

INTRODUCTION

Staffs of the Columbia Basin Agricultural Research Center (CBARC-Oregon State University [OSU], Pendleton and Sherman Stations) and the Columbia Plateau Conservation Research Center (CPCRC, USDA-Agricultural Research Service [ARS], Pendleton) are proud to present the results of their research. This bulletin contains a representative sample of the work in progress at these centers. A collection of bulletins over a 3-year period will give a more complete assessment of the productivity and applicability of research and education. Changes in staffing, programming, and facilities at these centers during the past year are summarized below.

Promotions and Awards

Dr. Dan Ball was nominated by the Oregon Wheat Growers League for a national research award from the National Association of Wheat Growers. OSU and USDA have a cooperative public relations program and enter a float in the Dress-Up Parade that is held each year in conjunction with the Pendleton Round-Up. This year the float won the second place award and honored the Main Street Cowboys, a local community service group that celebrated its 50th anniversary in 2000.

Within the USDA staff, certificates of merit were given to Scott Oviatt, Katherine Skirvin, Stewart Wuest and Dale Wilkins for outstanding work performance. Tami Johlke received an award for exceptional organization of the numerous runoff and erosion samples collected over the past 3 years. Katherine Skirvin, Chris Roager, Stewart Wuest, Clyde Douglas, Bob Correa and Scott Oviatt received awards in

recognition of superior effort for guiding, coordinating and creativity in remodeling the sample preparation and electronics laboratory in the Office Annex. Bob Correa received an award for superior effort in developing and testing a no-till seeder residue management wheel. Dale Wilkins was awarded a certificate for excellence in leadership from the staff at USDA-ARS. Rich Greenwalt and Patricia Frank received awards for extra effort during the Administrative Officer transition. Kevin Collins and Terry Starr received awards for outstanding work performance. The National Society of Professional Engineers honors Dale Wilkins by selecting him as Engineer of the year for the Agriculture Research Service.

Staff Changes

There were several important staff changes at OSU this year. Dr. Richard Smiley stepped down from the superintendent position after 15 years of tireless service to the research center and farmers in eastern Oregon. He will be intensifying his activities in plant pathology research and extension in eastern Oregon. Dr. Smiley successfully combined daily management of the research station while maintaining a nationally recognized plant pathology research program.

Dr. Steve Petrie was hired as the new superintendent of CBARC and started in July 2000. Dr. Petrie earned his M.S. and Ph.D. degrees in soil fertility and plant nutrition from OSU in 1979 and 1981, respectively. He was the soil fertility specialist at the University of Idaho from 1981 to 1985, where he conducted research on fertilizer management for wheat and other crops. He joined Unocal AgriProducts as an agronomist in 1985 and headed Agronomic Services for

Unocal until 1998, when he became Manager of Sales and Marketing for a Division of Martin Marietta Technologies. Dr. Petrie will be conducting research on nutrient management for small grains.

Ms. Jennifer Humphreys and Ms. Ruth Whittaker joined the OSU team working in the plant pathology program for Dr. Richard Smiley. Ms. Humphreys has B.S. degree in Crop and Soil Sciences from OSU and Ms. Whittaker has a M.S. degree in botany from North Carolina State University. Ms. Humphreys worked for the plant pathology program last summer.

Mr. Jason Patmore joined the weed science program of Dr. Dan Ball; he has a B.S. degree from the University of Manitoba.

Temporary employees in the OSU programs included Alec Bailey, Jan Bailey, Maggie Campbell, Juan Cante, J. Francisco Contreas, Brian Currin, Joel Currin, Shannon Duff, Jeremy Gregory, Shawn Hachquet, Andrea Haley, Jennifer Haley, Katherine Hallman, Allison Hanks, Bryce Herinckx, Melissa Johnson, Ruby McRae, Matthew Millar, Russell Montgomery, Scott Montgomery, Martin Murtishaw, Shawn Pace, Justin Richards, Arran Robertson, Nicholas Sirovatka, Amie Spratling, David Sullivan, Shirley Taylor, Dean Young, Hannah Webb, Ryan Wuest, Amanda Wysocki, and Byron Wysocki.

There were several additions and changes in ARS staff during the past year (2000-2001). On January 3, 2001, Dr. Clyde Douglas, Jr., soil scientist, retired after 38 years of Federal service.

