

Utility of On-Farm Research Reports

Abstract

The Ohio State University Agronomic Crops Team has published peer-reviewed on-farm research reports since 1997, with 10 years as an on-line publication. With 367 reports published to date, the Team reviewed the value and use of the material. Seven categories account for 74% of the reports, with fertility management the largest group. While some reports get widespread attention, this is often due to state specialist recognition. More needs to be done to promote the research results and the potential of the website to growers, industry, and other university users.

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Introduction

The Ohio State University Agronomic Crops Team [the Team] has published an annual summary of on-farm agronomic crops research since 1997. This was produced for 7 years in printed form as an Ohio Agricultural Research and Development Center Circular. Currently, the yearly results of the peer-evaluated reports are published on the Team website: <http://agcrops.osu.edu/on-farm-research>. Reports are posted on-line only after review and approval by the On-Farm Research Committee of the Team.

In 2012 an ad-hoc committee effort sought to understand this on-farm research resource. The committee created spreadsheets of reports across the years, performed a variety of searches via the Team website search engine, and generally arrived at a summary of the work. The committee also looked into how the data was mined.

Team members have published 367 reports of on-farm research since 1997, with 10 years as an on-line publication. On-line searches are more likely to come from high-income, large-acreage crop producers (Diekmann & Batte, 2009); this is the intended audience of the Agronomic Crops Team.

Review of On-Farm Trial Efforts

What are the reasons for on-farm trial work? Simply put, the reasons are to increase communication, to increase research capacity and to contribute to the business of production agriculture.

Benefits:

- Helps keep educators in contact with clientele
 - A regular discussion with growers assures them the university cares about their livelihood.
- Helps keep county level educators in contact with state specialists
 - Asking for assistance, passing on observations, and sharing is to the benefit of both groups in keeping up to date.
- Increases capacity and responsiveness of university research
 - State specialists work today on grants and paid industry contracts; county educators can take up local trials to check on new production practices or products.
 - On-farm trials do not require the lead time of the grant application process.
- Locates pests not found on research stations
 - e.g., Western bean cutworm, Soybean aphids, Gray leaf spot, or herbicide resistant weeds
- Compares treatments under conditions similar to what grower faces
 - Compaction; varying soil types
 - More variability can lead to different observations.
- Leads to political and financial support
 - Conversations with commodity groups now often start with on-farm trial work and discussion of results under "real" conditions.
- Builds cooperation
 - Finding that good grower cooperator and building that relationship is a strong learning situation for both parties.

On-farm research is driven locally (Mullen, Thomison, Lentz, LaBarge, & Watters, 2007) and has been identified as an important contribution to production agriculture in Ohio. From a series of fall 2011 focus groups, producers suggested it would be worth paying to have a county educator do trial work on their farm.

As of 2012, Ohio's on-farm research includes a range of trials from simple to complex systems, from as few as two treatments to up to 20 in a single trial. Across the 367 reports, research falls into several categories listed in Table 1 covering 74% of all reports.

Table 1.
Major Research Topics of Ohio On-Farm Reports

Interest area	Across all 16 years	Since 2003
	(Print and web-based)	(Web-based only)
Fertility management	33%	37%
Tillage	18%	20%
Seeding rates	13%	9%
RoundupReady Crops	10%	3%
Manure management	9%	20%
Fungicides	9%	10%
Variety testing	8%	1%
Percentages were generated using report numbers in these seven categories only.		

Fertility management continues to be the strongest category for on-farm research, with manure management increasing. Recent water-quality concerns will combine manure management and fertility management interests. Variety testing remains low, despite the great impact on yield, likely because well-managed and appreciated statewide trials cover the need. Tillage remains a relatively high category. All areas of study can be quickly responsive to producers' interests.

In conjunction with the 2012 efforts to summarize on-farm research, the question was asked: "Is data being mined from the on-farm reports?"

Some answers:

- Not up to the resource's potential for providing relevant information
 - Researchers and educators could identify new queries to pursue.
 - Information from multiple studies could be consolidated for broader distribution and incorporated into other publications.
- State specialists appear to make most use of the reports. Because state specialists often are reviewers of the reports, they become aware of results and share to wider audiences,

Producers and others use the search function to find data to meet their needs.

- Rarely used at county offices for local inquiries,
- Have incidence of over 900 hits on one single report,
- Browser search engines do find the work but require well-defined search words.

Discussion and Conclusions

So what is the real value of on-farm trials? If we account for university time and effort with 367 projects (at least 20 to 40 hours on each) including planning, travel, execution, analysis, and report writing, this adds up to 3.5 to 7 (or more) employee years since 1997. This is truly "valuable" education for Agriculture & Natural Resource educators as well as for growers.

An additional benefit for The Ohio State University, as well as for educators, is to be found within the promotion and tenure process. Extension educators moving from Administration & Professional track to faculty track must show similar teaching, research and service work as other faculty. On-farm trials can be an important component.

What can be improved? Currently, on-farm reports are grouped by year. The development of a matrix of crop by trial type would allow an easy way to view available works. Marketing of the on-farm trial report to Extension meeting attendees would drive Web views and presumably use of the reports (Wilde & Heaton, 2010).

Miller and Cox (2006) point out that producers often get their ideas from trade publications, field day events, and peer discussions and then reinforce these ideas with university research information. While the ideas come from producers for many of our on-farm trials, it is often after they have seen a product or practice in a trade journal. This suggests a need to conduct more field day activities at our on-farm trial sites so producers can see the practice under trial first hand, then follow up with reporting on the practice in trade journals and extension meetings.

A recent inquiry from a grower in western Indiana provides an example of the potential utility of on-line on-farm research reporting. The author searched the on-farm database (<http://agcrops.osu.edu/search?SearchableText=>) for trials involving a certain biological product. Found in the search were seven listings; one was a duplicate. After reviewing each of the trials, it was learned that in no case did the product increase crop yield. The information was relayed to the grower. Because the author believed there were additional trials conducted, a consultation with colleagues determined that at least seven other trials had been conducted, but because results were "non-significant" they weren't reported. The real value of the on-farm trials conducted by county educators may be that they are willing to publish trial reports even when there are no effects.

It's clear that these on-farm reports have great potential. What is required is better promotion across the grower community, within the College of Food, Agriculture and Environmental Sciences, and within the university.

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