

The Natural Farmer

On-Farm Research - Summer 2002 Special Supplement on On-Farm Research

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Farmers are always fiddling with things, trying to improve the performance of their crops, animals, and farms. The best are sharp observers who have a strong streak of persistence.

Trying out new varieties, improving pest control, and doing a better job of caring for their soil are typical subjects for such informal research. How can we test these things in ways that give us the clearest answers?

Conventional agricultural science has cut through the rich complexity of the farm, simplifying things at research facilities to the point where specific questions can be answered. But because of the simplified conditions under which they were obtained, the answers sometimes don't translate exactly to the farm environment. Particularly on organic farms, there may be systems at work that change the answers, at least somewhat.

So, how can we find answers that hold up under farm conditions? The answer is to frame good, clear questions and investigate them on the farm itself. There are various levels of rigor with which we can test our questions and obtain answers. The simplest is to lay out strips or other partial areas in an otherwise uniform field, and change only one aspect of the crop in those strips. For instance, one could ask, "Does this new micronutrient product increase crop yield under my conditions?" Apply at least four strips of the product down the field, mark their locations, and carefully examine the crop at harvest for differences in yield or quality at several locations in treated and untreated areas. Just doing this simple comparative "with and without" trial can give you key insights. It would make sense to repeat it in different fields and in different seasons.

Oddly enough, many times farmers convince themselves that "product x" is beneficial, even though they did not leave an untreated "check plot" when they tried it. Who knows, maybe the crop would have been just as good without "product x"!

For comparing several varieties or different treatments, it is best to work with a trained researcher, perhaps a cooperative extension educator or university researcher. They can help you design your trial, and also often help collect data. Taking data can be very time-consuming, including such things as counting tiny weeds or insect eggs, or measuring yields from specific plants, depending on what question is being asked. In the rush of harvest season, you may not have time to do it well without outside help. Researchers are also very good at helping interpret the results.

My Experiences with On-Farm Research

In the early 1980's, Tracy Frisch (a Cornell grad student at the time, but now with the Albany-based Regional Farm and Food Project) organized several central NY organic growers to see whether beneficial nematodes were an effective control of cabbage root maggots on our farms' brassica crops. Working with this group was my first exposure to doing research on my farm. While the results of the research were not promising, it greatly encouraged an enquiring frame of mind in me. My next project was a test of a product called "Spray-n-Gro" which was supposed to increase yields. When I sprayed it on alternating groups of cherry tomato plants, the sprayed ones actually yielded a bit less than the others. Next, I tried three treatments on a half-acre field of broccoli: seaweed spray, fish emulsion, and unsprayed control. The whole field was unsalable due to bacterial head rot (so much for monoculture!), but I took yields on the trial plots anyway. There was no heavier yield from any treatment. Around this time I studied for my Masters degree at Cornell, and learned more about agricultural experimentation.

In 1994, I applied for a USDA Sustainable Agriculture Research and Education (SARE) Farmer grant to look at whether beneficial nematodes could help to control the plum curculio in my apple orchard. At that time, this pest could not be reasonably controlled with organic methods. This was an experience that deepened my orchard knowledge and skills, even though once again the overall results were negative! However, I was successful in trapping the insects that lived in and beneath the trees and learning more about the orchard ecosystem.

During the time I worked for Cornell Cooperative Extension, I was pleased to be an advisor for a few SARE Farmer grant projects. One very interesting one was undertaken by Michael and Karma Glos. They did an intensive study of the tarnished plant bug populations on their farm. Another farmer in central NY who has had great success in his SARE Farmer research is Lou Lego, who is interviewed in this issue.

One problem with farmer-initiated research is sharing, indexing, and building on the results. Farmers are not professional researchers, so they may not be able to follow up on their studies. (Almost every research project brings up many more questions than it answers.) After an article or two in a farmer newsletter, the results may drop out of sight and be forgotten. This is different from the situation in academia, where journal articles are well-catalogued and archived. SARE projects require final reports, some of which are posted at: www.sare.org. Somebody needs to figure out a good way to combine farmer research into the overall body of agricultural knowledge.

The SARE program has done wonderful things to increase research in sustainable agriculture, and also empower farmers to do their own research. If you have an interest, I strongly encourage you to submit a project to them.