

PROJECT TITLE: Expanding Access to PNW Direct Seed and Conservation Tillage Systems technologies

INVESTIGATORS:

PNW STEEP Extension Cropping Systems Specialists Team

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Cooperators:

Other PNW extension specialists and educators; researchers on STEEP and related projects; conservation districts; USDA-NRCS; producer organizations; Ag-support industry

INTERIM REPORT: November 2004 through October 2005

PROJECT OBJECTIVES: Increase grower awareness and adaptation of STEEP and related research technologies as integrated components of conservation tillage systems through continuation and expansion of technology transfer efforts including:

- 1) PNW STEEP Extension Conservation Tillage Update
- 2) PNW Conservation Tillage Handbook Series
- 3) Internet Web site -- PNW STEEP Conservation Tillage Systems Technology Source (<http://pnwsteep.wsu.edu>)
- 4) PNW Direct Seed Systems E-mail List Server
- 5) NW Direct Seed Cropping Systems Conference
- 6) Field Days and Tours on Conservation Tillage Systems
- 7) Meeting Presentations

KEY WORDS: Direct seed cropping systems

STATEMENT OF PROBLEM: Lack of access to new research technologies by PNW growers and agricultural support personnel limits the success and slows the adaptation and adoption of conservation tillage systems in the region.

AGRONOMIC ZONES OF INTEREST: All Pacific Northwest cropland agronomic zones can benefit from this technology transfer program on conservation tillage systems, particularly those agronomic zones targeted in STEEP research projects.

ABSTRACT OF ACCOMPLISHMENTS: A variety of technology transfer programs and products have been included in this STEEP project from November 2003 through October 2005. Two issues of the *PNW STEEP Extension Conservation Tillage Update* newsletters were completed. Three *PNW Conservation Tillage Handbook Series* publications (distributed through the *Update* newsletter issues) were added to the *Handbook*. The project Web site “PNW STEEP Conservation Tillage Systems Technology Source” (<http://pnwsteeep.wsu.edu>) was updated with the new Handbook Series publications and Update issues, the 2004 STEEP Annual Report, 2005 NW Direct Seed Conference Proceedings. The website receives about 2500 hit per day. The PNW Direct Seed E-mail List Server was maintained with a network of about 460 clients. The January 13 and 14 Northwest Direct Seed Cropping Systems Conference was held in Spokane, Washington. It featured 24 speakers, including 8 growers, from Idaho, Oregon, and Washington. A detailed proceeding was distributed at the Conference and added to the Web site. Team members highlighted direct seeding and/or more intensive cropping and crop options at field days, tours and meeting presentations with a total attendance of more than 3000.

RESULTS AND INTERPRETATION: Specialists on the PNW STEEP Extension Cropping Systems Team worked with STEEP and related program researchers, other extension specialist and educators, and Ag support personnel to summarize new “state-of-the-art” conservation tillage management technologies from an integrated cropping systems approach. The following is a description of the project accomplishments by technology transfer methods during this project period:

1) PNW STEEP Extension Conservation Tillage Update This newsletter continues to be an effective PNW technology transfer tool. A total of two issues were published in FY2005 (November 2004 and May 2005).

The current *Update* mailing list is being revised and updated through survey cards included the *Update*. The mail list includes producers, county extension agents, conservation districts, NRCS staff, and Ag service industry, Ag media and other support personnel. The *Update* also provides a conservation tillage systems information resource for local Extension and Conservation District newsletters and education programs, and for the Ag media.

2) PNW Conservation Tillage Handbook Series Two new *PNW Handbook Series* were distributed through the November 2004 and May 2005 issues of the *PNW Conservation Tillage Update* newsletter. These were added to the *Handbook*, and to the Internet version of the *Handbook* on the STEEP Web site (<http://pnwsteeep.wsu.edu>). The Series titles and authors are listed at the end of this report. Printed copies in the *Update* are 3-hole punched and ready for insertion into the large 3-ring binder *Handbook*. The *Handbook* now contains 157 *Handbook Series* publications and is a major reference on conservation tillage systems technologies in the Northwest.

