

10th Annual
2011 NACAA WESTERN REGION
Professional Improvement Conference

October 11, 12, 13, 2011
Kennewick, WA



*Hosted by the Washington Extension
Agents and Specialists Association*



2011 Acknowledgements



The Washington Extension Agents and Specialists Association (WEASA) greatly appreciates those who contributed to this meeting and worked so hard to make it a success.

SPONSORS



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Western Region Extension
PROFESSIONAL IMPROVEMENT CONFERENCE
October 11, 12, 13, 2011

AGENDA

Tuesday, October 11, 2011

Renewable Energy Symposium on Wheels

(sponsored by Western SARE)

<u>Time</u>	<u>Tour Stop</u>
8:00 a.m.—10:00 a.m.	Registration in hotel lobby
9:30 a.m.	Meet in hotel lobby for tour
10:00 a.m.	Depart promptly from hotel in Washington vans to OSU-Hermiston Agriculture Research Station Dr. Don Horneck will discuss cellulosic ethanol research
11:30 a.m.—Noon	Box Lunch Steve Camp- “Biodiesel Grant and On-farm Processing”
12:30 p.m.	Railex Facility at Burbank Tory Brown, Warehouse Manager
2:00 p.m.—3:30 p.m.	Ice Harbor Dam Tour
4:00 p.m.	CO ² Capture at Pacific National Lab (Boise Plant) Columbia Basin College Science Building, Room TD439
5:15 p.m.	Return to hotel– dinner is on your own
7:00 p.m.	Washington Planning Committee Meeting

AGENDA
Wednesday, October 12, 2011
Professional Improvement Symposium
(sponsored by Western SARE)

<u>Time</u>	<u>Tour Schedule</u>
7:00 a.m.	Breakfast on your own
7:00 a.m.—8:30 a.m.	Registration in hotel lobby
8:30 a.m.	Welcome by Dr. Pete Jacoby, Associate Dean, WSU College of Agricultural, Human, and Natural Resource Sciences and Director of the WSU Irrigated Agriculture and Research Center at Prosser
8:45 a.m.	Welcome and Meeting Overview
9:00 a.m.—10:15 a.m.	Presentations—Sessions 1 and 2 occurring simultaneously.
10:15 a.m.—11:00 a.m.	Break and “Meet the Authors” Poster Session
11:00 a.m.—11:55 a.m.	Presentations Continued
11:55 a.m.—1:00 p.m.	Lunch NACAA updates from Western Region Director, Mary Small, and Vice Director, Mark Nelson
1:00 p.m.—2:15 p.m.	Presentations Continued
2:15 p.m.—3:00 p.m.	Break and “Meet the Authors” Poster Session
3:00 p.m.—4:15 p.m.	Presentations Continued
5:30 p.m.	No Host Social
6:00 p.m.	Western Region Banquet Speaker—Mick Qualls, Ephrata, WA “History of the Columbia Basin Irrigation Project.”
9:00 p.m.	Washington Planning Committee Meeting

AGENDA

Thursday, October 13, 2011

Professional Improvement Tour

(sponsored by Western SARE)

<u>Time</u>	<u>Tour Schedule</u>
7:00 a.m.	Breakfast on your own
8:00 a.m.	Depart from hotel on bus
9:00 a.m.— 10:00 a.m.	#1– Bolthouse Inc., and Mercer Ranch– Carrot processing and Precision Agriculture
11:00 a.m.	#2– Chukar Cherries Value-added marketing
Noon	Lunch at Mercer Estates
1:30 p.m.—3:15 p.m.	WSU Irrigated Agriculture Research & Extension Center at Prosser Dr. Thomas Henick-Kling, Enology (30 min.) Dr. Troy Peters– Irrigation research (30 min.) Dr. Leonard Eldridge, WSDA State Veterinarian WSDA Animal Traceback Database (45 min.)
3:30 p.m.	Depart for hotel and home

2011
**Western Region County Agents
 PROFESSIONAL IMPROVEMENT CONFERENCE
 Kennewick, WA**

PRESENTATION SCHEDULE

SESSION I		
EXTENSION PROGRAMMING	9:00-9:15 a.m.	<i>Western Region County Agents Professional Improvement Conference, Nine Years and Counting</i> C.R. Reid, Utah State University
	9:20-9:35 a.m.	<i>2011 Regional Master Gardener Convention: An Overview of Its Planning, Marketing & Execution</i> L.T. Ellis, University of Idaho
	9:40-9:55 a.m.	<i>New Master Gardener Plant Clinic Training Program Delivers</i> S.B. Renquist, Oregon State University
	10:00-10:15 a.m.	<i>Insect Identification Volunteers Created in Train-the-Trainer Workshops in Oregon & Washington</i> M.K. Corp, Oregon State University
	10:15-11:00 a.m.	BREAK AND POSTER SESSION
	11:00-11:15 a.m.	<i>Establishing an Insectary for Cyphocleonus Achates in Partnership with High School Science Class</i> S.K. Williams, University of Idaho
	11:20-11:35 a.m.	<i>Beef Camp Educates Youth Beef Producers About End Product Quality in Idaho</i> S.D. Baker, University of Idaho
	11:40-11:55 a.m.	<i>Southern Utah Biomass Field Days</i> R.M. Nelson, Utah State University
	11:55 a.m.-1:00 p.m.	LUNCH
	1:00-1:15 a.m.	<i>Using a Simple Cash Grain Marketing Strategy for Low Volume Sellers of PNW Wheat</i> S. Macnab, Oregon State University
	1:20-1:35 p.m.	<i>Summit County Grass Fed Beef Program-How to Market Local Beef to the Public</i> S.J. Banks, Utah State University
	1:40-1:55 p.m.	<i>USU Extension's Native American Technology Access Program</i> J.A. Gale, Utah State University
	2:00-2:15 p.m.	<i>Living on the Land Publications and Podcasts</i> B. Tuck, Oregon State University
	2:15-3:00 p.m.	BREAK AND POSTER SESSION
	3:00-3:15 p.m.	<i>Annie's Project Success in Idaho</i> R.L. Wilson and S. Etter, University of Idaho
	3:20-3:35 p.m.	<i>A Matter of Opinion: Agents Perceptions vs. Clientele Preferences</i> J. E. Banks, Utah State University
3:40-3:55 p.m.	<i>Strategies to Increase Attendance of Agricultural Producers at Extension Events</i> T.W. Wilde, Utah State University	
4:00-4:15 p.m.	<i>Agriculture Celebrated in Lemhi, Custer and Butte Counties</i> S.K. Williams, University of Idaho	

