

INDIAN CREEK FACT SHEETS

ON FARM TESTING

On-Farm Plots

One of the highlights of the six-year-long Indian Creek Watershed Project was the chance for farmers to visit (or host) on-farm demonstrations. Those demonstrations put a variety of conservation practices and products to the test in real-world, field-scale conditions, and gave farmers a chance to assess their effectiveness in their own backyard – literally.

Dr. Harold Reetz of Reetz Agronomic Services and Tim Smith of CropSmith guided the demonstration plot program throughout the Indian Creek project, helping develop protocols, oversee plot establishment and analyze data.

But even without an organized, watershed-wide program driving the effort, on-farm plots can be a powerful learning tool – and Reetz says all it takes is a little planning.

“It seems complicated, but it isn’t,” Reetz notes. “The thing where most people fall down is they do their plots as an afterthought. If it’s an afterthought, it’s usually done in a hurry and mistakes are made.”

Dr. Reetz offers these suggestions for establishing reliable demonstration plots:

- Choose your site carefully. “Make sure it represents the area you’re working with,” says Reetz. Don’t relegate a plot to your worst ground and expect it to reflect what would happen on better soil. Instead, pick a field that has the soils and topography that are typical for where you would try to fit the practice or product into your operation.
- Start simple. Stick to one variable, especially at the beginning. Does changing rates impact yields? Which hybrid yields best on this field?
- Plan replications. To get reliable results and minimize the chance that some unseen variable is impacting the data, scientists replicate their plots. For every trial plot you put out – for instance, a half rate of N – make sure you repeat it four times. Let’s say your trial has three treatments (for instance, a full rate, half rate and no N). Name each treatment 1, 2 or 3. Write those numbers on a piece of paper, put them in a hat, and mix them up. Then draw out a set of plots on a field map. Pull a number out of the hat and assign it to one of the plots on your map, writing the number in the first box. Pull the next number and assign it

to the next plot. Repeat the process of mixing and selecting random numbers until your map is full. Now your replications are randomized.

- Think about the data before you start planting. Make sure the information you get from your plots fits the sort of data table or chart you want to see at the end. Reetz suggests laying out a table in Excel first. If you had three treatments – full rate, half rate and no nitrogen, for instance – and four replications of each, would you get the data you need to fill your table?
- Use your GPS tools. “With today’s equipment, we can do plots without any measuring or staking,” Reetz points out. “Just program it into your card.”



- Organize your plot width to fit your equipment. There's no magic number for on-farm plots, so keep things simple. "If you're planting with a 12-row planter, then use 12-row plots; if you've got a 6-row planter, make 6-row plots," Reetz suggests. "Make it fit your equipment."

- Plan for rows at least 200 feet long. That gives you and your combine enough room to get into the plot and register yield. If the plot rows are too short, your grain could end up in the hopper before you even realize you've harvested the plot.

- Keep clean. Thoroughly clean your planter boxes between plots. Make sure your application equipment is calibrated and that every row is working properly.

- Pay attention! "Even though it's your objective, it's amazing how many times people forget to make the change when they get to the plot," Reetz laughs. "Pay attention and try not to make mistakes when you're out there." Make sure you know where to switch seed, rates or products, then make sure you do it.

- Ask for help. Your local extension agent is probably an expert at plot work. So is your local seed company representative. Don't be afraid to ask them for help in planning your trial.

The most important thing to remember about on-farm plots, says Reetz, is to just give them a try.

"Don't be afraid to do it," he says. "You would learn a lot about your farm that way."

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