3) Web Site - PNW STEEP Conservation Tillage Systems Technology Source (<http://pnwsteeep.wsu.edu>) Internet and E-mail are now the major communication and technology access tools for PNW Ag support personnel and growers. All offices of cooperative extension, conservation districts, NRCS, Ag service industries, and an increasing number of growers in the Pacific Northwest have Internet / E-mail access. Data from a USDA National Agricultural Statistics Service study showed for 2002 (the last year data is available) that 58 percent of PNW growers have Internet access. The level is much higher today. Also the access of broad band internet has also increased significantly. Access to broad band permit rapid

downloads of information and quick internet browsing. Most producers, industry consultants and agency all communicate by E-mail. PNW STEEP Web site and new PNW Direct Seed E-mail/Web List Server (see # 4 below) are helping meet this expanding PNW demand for computer technology access and an improved communications network on direct seed cropping systems.

The STEEP Web site currently averages over 2500 hits per day (<http://cru.cahe.wsu.edu/WebLog/pnwsteep/index.htm>) and provides access to conservation tillage systems technology developed through STEEP and related NW research programs. The entire *PNW Conservation Tillage Handbook Series* is now on the Web site, including the new Handbook Series distributed in FY 2005.

The NW Direct Seed Cropping Systems Conferences (see Conferences #5 below) is featured on a web page. The 1998 through 2005 Conferences are included at this site. The Conference page has a URL (<http://pnwsteep.wsu.edu/directseed>) that provides access to the proceedings and conference video information. A link has been made to the PNDSA web site in advance of the 2006 conference, which has become the responsibility of the PNDSA. Information on the 2006 can be found at their web site.

Three web site publications were added to the On-farm testing section of the web page. *Spokane County Direct Seeding Project (2001 to 2003): An On-Farm Project To Answer Grower Questions about Transitioning to Direct Seeding*

The Wilke Project-An Analysis of Alternative Crop Rotations in the Intermediate Rainfall Area of Eastern Washington

The Northwest Crops Project (1998 to 2003): an on-farm comparison of a 3-year and 4-year crop rotation under direct seeding for the intermediate rainfall area of eastern Washington

Also the Web site includes: the Columbia Plateau Wind Erosion / Air Quality Project, with the 78-page, publication titled "Farming With the Wind" added as a PDF file (to view and print in print form); color photo additions with the STEEP logo; logos of UI, OSU and WSU at the top of the Web index pages; and navigation enhancements for the PNW Direct Seed List Server) Web page. A calendar of events on direct seed systems is continually updated with applicable events in the Northwest and North America.

4) PNW Direct Seed E-mail / Internet List Server This List Server offers a communications link on new information resources, events, research results, technology innovations, discussions and experiences from the dryland production regions of the Inland Northwest. It also helps provide access to direct seed systems technology that may be adapted to Northwest production conditions from other regions and countries. Messages are received by e-mail and are also stored on the List Server Web site for later reference, and for access by those added to the List Server over time.

The address list includes about 460 university and USDA-ARS researchers, extension specialists, county/area Ag extension educators, conservation districts, USDA-NRCS staff, PNW grower organizations, Ag industries representatives and growers from across the dryland cropping areas of the Inland Northwest. More than 60 messages have been posted on the List Server in the past year. Publicity efforts will continue on the availability of this new technology access and communications tool. The List Server Web site can be accessed for subscription and viewing of messages through the PNW STEEP Web site (<http://pnwsteep.wsu.edu>). Subscription requests can also be sent to Team members. All

interested growers and Ag support personnel are encouraged to participate in the List Server. The goal is to help develop a stronger communication network and partnership among growers, researchers, Ag-support groups and agencies, and Ag industry to accelerate the development and grower adaptation of direct seed systems in the region.