2011
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PRESENTATION SCHEDULE

SESSION II		
AGRONOMY/HORTICULTURE	9:00-9:15 a.m.	<i>Raspberry Variety Trials for Utah's Fresh Market</i> R. Heflebower, Utah State University
	9:20-9:35 a.m.	<i>Phosphorus and Potassium Availability from Dairy Compost in Dryland Organic Crop Production</i> L.A Hunter, University of Idaho
	9:40-9:55 a.m.	<i>High Residue Farming Under Irrigation, Advantages and Adoption</i> O.S. Norberg, Washington State University
	10:00-10:15 a.m.	<i>Drip Irrigation to Combat Silver Scurf, Black Dot and Decrease Skin Set Time on Potatoes in NW WA</i> D. McMoran, Washington State University
	10:15-11:00 a.m.	BREAK AND POSTER SESSION
	11:00-11:15 a.m.	<i>Idaho Grapevine Virus and Vector Survey</i> L. Clayton, University of Idaho
	11:20-11:35 a.m.	<i>Restoration of Russian Knapweed Infested Pastures and Rangeland in Northeastern Utah</i> B.M. Kitchen, Utah State University
	11:40-11:55 a.m.	<i>Evaluating Control of Foxtail Barley (Hordeum jubatum) and Desirable Grass Compatibility in Irrigated Pastures Using Kerb</i> C.R. Reid, Utah State University
	11:55 a.m.-1:00 p.m.	LUNCH
	1:00-1:15 a.m.	<i>Thrips Control in Dry Bulb Onions in Washington State</i> T.D. Waters, Washington State University
ANIMAL SCIENCE	1:20-1:35 p.m.	<i>Relative Effects on Selling Price of Quality Defects in Market Beef and Dairy Cows and Bulls Sold Through Livestock Auctions Markets in the Western United States</i> K.S. Jensen, University of Idaho
	1:40-1:55 p.m.	<i>Teaching Cows to Eat Big Sagebrush (Artemisia tridentate) to Reduce Winter Feed Costs and Improve Biodiversity</i> E.A. Burritt, Utah State University
	2:00-2:15 p.m.	<i>Improving Calf Performance, Carcass Characteristics, and Ranch Profitability by Extending the Grazing Season with Warm Season Grasses and Brassica Forages</i> S.J. Filley, Oregon State University
	2:15-3:00 p.m.	BREAK AND POSTER SESSION
	3:00-3:15 p.m.	<i>Potential for Brassica Spp. and Fodder Radishes as Late Season Forages in the High Desert Region of Oregon</i> C.L. Engel, Utah State University
	3:20-3:35 p.m.	<i>Satellite Monitoring of Stock Water Saves Time and Money for Southern Utah and Northern Arizona Ranches</i> K. Heaton, Utah State University
	3:40-3:55 p.m.	<i>A Study of Physical and Genetic Indicators of Pork Quality in Asotin County Fair Pigs</i> M.D. Heitstuman, Washington State University

Western Region Extension PROFESSIONAL DEVELOPMENT CONFERENCE

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2011
Western Region County Agents
PROFESSIONAL IMPROVEMENT CONFERENCE
Kennewick, WA

EXTENSION PROGRAMING
PRESENTATIONS



WESTERN REGION COUNTY AGENTS PROFESSIONAL IMPROVEMENT CONFERENCE, NINE YEARS AND COUNTING

Reid,* C.R.¹

¹Natural Resources/Agriculture Agent, Iron County, Utah State University

The first Western Region Professional Improvement Conference (WRCA PIC) was held in Las Vegas, Nevada in November of 2002. Fifty-Five Extension Agents representing nine states including: Utah, Arizona, Nevada, California, Oregon, Washington, Idaho, Hawaii and New Mexico attended the meeting. The purpose of the meeting was; 1. To permit sharing of ideas and programs among agents. 2. Provide the opportunity for peer reviewed paper presentation for agents. 3. Promote fellowship among agents in the Western U.S. The meeting was initiated by Chad Reid, Utah State University Extension, who also served as chair of the planning committee. Thirty-six papers were presented the following program areas: Agronomy, Animal Science, Water Resources, Extension Programming, Horticulture and Natural Resources. Papers were peer reviewed and published in a professional proceedings. Due to the success of this first meeting the WRCA PIC has continued every year since 2002. These nine meetings have been held in 7 states and have resulted in over 300 papers being presented. Participants report that involvement in the WRCA PIC has enhanced their professional capacity, provided visibility that is vital for their promotion and tenure, and increased their awareness of cooperative programs across state lines.

2011 REGIONAL MASTER GARDENER CONVENTION: AN OVERVIEW OF ITS PLANNING, MARKETING, AND EXECUTION

Ellis,* L.T.¹

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The University of Idaho Extension through a collaborative effort with the Horticulture Department of Brigham Young University – Idaho, hosted a one day Regional Master Gardener Convention on June 28, 2011. This event was held at the Thomas E. Ricks Demonstration Gardens on the Brigham Young University – Idaho campus in Rexburg, Idaho. This regional event had attendees from Montana, Utah, Wyoming, and Idaho. Total attendance was over 200 people. The event planning committee included Lance Ellis, Dr. Wayne Jones, and Dr. Steve Love from the University of Idaho Extension; and Jerry Toll from the BYU – Idaho Horticulture Department. The theme of this event was for attendees to have a “hands on” horticulture experience. To accomplish this goal the planning committee designed 14 classes that would be held in outdoor settings, where the instructor would give a live hands on demonstration of the topic being discussed. These 14 classes included Hydroponic Production of Tomatoes; tour and discussion, Espalier, Training, and Pruning of Fruit Trees; demonstration and tour, Landscape Concepts Walkabout; tour and discussion through the demonstration gardens, Tour of Jungle Greenhouses, Fruit Orchards, All American Selections Trials, and Research Plots, Techniques and the “How To” of Growing Fruit—Both Large and Small; tour and discussion, Grafting Theory and Practice; hands on demonstration in the apple orchard, Small Garden, Big Harvest: Creative, Tested Techniques for Maximizing Home Food Production, Cut Flower Production; varieties of flowers to grow, culture requirements, and tour of cut flower production plots, Soil Improvement Methods and Amendments; tour and demonstration, Turfgrass Management—Lawn Care From Start to Finish, Landscaping with Native Plants in the Intermountain West, Diagnosing Plant Disorders; walking demonstration of plant issues in East Idaho, Plant Propagation and Basic Tissue Culture Methods, and Garden Photography; theory, practice, and hands on presentation.

