

## Developing an On-Farm Research Network: Published Work for Peers and Producers

### Abstract

The Ohio State University Extension Agronomic Crops Team has a committee providing leadership to coordinate an on-farm research network. The network has been developed to provide needs assessment, peer review, and reporting of on-farm research. The research protocols originate from locally driven needs and stakeholder focus groups. The network includes county-based Extension professionals working with cooperating farms, county-owned farms operated by Extension professionals, and university-owned research facilities. The network uses team members for their strengths and specializations to fortify the research effort. The research results are online and searchable by Extension professionals and farmers. The team website is: <http://agcrops.osu.edu>

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### Introduction

The purpose of conducting field crop research is to provide fact-based answers to farming's challenging questions for which no previous answers exist (Nielsen, 2010). The process of testing a hypothesis and using the information gained in a cooperative, systematic manner has been highly successful in providing viable options for making production decisions on the farm (University of Wisconsin, 2006). The on-farm tests foster cooperation among farmers, educators, specialists, researchers, and industry on subjects of mutual interest (Wuest, Guy, Smith, & Miller 1995). County Extension agents (CEAs) play important roles in initiating, implementing, analyzing, and distributing the results of such on-farm research work (Norman, Freyenberger, & Schurle, 1997). Creating a network of on-farm research resources to successfully conduct and disseminate results is the goal of the OSU Extension Agronomic Crops Team On-Farm Research Network.

### The Network

The OSU Extension Agronomic Crops Team members are OSU Extension county educators, county Extension program coordinators, university Extension specialists, university research faculty, and field specialists. The team has found that an on-farm research network provides the leadership to coordinate on-farm research that is relevant to clients' needs for concerns facing Ohio's agronomic crop industry. The on-farm research effort combines people, farmland, and other resources to

implement both proactive and reactive applied research.

Farmer groups have been used to identify and refine on-farm research efforts for the team. Farmers helped determine the research needs. Using stakeholder focus groups in 2009 provided valuable partnerships that have spawned cooperation and inputs needed to conduct on-farm research. Focus groups identified research topics, preferred methods to obtain results and information, and their perceived value of on-farm research.

The network uses land at county farms, private farms, and university-owned facilities.

- Eight county-based research farms with over 630 tillable acres.
- Twenty-four county Extension educators conduct research with over 80 farm cooperators.
- Five university research stations with nearly 1,000 acres.

On-farm research requires inputs such as seed, chemicals, or fertilizers for treatment comparisons and normal crop development. Cooperating farmers provide land, field equipment, and labor for on-farm research conducted on their farmland. Treatment inputs are provided by the cooperating farmer or a local agricultural retail supplier. County Extension professionals lay out the field design for the cooperating farmers to accommodate field equipment and treatment design.

On-farm research conducted at county-owned farms or university research stations are organized and conducted by university or Extension employees following peer-reviewed research protocols. County-owned farms may own farm equipment or custom hire the work completed. Treatment inputs are either provided by the county owned farm or university research station or a local agricultural retailer.

## **The Review Process**

The review process begins during the development of the research protocol. Protocols are solicited annually in October for spring planted crops and in June for summer or fall seeded crops. The protocols are vetted by multi-discipline Extension state specialists, field specialists, and county Extension educators. Protocols are examined against literature reviews and for valid research design.

Peer-reviewed protocols are shared with the OSU Extension Agronomic Crops Team and county Extension professionals statewide. Sharing valid protocols provides on-farm research plans that can be easily duplicated with minimal design effort.

On-farm research reports are solicited annually in December from fall harvested crops and in August from summer harvested crops. The Extension professional who served as principle investigator is responsible for submitting the manuscript with statistical analysis completed. A Microsoft Excel based ANOVA generator for analyzing research results is available for authors to complete statistical analysis (Mullen, Thomison, Lentz, LaBarge, & Watters 2007). A report template is provided to authors to use for report standardization across the network (Clevenger, 2013).

The editor identifies two Extension professionals to peer review each report. Reviewers are selected based on their specialization, experience, and/or having served as past author of on-farm research

reports. At least one reviewer for each report is a state Extension specialist or university research faculty. Reviewers use a review form to numerically score the manuscript with comments on areas of content and readability (Clevenger, 2013). The reviewer provides his or her opinion of acceptance as acceptable for publication, acceptable contingent on minor revisions, acceptable contingent on major revisions, or rejected for publication. Reviewers can also electronically comment within the manuscript.

The editor receives the peer reviews and directs them to the author. If the manuscript is acceptable for publication, the author responds to each review comment and submits a final manuscript. The editor conducts final formatting and publishes the report on the team website.

## Published Reports

The Network has published 367 reports to date since 1997. An annual summary of on-farm research was produced in printed form from 1997 through 2002 as an Ohio Agricultural Research and Development Center Special Circular. After 2002, the annual summary was published online at the team website: <http://agcrops.osu.edu/on-farm-research>

All reports are publically available online and searchable via the website. This search feature includes the annual summaries from 1997-2002 that were in printed form.

## Discussion and Conclusion

The on-farm research network benefits the OSU Agronomic Crops Team and farmers. Extension professionals use published reports to respond to inquiries and write articles in newsletter, trade magazines, and newspapers. Extension professionals use published reports to support existing agronomic production practices or the discussion of adopting new production strategies during educational programs.

Farmers and stakeholders use the published reports as a source of information to make decisions on their farm or agricultural business. The non-biased research reports can be viewed independently to study the outcome of production agricultural practices and products.

On-farm research helps keep Extension professionals in contact with clientele and confirms work done in small plots at university research stations by repeating the research on-farm. On-farm research keeps county Extension professionals in contact with state Extension specialists and vice versa. Results are used to supplement the OSU Agronomic Crops Team Crop Observation and Recommendation Network (C.O.R.N.) Newsletter. The C.O.R.N. Newsletter is a weekly publication prepared by state Extension specialists, program specialists, and Extension educators to address current production concerns (Mullen et al., 2007). This on-farm research network and team approach can be used as a model by other Extension programs.

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