5) Northwest Direct Seed Cropping Systems Conference The eight annual Conferences was held on January 13 and 14, 2005 in Spokane, Washington. Oregon. It was attended by 410 growers and Ag support personnel. The Conference was organized as a service to Northwest growers by two groups: 1) the PNW STEEP program through the STEEP Extension Team and 2) the PNW Direct Seed Association. It was co-sponsored by 12 Ag companies and agencies, and developed and promoted in cooperation with 12 PNW grower organizations and Ag support groups.

The program featured 24 speakers, including 8 growers, from Idaho, Oregon, and Washington. A Direct Seed Poster Exhibition also featured 31 posters. Some major program areas focused on management strategies for direct seed cropping systems include: equipment and technology, international cropping systems, soil stewardship and cropping management in high, intermediate and low rainfall areas.

Publicity efforts were conducted in cooperation with the main PNW grower organizations in the Inland Northwest dryland cropping region to get Conference brochures to NW growers and Ag support personnel. These included: ID Grain Producers Association, OR Wheat Growers League, WA Assoc. of Wheat Growers, ID Assoc. of Soil and Water Conservation Districts, OR Assoc. of Conservation Districts, WA Assoc. of Conservation Districts, and USA Dry Pea and Lentil Council. Collaborative publicity efforts were also arranged to provide brochures or the Conference articles and the Website URL to NW Ag service industry field staff through many of the major Ag service companies and Ag industry organizations, including the Far West Agri-Business Association.

The Conference Website was kept up to date with the latest program and Conference information. It included also on-line registration for Conference co-sponsorships, Conference pre-registration and poster exhibition registration.

The PNDSA Conference and Trade Show will be held on January 5 and 6, 2006 at the Three Rivers Convention Center in Kennewick. The conference is being organized as a service to Northwest growers by the Direct Seed Association. The PI's of this project worked with the staff and board members of the PNDSA to transition the conference management to the PNDSA.

6) Conservation Tillage Field Days and Tours The Team compiled descriptions of field days, tours and other events in 2005 highlighting new cropping systems technologies for direct seeding in the Inland Northwest and applicable areas of the Northern Great Plains and Canadian Prairie Provinces. The listing was distributed in May 2005 through mailings to Extension Ag Educators, Conservation Districts, USDA-NRCS offices, the main Ag service companies and fieldmen. The event descriptions were also included in the May issue of the PNW Extension Conservation Tillage Update newsletter (included in registration materials at a number of the field days below), put on the PNW Conservation Tillage Systems Information Source Web site, sent on the PNW Direct Seed E-mail List Server.

Many of the Team members were involved in organizing field days, tours and trials that featured conservation tillage and/or more intensive cropping systems and crop options. These events included:

May 16-17 Area-wide Direct Seed Tour with Rohan Rainbow, Executive Director of SANFTA, Australia. (Attendance 125)

16 and 17 May, Jill Clapperton Soil Quality Workshop, The Dalles, Oregon, Organized by Brian Tuck, OSU and Dusty Eddy, NRCS. (attendance 75)

18 May, Jill Clapperton Soil Quality Tour, Bill Jepsen Ranch, Liberty School Road, Oregon. Larry Lutcher, OSU. (Attendance 45)