NEW MASTER GARDENER PLANT CLINIC TRAINING PROGRAM DELIVERS

Renquist,* S.B.¹

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During the past eleven years I have instructed and trained Master Gardeners in Douglas County Oregon. We have an active program that has 286 members who made over 7,000 educational contacts in the community in 2010. During the past three years veteran Master Gardeners and I have focused our training program on improving plant clinic performance and appeal to new Master Gardeners. Our training effort focused on veteran Master Gardeners in 2009 and 2010. I implemented a monthly training which focused on diagnostic skill development. In 2011 veteran Master Gardeners and I changed our training system for new apprentice Master Gardeners preparing to work in our plant clinic. With our old system, apprentice Master Gardeners were getting varying levels of instruction and preparation from random veterans during their first few days in the clinic. We now have a training system that designates one day each week from February to May for each of our top five plant clinic veterans. Every Monday the same trainer is in the clinic to prepare apprentice Master Gardeners and so on through the week. The top training veterans were selected by the agent, and the group worked together to fine-tune our protocol and methods. The impact of our new training system has been impressive. When asked whether our new training system was effectively preparing them to work in the clinic, 97% of all apprentices responded either strongly agree or agree. When asked if the new training system was more likely to keep them actively involved in the plant clinic, 82% responded either strongly agree or agree. Surveys of apprentices from 2010 who were in the clinic during the 2011 apprentice training were also informative. 95% of our surveys showed that the 2011 training system was more thorough and the trainers more knowledgeable.

INSECT IDENTIFICATION VOLUNTEERS CREATED IN TRAIN-THE-TRAINER WORKSHOPS IN OREGON AND WASHINGTON

Corp,* M.¹, Rondon, S.², Van Vleet, S.³

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Insects, both pests and beneficials, are increasingly important to all agricultural crops in the Pacific Northwest. Identification of pest insects is critical to successful adoption of integrated insect management. The project's objective was to develop a group of agricultural professionals who will train others in insect identification and in integrated management strategies. We used the "train-the-trainer" model where we conducted an intensive training program to prepare our future trainers. We trained 71 individuals in 4 different 2 ½ day (20 hour) training sessions in Oregon and Washington. The audience included University Extension faculty/staff(13), agricultural professionals consultants/agronomists(13), and certified Master Gardeners(45). The sessions were intense hands-on learning with everything needed for insect identification and preparing their insect collections. Our web resources provided training materials (<http://extension.oregonstate.edu/umatilla/insect-id>). Web resources include a series of on-line short videos on collecting and scouting for insects. A post training survey demonstrated that 1 year post training trainees had conducted insect ID education (50%), and provided identification services (85%) both at work and in their communities. About 300 community volunteer service hours by the trainees had been conducted at the time of the preliminary survey conducted in January, 2011. An email list serve for the class participants was and continues to be used to communicate with trainees. This short course was sponsored in part by Western SARE.

ESTABLISHING AN INSECTARY FOR *CYPHOCLEONUS ACHATES* IN PARTNERSHIP WITH HIGH SCHOOL SCIENCE CLASS

Bertram, D.¹, Williams, * S.K.², Wolf, A.³

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Lemhi County, Idaho, has over seven percent of the county infested with spotted knapweed (*Centaurea*). Herbicide has been the major management tool, but cannot be used in all areas. *Cyphocleonus achates* otherwise known as spotted knapweed root weevil is an effective biological control agent for spotted knapweed. *Cyphocleonus achates* overwinters as larvae in roots. *Cyphocleonus achates* larvae mine and gall the vascular tissue of knapweed roots. The larval feeding reduces knapweed density and can result in death of small plants. Adults emerge from June to mid-September and feed on knapweed leaves. The adults are 0.5 to 0.6 inches long and generally live 8 to 15 weeks. Females mate several times and deposit more than 100 eggs during their lifetime. The eggs are laid singly in a notch excavated by the female on the root crown, just below the soil surface. Eggs hatch in 10 to 12 days and larvae begin feeding on roots. Arlene Wolf, high school science teacher attended a workshop on establishing insectaries and teamed up with the Lemhi CWMA and Lemhi County Extension Office to make it a reality. The team worked together through April and May, 2010 to prepare the site and establish a healthy stand of spotted knapweed. In August, 2010, 200 *Cyphocleonus achates* deposited in the new insectary. Once a large enough population is established, *Cyphocleonus achates* will be collected and spread to spotted knapweed infestations within the county.

BEEF CAMP EDUCATES YOUTH BEEF PRODUCERS ABOUT END PRODUCT QUALITY IN IDAHO

Baker,* S.D.¹, Fife,* T.E.²

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The last four national Beef Quality Audits identified many quality challenges in the beef industry including excess external fat, inadequate tenderness, insufficient marbling, and lack of uniformity. A major industry goal was to educate beef producers to select management practices that increase value and quality of beef. This includes youth producers who are raising beef animals as members in 4-H and FFA. It is important for youth to recognize the impact they have on consumer demand, and ultimately the industry. Every management decision, from selecting and feeding cattle to implementing new technologies, affects not only profitability, but also beef quality. In response, a proposal was submitted to the Idaho Beef Council (IBC) to fund BEEF Camp, a youth “end-product quality” educational event. The curriculum for BEEF Camp includes presentations, hands-on activities, and live animal demonstrations. Topics include Measuring Carcass Quality, Meat Quality Attributes, Feeds Affecting End-Product Quality, Selecting Market Steers, and Beef Quality Assurance. Hands-on activities include conducting a Taste Panel and a Beef Cut Identification contest. To date, three BEEF Camps have been conducted with over 100 youth reached thus far. Scores from pre- to post-tests increased from 42.5% to 90.7%, respectively. Overall, there was a 113.2% improvement in knowledge. Participants ranked the overall experience of the program and the educational materials provided as 1.4 on a scale of 1-5 (1=outstanding, 2=good, 3=average, 4=poor, 5=unacceptable). All BEEF Camp attendees also indicated they learned something new regarding the relationship of livestock management and beef quality. It is intended that the partnership between the University of Idaho Extension and the IBC will continue and BEEF Camp will continue to educate youth beef producers across the state of Idaho.