In April 2000, Dr. Amos Bechtel, agricultural scientist, was selected to fill a 2-year Post-doc position. Dr. Bechtel will use

data, including grain yields, fertilizer and pesticide applications to make financial comparisons and analysis of sustainability for both the existing agricultural systems and the developing soil and water conservation systems.

Linda Baugh was selected in April 2000 for the Pendleton and Burns, OR, administrative officer position. Linda has served as a personnel specialist and as an administrative officer for the USDA, Forest Service.

The temporary hydrological technician position held by Dave Robertson was converted to a permanent position in October 2000. Dave graduated from Washington State University with a B.S. degree in Geology.

Stephanie Boyle, a Whitman College Sophomore, was selected for the summer intern position to study the impact of soil management systems on soil microbiology. Heather Bennett was selected as an ARS research apprentice in June 2000.

Caitlin Collins, Kevin Collins, Matt Hartzheim, Kate Holsapple, Melissa Johnson, Tiah Paul, Angela Sallee, Christina Skirvin, Terry Starr, and Sam Womack worked as temporary employees during the summer and school vacations. David Smith worked in the microbiology program as a volunteer.

New Projects

Dr. Richard Smiley and the plant pathology program expanded the survey of root lesion nematodes to gain further insight into population dynamics under different crop rotations and tillage systems. This information will be used to determine if large nematode populations are actually associated with reduced crop yields. Spring wheat varieties

with genetic resistance to root lesion nematodes, cereal cyst nematodes, or Fusarium foot rot were imported from Australia and are currently being integrated into field experiments to determine if they have the potential to contribute new resources of value to growers in the Pacific Northwest.

Dr. Steve Petrie will be initiating a soil fertility/plant nutrition research program. His work will examine the effects of nitrogen fertilizer management on grain protein for both wheat and barley. He will also be investigating the effects of fertilizer sources and placement on cereal yields.

The ARS re-evaluates its projects nationwide on a 5-year, rotating schedule. After gathering input from local producers and other stakeholders, the ARS unit at Pendleton wrote a new project plan to renew one of its two projects. The new project is part of the ARS National Project Soil Resource Management (Number 202). More information on this National Project can be found on the internet at the following location: <http://www.nps.ars.usda.gov/programs/programs.htm?NPNUMBER=202>.

One objective of the new research is to identify the factors that will improve water infiltration rates under certain cropping systems. We will trace flow paths of water to determine which soil physical and biological factors (e. g., root pores, earthworm holes, soil aggregation, surface residue) are critical to reducing loss of water and soil. Another objective is to identify microbial communities formed under long-term cropping systems, characterize select microorganisms, and measure their carbon and nitrogen cycling activity. The research will also evaluate components of soil organic matter and their relationship to soil quality.

Dr. John Williams has begun work on two cooperative watershed research projects. These projects are designed to evaluate the hydrologic and soil erosion responses to no-till farming systems using a paired watershed approach. In this type of research, the runoff and erosion from two, similar watersheds are compared. Because the size of the watersheds, from 10 to 60 acres, the results from this research are representative of what producers could expect from farm-scale operations. Bill Lorenzen and Clinton Reeder are the cooperators in this new project.

Dr. Stewart Wuest has initiated a new experiment designed to compare the soil ecology of tilled and untilled cropping systems. The objective is to understand how tillage and surface residue influence crop development, infiltration, soil biology, and plant disease, and to use this knowledge to make recommendations for optimizing cropping practices.

Dr. Amos Bechtel has been examining the effect of alternative cropping systems on the profitability and financial risk associated with conventional tilled and direct seeded dryland crop production in the Pacific Northwest.

Facilities and Equipment

There were a number of improvements to the OSU facilities and infrastructure. We purchased a pickup, a new trailer for transporting a water tank, a sprayer system for use in the greenhouse, 10 Binmaster boxes with lids for grain handling, new computers for the soil science, weed science, and plant pathology programs, a metal-cutting band saw for the shop, a slide projector, a digital multimedia projector, a compact overhead projector and a digital camera

Renovation of the soil and plant sample preparation rooms and electronics laboratory in the ARS Office Annex was completed in 2000. Renovations included new cabinets, counter tops, relocating drying ovens, replacing doors, air-conditioning, and additional electrical outlets. A Challenger tractor, plot herbicide sprayer, automatic runoff and sediment sampler, computer network backup system, and microbiological identification system were purchased with special ARS funds.

