

# Planting Time Tips For On-Farm Comparisons

*Keep it specific, simple, similar when comparing fertility programs, crop genetics*

**PLYMOUTH, MINN.**

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. 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," says 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," says Wiebers. "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," explains Wiebers. "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."

MicroEssentials is a phosphorus-based fertilizer which incorporates the correct ratios of critical nutrients (P, N, S and Zn) into one uniform granule. The one granule formulation ensures all nutrients are distributed uniformly and consistently so every plant has a better shot at getting the essential nutrients it needs to produce

the best results.

"When conducting on-farm comparisons, be sure to control other factors which may influence yield, such as weeds and insects," Wiebers continues and gives these additional tips for harvesting an on-farm comparison.

- 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, university extension, or crop input retailer to evaluate the data and complete the final product comparison.

"By following a few common-sense practices, growers can leverage their investment in precision ag technology to make valid comparisons on their own farms so they can see first-hand how a new product performs in their fields," Wiebers concludes.

The MicroEssentials family of products includes three formulations, each is appropriate for specific crop needs. It is a versatile product that works well as a starter, a direct application fertilizer or bulk blend ingredient. For more information visit [www.microessentials.com](http://www.microessentials.com) or contact your local Mosaic fertilizer dealer.     Δ



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