SOUTHERN UTAH BIOMASS FIELD DAYS

Nelson,* R.M.¹

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Currently there are nearly 50 million acres of Pinyon/Juniper woodlands across the West and more acres are being invaded each year. The risks presented by expanding and overstocked PJ woodlands and the associated impacts on ecosystem biodiversity, wildlife habitat, and water quantity and quality are cause for major concern. Recently the BLM and Forest Service are renewing its efforts to control this problem. Proactive management can provide positive use of (PJ) fuels while reducing fire suppression and restoration costs. In order to make it possible to clear more ground, many groups are trying to find ways to use the pinyon/ juniper to recoup some of the costs of the harvesting. Thanks to the work of a private contractor currently working in Beaver County, we have been able to hold two field days where we have demonstrated different methods of harvesting the pinyon/juniper and also looked at ways of adding value to the harvested trees. During the field days harvesting, handling and processing equipment were demonstrated. Leading experts in the biomass and forestry industry addressed the importance restoring the woodlands and ways for industry and government to partner together to address the problem. A total of over 450 people have attended the two field days and plans are being made to make this an annual event.

USING A SIMPLE CASH GRAIN MARKETING STRATEGY FOR LOW VOLUME SELLERS OF PNW WHEAT

Macnab,* S.¹

¹Extension Agent, Oregon State University, Sherman County, Oregon 97039

There are fewer grain marketing alternatives for small volume producers (under 5,000 bushels), which leaves the cash grain market as the primary option for these marketers. Many of them are absentee landowners who receive the grain as part of their lease as payment for use and management of their land resource. Absentee landowners frequently receive small portions as the shares are split between many family members and these numbers become even small as the ownership passes down from generation to generation. Absentee landowners are also less likely to follow the grain markets close enough to be able to take advantage of spikes in grain markets while avoiding price drops. This study examines 100 years of monthly average wheat prices from the Portland market, the base market for most wheat in Oregon and Washington, to determine if there is a given month that is best for conducting grain sales year in and year out. Then compares to a simple marketing plan to improve the market pricing situation for the seller, while allowing them to take advantage of price spikes while avoiding drastic price drops.

SUMMIT COUNTY GRASS FED BEEF PROGRAM – HOW TO MARKET LOCAL BEEF TO THE PUBLIC

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In 2010 a Summit County council initiative formed the Summit County Food Coalition. Its primary goal is to provide a self-sustaining marketing program open to the county's agricultural producers wanting to sell their products to local markets. This coalition is made up of ranchers, local/state government representatives (USU Extension), local non-profits and businesses. Their first project focused on grass fed beef due to the number of cattle raised in Summit County coupled with the demand for local meat at grocery stores and restaurants. The role of extension was to provide technical information about livestock production and generate interest for this project among ranchers. The pilot effort marketed 3 calves to a local grocery store, and during the fall/winter of 2010/11 this expanded to 51 calves sold to the local grocery store, individuals and restaurants in Park City. The two ranchers involved received an additional \$.20/lb live weight compared to selling their calves over the traditional livestock video auction. This provided the ranchers \$145.50 per calf in additional income. Through the cooperative efforts of the coalition a local marketing system has been developed for the local ranchers to sell their grass fed beef to local markets in Summit County.

USU EXTENSION'S NATIVE AMERICAN TECHNOLOGY ACCESS PROGRAM

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In Sevier County, Utah federal programs and resources are available to non-resident Native American students. However, resident Native American students known as “Valley Kids” do not have access to the same resources, because they are not housed in federally subsidized dormitories. Many local Native American families lack access to technology based Native American educational resources. Parents asked USU Extension for help their families obtain access to computer, internet based technology and mentoring to help meet the educational needs of their children. Funding was obtained from Utah Department of Work Force Services (DWS) through the Youth and Families with Promise (YFP) program. Extension faculty worked with parents, school district administrators, and county official and determined non-duplicative program opportunities. A partnership was established between USU Extension and Richfield City Library, who had an existing secure computer lab to provide the program. The part-time director of Native American program for the school district, who is a Native American, was hired to also be the part-time director of the new program. A Native American student was also hired as an intern. The Native American Technology Access program is provided two nights a week through a rental arrangement with Richfield City Library. New computers, software, and Native American educational materials have been provided for the library use and general circulation. The program is helping the “Valley Kids” learn more about their Native American culture, complete homework assignments, and receiving positive cultural and academic mentoring.

LIVING ON THE LAND PUBLICATIONS AND PODCASTS

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Washington and Oregon State University (OSU) Extension personnel in the Mid-Columbia area of Oregon and Washington teamed to provide educational resources for new and small acreage landowners. The goal was to create high quality, concise resource materials with application to a variety of new and small agricultural enterprises. The publications in the “Living on the Land” series are limited to two pages in length, use short, simple sentences with tables, are easy to read, and are colorful with high quality photos. The first publication was developed in 2010 titled “Pasture and Livestock Essentials” EC1634, followed by “Winter Livestock Care” EC1635-E and “Managing Manure” EC1637-E. The next publication in production is “Attracting Birds of Prey for Rodent Control”. Members of the OSU Extension & Experiment Station Communications Department approached the authors about making these publications into podcasts for increased accessibility by the target audience. Consequently, each publication has been divided into three podcast sessions. The podcasts are attractive and user friendly, with background sounds that enhance each podcast. One publication in the series was a 2010 NACAA Communication Award Publication Category national finalist and its podcast was an Audio Category western regional finalist.