Training

OSU staff participated in the necessary re-certification training to maintain the appropriate pesticide licenses, first aid, and CPR skills.

All USDA staff licensed to apply pesticides completed re-certification training. All staff received updates on cardio-pulmonary resuscitation, first aid, ethics, sexual harassment prevention, and civil rights training. Judy Elliot, Amy Baker, Tami Johlke, Katherine Skirvin, Dale Wilkins, and Pat Frank attended a 1-day workshop on Microsoft Office. Tami Johlke attended "How to Build Powerful PowerPoint Presentations," a 1-day workshop. Daryl Haasch and Pat Frank attended "Managing Multiple Projects," a 1-day workshop. Linda Baugh completed weeklong courses on "Simplified Acquisition Procedures," "Introduction to Federal Contracting," and "LA/STEP," a personnel training course. Judy Elliott completed "Managing the Front Desk," a 1-day seminar.

Visitors

The Center hosted several special events, including an OSU Cereal Research Review, STEEP Technical Coordinating, Industry Advisory and Administrative

Committees, and numerous research and planning meetings.

Visitors hosted by the staff at the center included:

Clinton Reeder, Pendleton, OR;
Lauren Lampertz, Skalar, Norcross, GA;
John Monagle, Simplot Soilbuilder, Umatilla, OR;
Norman Sladen, FMC Corporation, Pleasant Hill, CA;
Beth Harrington, Administrative Officer, USDA-ARS, Corvallis, OR;
Alan Schlegel, Kansas State University, Tribune, KS;
Johan Menting, Skalar, Norcross, GA;
Jim Cook, Washington State University, Pullman, WA;
Jack Brown, University of Idaho, Moscow, ID;
Herb Campbell, Canby, OR;
Fritz Hill, Pendleton, OR;
Brad Baugh, USDA-ARS, Nine Mile Falls, WA;
Stuart Hall, Portland OR;
John Rickman, Portland, OR;
Larry Huss, Portland, OR;
Don McClave; Portland, OR;
Sho Dozonu; Portland, OR;
John Shepanek, Portland, OR;
Ruth Ann Dodson, Portland, OR;
Laura Imeson, Portland, OR;
Perry Miller, Bozeman, MT;
Vanessa Stewart, Development Officer, Dryland Research Institute, Agriculture Western Australia, Meredin, Western Australia;
John Hui, USDA-ARS, Moscow, ID;
Dr. Edward Knipling, Associate Administrator, and Joseph Garbarino, Budget Officer, Budget and Program Management Staff, USDA-ARS, Washington, DC;
C. Richard Amerman, Scientific Plan Advisor, USDA-National Program Staff, Beltsville, MD;

Janet Tai, Area Engineer, USDA-ARS-Pacific West Area, Albany, CA;
Neil Smith, Colby, KS;
Richard Krikava, Pendleton, OR;
Howard Thomas, Highland, UT;
Dennis McDonald, IBM, Kennewick, WA;
Mark Hodges, Oregon Wheat Commission, Portland, OR;
Mike Spier, USW, Cairo, Egypt;
Mitesh Parec, Kabansor Millers LTD, Nairobi, Kenya;
Abubakar Bakuresa, SS Bakuresa and Co, Ltd, Dar-es-Salaam, Tanzania;
Sharon Hodges, Portland, OR;
Richard Hermens, Eastern Oregon University, La Grande, OR;
Norman McKinley, Dupont, Salem, OR;
Austin McHugh, Campbell Scientific, Logan, UT;
Jack Johnson, Weston, OR;
Bob Rost, Oregon State University, Corvallis, OR;
Brad Brown, University of Idaho, Moscow, ID;
Melissa Nartz, USDA-Natural Resources Conservation Service, Pendleton, OR;
Carl Hawke, Brush Prairie, WA;
W. G. Horner, USDA, ARS, Administrative and Financial Management, Beltsville, MD;
Ruth Whittaker, Blue Mountain Community College, Pendleton, OR;
Leonard Jenner, Pendleton, OR;
John Lagerweg, Portland, OR;
Ray Denny, Umatilla Co. Soil and Water Conservation District, Pendleton, OR;
Bob Adelman, USDA-Natural Resources Conservation Service, Pendleton, OR;
Brady Miller, Astoria -Pacific International, Clackamas, OR;
James Nobler, Hermiston, OR;
Mark Sherry, Walla Walla, WA;
Allen Ford, Prescott, WA;
Gregg Riegel, USDA-Forest Service, Bend OR;
Students of Washington State University, Tri

Cities ES/RP 591 Watershed Science Class, Richland WA.

