

**2002 STEEP PROJECT PROGRESS REPORT  
(October 2001 through December 2002)**

**PROJECT TITLE:** Updating Statistical Analysis Software for On-farm Testing

**INVESTIGATORS:**

Project Leader:

Russ Karow, OSU Extension Cereals Specialist, Corvallis

Project Cooperators:

Toshimi Minoura, OSU Associate Professor of Computer Science

Roger Veseth, WSU/UI Extension Conservation Tillage Specialist, Moscow

Project Collaborators

Brad Brown, UI Extension Crop Management Specialist, Parma

John Burns, WSU Extension Agronomist, Pullman

Stephen Guy, UI Extension Crop Management Specialist, Moscow

Larry Robertson, UI Extension Crop Management Specialist, Aberdeen

Bill Schillinger, WSU Dryland Agronomist, Lind

Don Wysocki, OSU Extension Soil Scientist, Pendleton;

**FINAL REPORT:** October 2001-December 2002 (funded period)

**PROJECT OBJECTIVE:** To develop a Windows-based, on-farm testing, statistical analysis program to replace the 12-year old MS-DOS-based AGSTATS program

**KEY WORDS:** On-farm testing, statistical analysis

**STATEMENT OF PROBLEM:** Growers, field representatives, federal agency workers, and county extension faculty need an easy to use statistical analysis program for analyzing data from on-farm trials. While many statistical analysis programs exist, most require specific knowledge about statistics and are not useful to the general user. AGSTATS, a MS-DOS-based statistical analysis software developed 12 years ago at OSU, was written to meet this need but has outlived its usefulness. A similar "no experience needed", Windows-based program with additional features is needed to meet data analysis needs of the target audience.

**AGRONOMIC ZONES OF INTEREST:** All.

**ABSTRACT OF ACCOMPLISHMENTS:** Dr. Toshimi Minoura and a cadre of Oregon State University Department of Computer Science undergraduate students have developed a web-based, on-farm testing statistical analysis program named AGSTATS02. Final debugging of this program is underway as of the end of October 2002 and a link to the program will be available through the STEEP On-farm Testing Web page (<http://pnwsteep.wsu.edu/onfarmtesting>) by December 31, 2002. The program is intended as a resource for growers and other natural resource professionals who are conducting simple experiments and need an easy-to-use statistical analysis tool to evaluate their results.

**RESULTS AND INTERPRETATION:** Dr. Toshimi Minoura and a cadre of Oregon State University Department of Computer Science undergraduate students have developed a web-based, on-farm testing statistical analysis program named AGSTATS02. Final debugging of this program is underway as of the end of October 2002 and a link to the program will be available through the STEEP On-farm Testing web page by December 31, 2002. This analysis program allows choice of a completely randomized or randomized complete block design, can handle up to 16 treatments and 16 replications, allows choice of significance level (1, 5, 10 or 20 % probability), uses a spreadsheet-like data entry format, and allows storage, retrieval and printing of data files. Data is analyzed using a standard ANOVA procedure. Least significant difference values are calculated along with probability and coefficient of variation values. The program will be web-based with an option to download the program for stand-alone use. The latter option will be discouraged expect for experienced computer users. Considerable time and effort was spent trying to create a stand-alone program that could be easily loaded onto the diversity of computer systems and software interfaces that exist in today's world. After many hours of work, this was deemed to be a futile effort given the budget of this project. The program is currently housed on a server in the Department of Computer Science at OSU. After initial release and most additional debugging is done, the program will be moved to the PNW STEEP Website server (Web page (<http://pnwsteeep.wsu.edu/onfarmtesting>)). The initial plan is to allow users to store data files within the program database but level of use will dictate if this is viable as a long-term strategy. File size is very small and millions of files could be stored with little space used but it may become necessary to limit storage available to individual users.

**INTERACTIONS (COOPERATION) WITH OTHER SCIENTISTS CONDUCTING RELATED ACTIVITIES:** Members of the PNW STEEP Extension Cropping Systems Specialists Team have been beta testers of the program.

#### **PUBLICATIONS AND PRESENTATIONS**

Karow, R., R. Veseth, S. Guy, S. Wuest, and D. Wysocki. 2002. AGSTATS02 – A Simple Statistical Analysis Program for On-Farm Testing. *Agronomy Abstracts*. Amer. Soc. Agronomy, Crop Sci. Soc. Amer., Soil Sci. Soc. Amer., Madison, WA – poster paper presented at 2002 Annual meeting in Indianapolis, IN