ANNIE'S PROJECT SUCCESSES IN IDAHO

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Annie's Project is a farm management education program designed to strengthen women's roles in risk management on their farm/ranch enterprise. The program's mission is to empower farm women to be better business partners through networks and by managing and organizing critical information. In Idaho we adapted the original Annie's Program to fit a very diverse clientele. We held two separate six week classes in locations approximately 30 miles apart. Thirty-three women participated in the classes. Our classes consisted of both large commercial farm owners as well as small acreage owners. Along with the size of the operation, the crops grown also varied a great deal. Our class production diversity ranged from apples to alfalfa to cattle and onions. Our audience also differed in ages as well as farm/ranch experience levels. Our challenge was to make this program fit all of our audiences needs. A post-class evaluation showed that participants found estate planning, preparing financial documentation, enterprise budgeting and understanding value-added enterprises as the most valuable topics taught. The women who took Annie's Project are planning on getting more involved in the farm business side as well as re-organizing their record keeping system. In the future we will be teaching additional Annie's Project classes and providing specific workshops in topic areas as well as conducting a six month post evaluation to determine changes participants have made since taking the class.

A MATTER OF OPINION: AGENTS PERCEPTIONS VS. CLIENTELE PREFERENCES

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Agents often get caught up doing the same educational method over and over without having time to stop and make sure people are still following behind them. In 2010 surveys were conducted to compare extension agents' perceptions of clients' preferences for educational delivery methods with clients' actual preferences. A survey of agents was conducted in 58% of Utah counties, while surveys of agricultural producers were conducted statewide in 64% of Utah counties and locally with 29 producers from Juab County. The educational delivery methods queried among both agents and clientele included: printed newsletter; online newsletter; email; newspaper article; radio program; printed publication; display; group meeting; field day; on-farm demonstration; one-on-one consultation; web based information; distance education; trade publication; and mailed letter. In addition to preference, agents and producers ranked how effective each of those methods is in conveying information. Comparison of the surveys indicated that agents' perceptions of client preference and effectiveness of educational delivery methods were not in sync with clients' views. For example, one-on-one consultation was perceived as the most preferred delivery method among agents, but ranked fifth with producers. Printed newsletters were the second most effective delivery method among producers statewide, but were perceived as eighth by agents. The results of this comparison of surveys may change agent's perceptions on how clients prefer to receive information. As an outcome of these surveys, agents may see a need to change the educational delivery methods they use to be more effective in reaching agricultural producers in their respective counties.

STRATEGIES TO INCREASE ATTENDANCE OF AGRICULTURAL PRODUCERS AT EXTENSION EVENTS

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Agricultural Agents throughout the nation have struggled to get agricultural producers to attend Extension events. The unpredictable nature of agricultural production conflicts with the desire of program planners for predictable outcomes. Traditional program planning may need to be altered to achieve desired results among agricultural producers. Strategies such as requesting RSVPs are commonly employed to address the needs of program planners but may have had an unintended effect on agricultural producer attendance at Extension events in Millard County. Altering program planning strategies to give more flexibility to agricultural producers increased their participation at Extension events. At events where meals are served, making arrangements with local food establishments to provide meals on demand allows program planners flexibility. This flexibility eliminates the need to request RSVPs. Because RSVPs are eliminated, the agricultural producer's decision to attend can be made on the agricultural producer's schedule- not the program planners. Due to the unpredictable nature of agricultural production, it was suspected that the decision to attend an event was often made within twenty four hours of the event. When agricultural producers were given this flexibility combined with a personal contact within twenty four hours of the event, ten out of the twenty one producers contacted attended the event. This approach to event planning for agricultural producers will be implemented at future Extension events. Attendance will be tracked and compared to previous events to determine the long term effects of this practice.

AGRICULTURE CELEBRATED IN LEMHI, CUSTER, AND BUTTE COUNTIES

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Lemhi, Custer and Butte Counties, Idaho are all considered rural counties with populations of 7,908; 4240; and 2764 respectively. Even though these counties are classified “rural” based on population, agriculture is not the top employer. Employment by government, professional and technical services, accommodation and food services and retail trade, together exceed employment in agriculture. There are more youth living in “town” and most residents have limited exposure to agriculture. This indicates that although these counties are “rural”, many of the citizens have little first-hand knowledge of agriculture and food production. These statistics prompted the Lemhi County Extension Advisory Committee to request that a major effort be made by Extension to educate the young people about where their food comes from. From that request, the Lemhi County Extension Office invited Custer and Butte County Extension Offices to join them and all Extension offices worked to develop partnerships and programs in each respective county. It was decided to focus educational programs during National Ag Week each year in March. In 2010, educational programs reached over 1,360 youth. There were 65 volunteers involved and 5,000 people were reached thru radio trivia, popular press, displays and drive-thru breakfast.

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AGRONOMY/HORTICULTURE
PRESENTATIONS



RASPBERRY VARIETY TRIALS FOR UTAH'S FRESH MARKET

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Raspberries have become a popular option for small-acreage farms in Utah, where fresh local fruit is closely associated with the summer tourism industry. However, small acreage producers have come to rely heavily on older summer-bearing cultivars. 'Canby', a thornless summer-bearing cultivar, was the main variety grown until it suffered heavy losses from Bushy-dwarf virus approximately ten years ago. Fall-bearing cultivars are not as prone to "sunburn" as summer-bearing types since they begin producing after the hottest temperatures have passed. They have also shown resistance to Bushy-dwarf virus. A multi-site, replicated trial was planted in 2006 to evaluate 12 fall-bearing cultivars for suitability to Utah's alkaline soils and high-elevation, arid climate. The most detailed data were collected on 10 cultivars at the Kaysville research farm. Plots were evaluated in 2007 for stand establishment, and from 2008 to 2010 for yield, fruit size and fruiting season. The highest yields were for the cultivar 'Joan J', averaging 3.58 kg per row meter, followed by 'Polana', 'Caroline' and 'Polka' with 2.59, 2.40 and 2.35 kg/m, respectively. 'Polka' and 'Caroline' gave the most consistent yields from year to year. 'Polka' and 'Joan J' were the earliest fruiting with average first harvest 22 days before 'Heritage', followed by 'Summit' and 'Polana' at 19 and 18 days before 'Heritage', respectively. Early, high yielding cultivars will be required to provide economically viable yields in Utah's high elevation arid climate.

