On-farm test plots: Why and how

There are plenty of new, proven crop protection products out there—all of which come with yield advantages, improved return on investment, increased efficiencies, more flexibility and so on. So how do farmers decide which new products to use on their acres?

"It's beneficial for farmers to conduct their own evaluations to determine how products perform with their specific combination of management factors—including soil, pests, crop genetics and climate conditions," says Mike Moechnig, Field Scientist, Corteva Agriscience. "In addition to product performance, it's also useful to know if the product's storage and handling characteristics are compatible with your management program and equipment."

Enter on-farm test plots

New crop protection products are thoroughly tested to verify a base level of performance, crop safety and compatibility with equipment. However, it's impossible to account for all scenarios. This is where on-farm test plots come into play. Replication of product performance with test plots will help ensure the results farmers are seeing are not just an anomaly and provide an expectation for crop's response range. "While farmers are often most interested in simply seeing if a product can provide an improvement, they also need to ensure some level of confidence in those results," Moechnig says. "Replication is the primary means of developing some probability that those results would be repeatable and thus provide confidence in the conclusions."

Test plot replication can be achieved with:

- Two or more treated strips in a field
- Adjacent treated and untreated areas in multiple fields
- Treatment comparisons over two or more years

"Make sure there is only one differing factor between treatments, so farmers can have confidence that the factor was most likely responsible for the result," Moechnig says. "Also, ensure that there is a fair comparison between treatments by ensuring field conditions are similar between treatments—and that products are being applied properly."

Products worth testing

Recent input costs have incentivized many farmers and retailers to look for ways to maximize the crop growth response to fertilizer inputs and, ultimately, get more yield per acre of land. "Nitrogen stabilizers and biologicals can both be used to make fertilizers more efficient," Moechnig says. "It may be worthwhile to reevaluate fertility programs and explore the effect of these types of products on fertilizer programs."

- **Nitrogen stabilizers** extend nitrogen availability during the key growth stages of corn. N-Serve® nitrogen stabilizer works with anhydrous ammonia, while Instinct NXTGEN® nitrogen stabilizer maximizes nitrogen when used with UAN, urea and liquid manure. Both products work underground, where up to 70% of nitrogen loss can occur.
- **Biological products** such as Utrisha™ N nitrogen efficiency optimizer make excellent partners with your existing farming practices. They complement the products you already trust, working with them to enhance the success of your crop.

Keep in mind that using any new product or management system will require some learning and potential adaptations in management practices. "Although most nitrogen stabilizers and biologicals are relatively easy to use, there can be limitations on tank-mix options and equipment needs—and there will be some time needed to develop an understanding of the conditions that allow for the best return on investment," Moechnig says.

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