Seminars

The 2000 OSU/USDA Seminar Series at the Center was coordinated by Steve Albrecht. Seminars included the following speakers and topics:

Summary of Results from the CBARC Agronomy Program, 1997-2000, Dr. Bill Payne, agronomist, Columbia Basin Agricultural Research Center, Pendleton, OR, 29 February.

Mineralizable Late Nitrogen on Vernalized Triticale -- the Ramblings of an Extension Agronomist, Dr. Russ Karow, Department of Crop and Soil Science, Oregon State University, Corvallis, OR, 3 March.

Dryland Cropping Systems Research, Dr. Alan Schlegel, Kansas State University, Manhattan, KS, 27 April.

Nitrogen Management of Irrigated Wheat, and My Vision of the Role of the CBARC, Dr. Steven Petrie, Martin Marietta Corporation, Cincinnati, OH, 1 May.

A 1,300-Year Lake-Core Record of Dust Deposition on the Columbia Plateau: Impacts of Human and Natural Events, Dr. Alan Busacca, professor, Crop and Soil Sciences, Geology, Washington State University, Pullman, WA, 16 May.

Senate Bill 1010 and How it Might Affect Oregon Agriculture, Dr. Clinton Reeder, Pendleton, OR, 23 May.

Managing Herbicide Resistant Weeds in Australia, Vanessa Stewart, development officer, Dryland Research Institute,

Agriculture Western Australia, Merredin, WA, 27 June.

Crop Water Use, Soil Water Balance, and Cropping System, Dr. Chengci Chen, faculty research associate, Columbia Basin Agricultural Research Center, Pendleton, OR, 24 August.

Weed Management with Herbicide Resistant Field Corn, Dr. David Fischer, Department of Agronomy, University of Wisconsin, Madison, WI, 30 August.

Agronomic Interactions, Economics, and Soil Responses to Cropping Systems Featuring Different Tillage, Rotations and Chemical Inputs, Dr. Tawainga Katsvario, Cornell University, Ithaca, NY, 5 September.

Conservation Tillage Systems for Corn and Soybeans, Dr. John C. Siemens, professor emeritus, University of Illinois, Champaign-Urbana, IL, 27 September.

Adventures and Work in South Africa, Dr. Richard Smiley, plant pathologist, Columbia Basin Agricultural Research Center, Pendleton, OR, 13 October.

CSEPP, Cheryl Humphrey, public information officer, Umatilla County Chemical Stockpile Emergency Preparedness Program, Hermiston, OR, 20 October.

Advances and Challenges in PNW No-Till, Paul Rasmussen, soil scientist (retired), USDA-ARS Pendleton, OR, 27 October.

Fire and Agricultural Burning, Mark Waggoner, producer, Touchet, WA; and Dr. Walt Gary, county agent, Walla Walla Co., WA, members of the Washington Department of Ecology Task Force on Agricultural Burning, 15 November.

George Canyon and other NRCS Activities, Bob Adelman, USDA-Natural Resources Conservation Service, and Ray Denny, Soil and Water Conservation District, Pendleton, OR, 28 November.

The Ecology and Biology of Raptors of the Front Range of the Blue Mountains, Mr. Mike Denny, USDA-Forest Service, Walla Walla, WA, 7 December.

Knowing your Local Landscapes, Dr. Donald Wysocki, extension soil scientist, Columbia Basin Agricultural Research Center, Pendleton, OR, 14 December.

Farming Challenges in Western Australia, Mary Corp, cereal crop agent, OSU Extension Service, Umatilla Extension Service, Pendleton, OR, 20 December.