PHOSPHOROUS AND POTASSIUM AVAILABILITY FROM DAIRY COMPOST IN DRYLAND ORGANIC CROP PRODUCTION

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Both conventional and organic growers in southern Idaho are actively pursuing affordable soil additives to replace or reduce commercial fertilizer use. Dairy compost utilization is an economically viable choice for farmers in southern Idaho due to the large quantity of local dairy manure produced each year. However, producers are lacking adequate information regarding integration of dairy compost into their cropping systems. Evaluating soil mineralization and resulting soil residual levels from dairy compost utilization will help growers match nutrient release to crop nutrient demand. Currently, there is limited research on nutrient mineralization rates from dairy compost in higher elevation, organic dryland growing areas of southern Idaho. Researchers started a 4-year research trial on two farmer-owned alfalfa and barley rotational systems. Dairy compost will be applied every fall at 0, 5, and 10 tons/acre (based on soil nutrient analysis). The buried bag technique was used for soil mineralization. Every fall soil residual data was collected. The dairy compost analysis revealed a high phosphorous (P) and potassium (K) nutrient value. First year mineralization results in alfalfa revealed a significant difference between available soil P and K in relation to compost application. In addition, there was a significant increase in soil residual P levels between the 0 and 5 tons/acre and a significant difference in soil residual K between all application rates. In the higher pH alkaline soils, researchers saw a beneficial decrease in soil pH with compost application. Dairy compost increased alfalfa yield, soil mineralization values, and residual levels of P and K with 5 tons/acre. Continued soil nutrient research over this 4-year trial will help growers effectively integrate an abundant local nutrient resource into their cropping systems while considering economics and environmental parameters.

HIGH RESIDUE FARMING UNDER IRRIGATION, ADVANTAGES AND ADOPTION

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The Malheur and Owyhee Watersheds are located in southeastern Oregon where intensive tillage has been a normal way of life in the irrigated sections. The result of this heavy tillage in the mineral soils of Malheur County causes increased soil erosion from wind and water movement, break down of soil organic matter, soil ped structure and high amounts of energy. The desired outcome of this extension program was to evaluate and encourage strip tillage in row crops and no-tillage for drilled crops. Two grants were obtained to evaluate reduced tillage systems in this area. These funds were used to purchase a 12 foot no-tillage drill as well as enable cost share for early adapters in strip tillage. Strip tillage tills an area about six to nine inches wide where the seed will be placed and fertilizer is often deep banded which will decrease phosphorous losses. Using strip tillage for the production of corn, corn silage, and dry edible beans did not affect yield. Strip tillage in the program occurred on 816 acres in 2010 and 1338 acres in 2011. Strip tillage and no-tillage consistently improved soil condition using the “Revised Universal Soil Loss Equation Two” (RUSLE2) model as indicated by increased “Soil Conditioning Index” (SCI) and decreasing the “Soil Tillage Intensity Rating” STIR rating. On average the no-till drill reduced four tillage operations saving 3.5 gallons of diesel per acre. This one drill used by 29 farmers saved over 8,000 gallons in Treasure Valley in one year. The largest savings came from rotating out of alfalfa to winter wheat which saved eight operations and \$153 per acre.

DRIP IRRIGATION TO COMBAT SILVER SCURF, BLACK DOT AND DECREASE SKIN SET TIME ON POTATOES IN NORTHWESTERN WASHINGTON

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Northwestern Washington's potato industry has become much larger and more complex over the past several decades, increasing from 537 acres in 1968 to 13,250 acres in 2007. As vegetable processors have closed their factories in northwestern Washington, farmers have added small, round and niche potato varieties to maintain a cash crop that will keep the farm economically sustainable. One of the downsides to growing specialty potatoes is that the tuber is made up of approximately 80% water; therefore, even under northwestern Washington's mild marine climate, irrigation is more and more frequently regarded as a crop requirement. Although there have been years in the recent past when farmers have not used irrigation equipment, (1996 growing season) these growing seasons are becoming fewer. Based on WSU Skagit County Extension Agriculture Statistics, WSU extension personnel have noticed a rise in supplemental irrigation in northwestern Washington using what is referred to as a traveling or reel big-gun system. This system of irrigation is effective in supplying water to the crop, but uses water inefficiently. High pressures are required to propel the water long distances, and therefore, water is highly vulnerable to wind drift and evaporation. Additional tests have shown that big gun systems have poor distribution uniformity when compared with other systems. Improved irrigation efficiency and distribution uniformity are important because they can improve crop yields, crop uniformity/quality not to mention the ability to fertigate and chemigate. During the 2010 growing season the project team was able to demonstrate drip irrigation systems can be compatible with growers in northwestern Washington. For 2011 trials have been added to include chemigation, to determine if it can be used to help combat the three biggest disease problems for area growers 1) silver scurf 2) skin set and 3) black dot. If drip irrigation proves worthwhile growers could lower input costs of irrigated potatoes in northwest Washington while improving the quality of potatoes they produce as they address environmental concerns for conserving water and energy.

IDAHO GRAPEVINE VIRUS AND VECTOR SURVEY

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The award-winning wine grape industry of Idaho dates back to the mid 1800's, but like many states wine grape vineyards were phased out during the years that National Prohibition was in place. Since the early 1970's Idaho wine grape growers, like other Pacific Northwest states has been successfully re-establishing wine grape growing and wine producing industries. In Idaho alone the value of the wine grape industry's contribution to the state's economy was estimated at \$73 million in 2008. With substantial growth in both the number and size of Idaho wine vineyards over the past 10 years, concern over sanitation of imported wine grape planting material has arisen. To protect the sustainability of Idaho's wine industry a small pilot survey conducted in Southern Idaho by USDA-ARS, Washington State University and University of Idaho researchers in 2008, to assess the current status of Idaho vineyards regarding the presence plant virus and viroids. This survey revealed the presence of Grape Leaf Roll Virus III, the most detrimental race in the *Grape leaf roll virus* (GLRV) complex, spurring an expanded state-wide survey of established vineyards and retail nursery planting material for 18 viruses and viroids known to affect wine grapes in Western States. Simultaneously, Idaho State Department of Agriculture conducted state-wide pheromone trapping for the Grape (GMB) and Vine (VMB) Mealybug in 91 Idaho vineyards, both known vectors of GLRV III. Survey results from 2009 and 2010 confirmed the presence of the native GMB in Southern Idaho vineyards, but failed to confirm VMB in Idaho. Six percent of the survey samples and 4% of retail material from 2009 showed positive for one or more species of GLRV. A further expanded survey in 2010 revealed the presence of GLRV I, III, IV, and V, *Grapevine virus* A and B, and the *Rupestris stem-pitting associated virus*.

