.

"It is important to manage or eliminate as many yield-limiting variables in the comparison as possible so that the results are truly an indication of performance of the two products being compared," Wiebers explained. "For example, when comparing the benefits of a new product such as MicroEssentials to a fertilizer blend containing the same analysis for phosphorus, nitrogen, sulfur and zinc, the other nutrient needs within the field must be balanced."

Wiebers gives these additional tips for harvesting an on-farm comparison. These are basics that should be shared with growers before planting and again before harvest.



PHOTO COURTESY OF ZIMMCOM

Much of the accuracy for on-farm field trials has to do with establishing plots that can be identical in the comparison rows harvested and the accuracy of the harvesting equipment.

- Throughout the season scout the field periodically and collect an aerial photo if possible. This allows post-harvest comparison to help explain unusual yield results. Crop loss due to standing water or drought can heavily influence the final yield results.
 - Harvest fields containing on-farm research trials after you've spent several days harvesting other fields. This ensures the combine is fully adjusted and working well and that the yield monitor and GPS are also calibrated and operating correctly.
 - Eliminate yield data from headlands, end rows and point rows where compaction or other yield-limiting effects can influence the results.
 - In comparisons with corn, be aware of the location of Bt refuges, since the yield can be affected in those areas.
 - If comparing treatments where fertilizer was spread with a spinner, consider that the overlap area from an adjacent pass could include the other product and exclude this area from your comparison.
 - When collecting GPS yield monitor data, use only one combine to harvest the comparison area. This process simplifies the analysis of the data.
 - When possible, use the raw yield monitor data from the card before it has been processed by another mapping program.
 - Download the data as soon as possible after harvesting the field to ensure data isn't lost or erased from the card.
 - Work with your local agronomist, crop consultant, university Extension, or ag retailer to evaluate the data and complete the final product comparison. **AG**
- Article provided by Mosaic Company.*