Liaison Committees

The Pendleton and Sherman Station Liaison Committees are coordinated by chairpersons Kay Simpson (Pendleton: 541-276-3507) and Ernie Moore (Moro: 503-565-3635), respectively. These liaison committees provide insightful guidance and recommendations on research directions, staffing needs, and facilities and equipment needs. These committees provide a crucial communication link between growers and the research community. We encourage you to contact the liaison committee chairs with your concerns and suggestions for improvements regarding any aspect of the research centers.

Expressions of Appreciation

The staff wishes to express their appreciation to individuals, associations, and corporations who have given special assistance for the operation of experimental plots on or associated with the center during

2000-2001. The Oregon Wheat Commission continued to provide crucial funding to the OSU programs at the center and we gratefully acknowledge their generous support. We want also to express our sincere appreciation to those individuals, groups and corporations who provided additional equipment, supplies, funds, and labor to help us carry out our mission. These include Agrium, BASF Corp., Bayer Corp., Community Corrections Work-Release Program, E.I. du Pont de Nemours, FMC Corp., Richard Lieuallen, Monsanto Co., Pendleton Grain Growers, Leonard (Buckshot) Carter, Terry Mayberry, Richard (Mac) McDonough, Rohm and Haas, Tom Neidlinger, Paul Pargeter, Al Sartini, Stubbs Seed Service, and Zeneca Ag Products.

We want to express our appreciation and thank those who donated labor, supplies, equipment, or funds for the Pendleton Station Field Day. These include Agri-Check, American Cyanamid Co., Aventis CropScience, Bank of the West, Bayer Corp., BASF Corp., Columbia River Bank, Community Bank, E. I. du Pont de Nemours, Farm Credit Service, FMC Corp., Inland Chemical Service, Inland Empire Bank, Kuo Testing Labs, Monsanto Co., Pendleton Bus Co., Pendleton Flour Mills, Pendleton Grain Growers, Pendleton Main Street Cowboys, Pioneer Implement, Rohm and Haas, The McGregor Co., UAP Northwest, Walla Walla Farmers Coop., Western Farm Service, Wheatland Insurance, and Wilbur-Ellis.

We also want to acknowledge and thank the donors who provided buses, meals and other services for the Sherman Station Field Day at Moro, including: Columbia River Bank, Farm Credit Services, Gustafson, Klamath First Federal, Mid Columbia Bus Co., Mid Columbia Producers, Monsanto, Morrow County Grain Growers, Pioneer Implement, Richelderfer Air Service,

Safeway, Sherman Aviation, Sherman High School, Wasco Electric Coop., and Wilbur-Ellis.

Cooperative research trials at the Center were operated by OSU scientists Patrick Hayes, Chris Mundt, Russ Karow, Neil Christensen and Jim Peterson and by Washington State University, University of Idaho, and ARS scientists including Joe Yenish, Frank Young, Don Thill, and Kim Campbell.

The local county agricultural agents throughout north central and northeastern Oregon have provided invaluable local assistance in locating research sites, coordinating activities with farmer-cooperators, and providing input to our research programs. These tireless individuals include Mary Corp, Tom Darnell, Jeff McMorran and Don Horneck in Umatilla County; Gordon Cook and Darrin Walenta in Union/Baker/Wallowa Counties; Kathryn Kettel and Larry Lucher in Morrow County; Sandy MacNab in Sherman County; Brian Tuck in Wasco County; and Jordan Maley in Gilliam County in Oregon. County agricultural agents in Washington have also been key members of our team and we wish to thank Roland Sherman in Columbia County; Bill Schillinger in Adams/Lincoln County; Walt Gary in Walla Walla County; and John Burns in Whitman County.

We wish to express special thanks to the 39 farmers who allowed us to work on their property during the past year (see separate listing). They have performed field operations, loaned equipment, donated chemicals, forfeited yield, and adjusted their practices to accommodate our experiments. The locations of these off-station plot sites are shown on the map that follows.

We truly appreciate the support and encouragement of growers, organizations, and businesses with a mission common to ours: to serve in the best manner possible the crop

production and resource conservation needs of our region. We welcome your suggestions on how we may continue to improve in our endeavors towards reaching this goal.

Steven Petrie
Superintendent
OSU-CBARC

Dale Wilkins
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