RESTORATION OF RUSSIAN KNAPWEED INFESTED PASTURES AND RANGELAND IN NORTHEASTERN UTAH

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Successful restoration of Russian knapweed (*Acroptilon repens*) infested pastures and rangelands usually requires an integrated approach. We established a field trial in October 2010 to test the effectiveness of tillage, herbicides and seeding in restoring Russian knapweed infested pastures and rangelands. Treatments were applied in this order: tillage, herbicides, and seeding. Tillage treatments were disking and control. Herbicide treatments were either 3 or 7 oz/a of Milestone, 16 oz/a of Transline, 3 and 16 oz/a of Milestone+Transline, 1 qt/a of Tordon 22K, and an experimental herbicide. Seeding treatments included 'First Strike' Slender Wheatgrass, 'Anatone' Bluebunch Wheatgrass, 'Magnar' Great Basin Wildryes, 'Valvilov II' Siberian Wheatgrass, and 'Sherman' Big Bluegrass. Eight months following treatment, it appears that tillage was necessary to establish seeded grasses. Tillage also appeared to improve Russian knapweed control. Tordon 22K, Milestone+Transline, and the experimental herbicide provided greater than 90 percent control of Russian knapweed when combined with tillage. Milestone alone at 3 or 7 oz/acre was not significantly less effective. Transline alone was less effective. Tordon 22K, Transline and the experimental herbicide were harsher on seeded grasses than the other treatments. Therefore, preliminary results indicate that optimum treatment may be tillage followed by an application of Milestone either alone or in combination with Transline, followed by seeding of a competitive grass.

EVALUATING CONTROL OF FOXTAIL BARLEY (*HORDEUM JUBATUM*) AND DESIRABLE GRASS COMPATIBILITY IN IRRIGATED PASTURE USING KERB HERBICE

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Foxtail barley (*Hordeum jubatum*) is a native perennial grass that has readily invaded alfalfa fields and pastures in Southern Utah, being particularly aggressive in wet years. Kerb herbicide (Pronamide) has been recommended for Foxtail barley control; however, while it is labeled for alfalfa it is not currently labeled for pasture, with one concern being its effect on desirable pasture grasses. To evaluate the effects of Kerb herbicide on Foxtail barley and associated effects on desirable pasture grass species, the authors engaged in a multi-year experiment. Kerb herbicide was applied to an established Orchard grass pasture utilizing a CO₂ backpack sprayer in replicated, randomized plots in November of 2007 and 2008. Rates were 0, ¼, ½ pound of product per acre. In associated, non-replicated plots, Kerb was applied at ¾ and 1 pound rates to test for high rate grass safety. In addition ¼ and ½ pound rates were applied to 5 additional species of pasture grasses to evaluate desirable grass injury. Plots were evaluated in August of 2008 and 2009 and rated on control of Foxtail barley as well as evaluated for grass injury. Quarter pound rates averaged 62% and 55% control in 2008 and 2009 respectively. While the ½ pound rates averaged 93% and 96% control in year 1 and year 2 respectively. No grass injury was observed in any of the plots. Three quarter and 1 pound rates did not show any additional control, but also did not show any grass injury. In addition, 5 other pasture grass species treated showed no injury at either the ¼ or ½ pound rate.

THRIPS CONTROL IN DRY BULB ONIONS IN WASHINGTON STATE

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Onion thrips are the key pest of dry bulb onions in Washington State. Our project goals were to: ascertain which thrips species are found on onions in Washington, to determine which registered and new chemistries effectively control thrips, and evaluate different water application gallonage rates and delivery pressures for applying insecticides for thrips control. During 2007-2011 onions (var. Tamara) were established at the WSU Othello Research Farm and grown using standard grower practices. Plots (7.5 feet wide and 30 feet long) were established in a random complete block design with four replications. Efficacy was evaluated by counting the number immature and adult thrips per plant on 10 individual plants per plot in the field. All data for each sample date was analyzed by ANOVA and treatments compared to non-treated controls in pairwise *t*-tests. During all evaluation dates, greater than 95% of the thrips collected were onion thrips (*Thrips tabaci*) with the remaining thrips being Western flower thrips (*Frankliniella occidentalis*). The most effective insecticides for controlling thrips were Lannate (methomyl) and Radiant (spinetoram). The insecticides Agri-Mek (abamectin) and Movento (spirotetremat) provided adequate control of thrips. Different application gallonage and pressure did not affect efficacy of insecticides.

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ANIMAL SCIENCE
PRESENTATIONS



RELATIVE EFFECTS ON SELLING PRICE OF QUALITY DEFECTS IN MARKET BEEF AND DAIRY COWS AND BULLS SOLD THROUGH LIVESTOCK AUCTION MARKETS IN THE WESTERN UNITED STATES