19 May, Jill Clapperton Soil Quality Tour, Adams, Oregon. Mary Corp, Umatilla Co. Extension (attendance 50)

25 May, Columbia Co. Conservation Tour, Dayton Washington, Paul Carter, WSU Extension. (attendance 80)

1 June, Western Whitman Co. Research Tour, Lacrosse, Washington, Steve Van Vleet, WSU

7 June, Pendleton Ag Research Center Field Day, Pendleton, Oregon, Don Wysocki, OSU. (attendance 150)

8 June, Sherman Station Field Day, Fairgrounds, Moro, Oregon, Don Wysocki, OSU. (attendance 90)

9 June, Lind Field Day, Lind, Washington, Bill Schillinger, WSU (attendance 160)

9 June, Residue Management Tour to the southern Palouse, Washington & Idaho, Diana Roberts, WSU (attendance).

14 June, Walla Walla, Washington legume variety trials, John Burns WSU Extension

15 June, WSU Weed Science Tour, Pullman, Washington, Joe Yenish, WSU Extension

6 June, UI Weed Science Tour, Moscow, Idaho, Donn Thill, UI

21 June, Union Co. Crop and Conservation Tour, Island City, Oregon, Darrin Walenta, OSU. (attendance 175)

23 June, Precision-Farming and Direct-Seed Field Day at Cunningham Agronomy Farm, Pullman, Washington, Hans Kok WSU/UI

28 June N. Lincoln Co. Field Tour, Wilbur, Washington, Aaron Esser, WSU

29 June, U of I Parker Plant Science Farm, Moscow, Idaho, Bob Zemetra, UI. (attendance 150)

7 July, Spillman Farm Field Day 50th Anniversary, Pullman, Washington, John Burns, WSU (attendance 250)

7) Meeting Presentations The PI's conducted 27 meeting presentations at grower meeting throughout the project period to a combined audience of over 2,500. The audience included growers, agency personnel, field consultants and university and ARS faculty.

EXPECTED OUTCOMES: The Project has 4 expected outcomes or impacts:

- 1) Increased PNW grower and Ag support personnel access to new conservation tillage systems technology developed through STEEP and related research efforts.
- 2) Increased effectiveness and profitability of growers' conservation tillage systems in the PNW as a result of access to and incorporation of appropriate new technologies and management strategies into grower's production systems.
- 3) Increased rate and extent of grower adaptation and adoption of conservation tillage systems as a result of improved effectiveness and profitability, plus a corresponding reduction in cropland soil erosion impacts on air and water quality.
- 4) Increased grower and Ag support industry / group recognition of and support for STEEP and related Northwest research and education programs on more intensive cropping systems under conservation tillage.

INTERACTIONS (COOPERATION) WITH OTHER SCIENTISTS CONDUCTING

RELATED ACTIVITIES: A primary focus of this project is to collaborate with scientists on STEEP and related projects to integrate new technology on conservation tillage systems into effective educational programs and materials for Northwest growers and Ag support personnel. Many of the Team specialists are also investigators on other STEEP or related research projects.

PUBLICATIONS

Pacific Northwest Extension Publications (PNW Conservation Tillage Handbook Series)

Schillinger, W.F., R.I. Papendick, S.O. Guy, P.E. Rasmussen, and C. van Kessel. 2004. Dryland Cropping in the Western United States. Pacific Northwest Conservation Tillage Handbook Series No. 28 Chapter 2, PNW Extension publication in Idaho, Oregon and Washington.

Schillinger, W. F., D. L. Douglas Young, D. Rowell, H. Shaffer, and S. Schofstoll. 2004. Cropping Systems Research in the World's Driest Rainfed Wheat Region. Pacific Northwest Conservation Tillage Handbook Series No. 29 Chapter 2.

Pacific Northwest Extension Conservation Tillage Update (newsletter)

Koenig, R., D. Roe, and D. Wysocki, R. November 2004 Pacific Northwest STEEP Conservation Tillage Update newsletter. University of Idaho, Oregon State University and Washington State University.

Kok, Hans and D. Wysocki, R. May 2005. Pacific Northwest STEEP Conservation Tillage Update newsletter. University of Idaho, Oregon State University and Washington State University.

Proceedings

Wysocki, D. J. Jan. 2005. Editor. Proceedings of Eight Northwest Direct Seed Cropping Systems Conference. Jan. 13 and 14 2005, Spokane, Washington. NW Direct Seed Conference, 3180 W. Clearwater, Suite E, Kennewick, WA and on the Web (<http://pnwsteep.wsu.edu>)