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Relative effects of Beef Quality Assurance (BQA)-related defects in market beef and dairy cows and bulls on selling price at auction was evaluated during 2008. The presence and severity of 23 BQA-related traits were determined during sales in Idaho, California, and Utah. Overall, 18,949 unique lots consisting of 23,479 animals were assessed during 125 dairy sales and 79 beef sales. When combined, all recorded traits explained 36% of the variation in selling price in beef cows, 35% in beef bulls, 61% in dairy cows, and 56% in dairy bulls. Premiums and discounts were determined in comparison to a “par” or “base” animal. Compared to a base BCS 5 beef cow (on a 9-point beef scale), BCS 1 to 4 cows were discounted ($P < 0.0001$), while premiums ($P < 0.05$) were estimated for BCS 6 to 8. Compared to a base BCS 3.0 dairy cow (on a 5-point dairy scale), more body condition resulted in a premium ($P \leq 0.001$), while a less-than desirable BCS of 2.0 or 2.5 was discounted ($P < 0.0001$). Presence of ocular neoplasia in the precancerous stage discounted ($P = 33.05$) beef cows and discounted ($P < 0.01$) dairy cows; while at the cancerous stage it discounted ($P < 0.0001$) all cows. Hide color influenced ($P < 0.0001$) selling price in beef cattle. Animals that were visibly sick were discounted ($P < 0.0001$). Results suggest that improving BCS and weight, which producers can do at the farm or ranch level, positively impacts sale price. And, animals that are visibly sick or have a defect associated with a possible antibiotic risk will be discounted. Ultimately, animals with minor quality defects should be sold in a timely manner before the defect advances and the discount increases.

TEACHING COWS TO EAT BIG SAGEBRUSH (*ARTEMISIA TRIDENTATA*) TO REDUCE WINTER FEED COSTS AND IMPROVE BIODIVERSITY

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Livestock can eat more of a food high in toxins if they receive appropriate supplemental nutrients. This study examined how supplementation and experience affected intake of sagebrush by cattle. The study was conducted at the Cottonwood Ranch in NE Nevada. Trials began in late October and ended in early November from 2007 to 2009. Each year cattle spent 11 to 14 days in an adaptation paddock followed by five to seven days in a half-acre trial pasture. During the study, cattle were supplemented with grass hay and protein-energy pellets to mitigate the effects of terpenes in big sagebrush. Cattle behavior was monitored using scan samples. Experienced animals consistently ate more sagebrush and either lost less weight or gained weight compared to inexperienced animals. During the study, cow/calf pairs, bred yearling heifers, and first-calf heifer/calf pairs, most ate sagebrush as a significant portion of their diet. Fall grazing also reduced abundance of big sagebrush and promoted production of grasses and forbs in the understory. Over the three-year study, 98 head were trained to eat sagebrush. During the winters in 2010 and 2011 to encourage intake of sagebrush, a portion of the cattle on Cottonwood Ranch were fed half their normal hay ration on sagebrush-dominated rangeland. Cattle were fed for two to three months from January to March during their second trimester of pregnancy. They ate sagebrush through winter and maintained adequate body condition. Cottonwood Ranch will continue to use sagebrush during winter to reduce feed costs.

IMPROVING CALF PERFORMANCE, CARCASS CHARACTERISTICS, AND RANCH PROFITABILITY BY EXTENDING THE GRAZING SEASON WITH WARM SEASON GRASSES AND BRASSICA FORAGES

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Objectives of this research are to determine whether use of warm season grasses and brassicas can extend the grazing season by improving forage quality into the summer and improve calf weaning weight, feedlot performance, carcass characteristics, and profitability. Two treatments (pasture type) were tested. One 15-ac field was planted to Sorghum x Sudangrass (SxS) and brassica forages (forage turnips and grazing radishes) to establish an extended (EXT) season pasture while soil moisture conditions were favorable. An existing 15-ac field with cool season forages such as fescue, ryegrass, and subterranean clover was maintained as a control pasture (CON). Each pasture was divided into 3, 5-ac paddocks (replicates) via electric fence. Because of the unusually cool spring weather, SxS grasses grew slowly and EXT was not ready to graze until late July. Each paddock was then grazed by 5 cow-calf pairs selected from the spring-calving herd. Calves (steers only) were stratified across treatments by weight and age. Forage was monitored for nitrate and prussic acid levels and found to be safe. Cattle were acclimated slowly to treatments and allowed to graze the paddocks until calves were weaned at the end of August. Hay was available in round feeders in the EXT pastures. Pasture samples were collected periodically for determination of yield (availability and residual dry matter) and indicators of quality (protein and fibers), weighed, dried, and stored for laboratory analysis. Initial, intermediate, and final calf weights and cow body condition scores were recorded. After weaning and a 45-day preconditioning period, data for calf feedlot performance and carcass characteristics were collected. Weaning weight was not different between treatments. A second year of the experiment is being conducted, except that the SxS was planted at 60°F soil temperature. Data and economic indicators are being examined and recommendations for utilizing these forages are being formulated.

POTENTIAL FOR *BRASSICA* SPP. AND FODDER RADISHES AS LATE SEASON FORAGES IN THE HIGH DESERT REGION OF OREGON

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Forage brassicas (BRS; *Brassica* spp. and fodder radish (RAD; *Raphanus sativus*) are cold-tolerant, fast-growing crops that have been used as a forage for grazing livestock in many locations. Interest in the potential for forage brassicas to extend fall grazing in the United States has increased in recent years. Significant increases in hay prices have increased winter dietary maintenance costs for beef producers. Extending the fall grazing season could reduce the months harvested forages are required and annual feed costs for cow-calf producers in eastern Oregon and similar regions. *Brassica* spp. and RAD have been successfully planted following harvest of summer annual crops in some U.S. regions. However, research investigating planting dates and cropping systems that successfully integrate forage brassicas for fall grazing in short-season production locations, is limited. The high desert region of Oregon produces small grains on several thousand acres of irrigated farmland. Many small grain acres are harvested for hay in late June to early July. However, grain harvest is typically later, compared with other U.S. regions. The objective was to evaluate the yield potential and viability of BRS (n=6), RAD (n=3), and winter triticale (TRT; n=1) varieties as late season forages. In 2009 and 2010 three planting dates (PD; end-of-July, Mid-Aug, & end-of- Aug, respectively) were analyzed with 2 harvest dates (HD; approximately 60 and 90 d after planting) per PD (4 replications/variety). Plots were arranged in a randomized complete block design with a split plot and no-till seeded at 4, 7, and 100 lb pure live seed/acre (BRS, RAD, and TRT; respectively) into small grain stubble. Yields varied by variety, HD, and year within PD.

SATELLITE MONITORING OF STOCK WATER SAVES TIME AND MONEY FOR SOUTHERN UTAH AND NORTHERN ARIZONA RANCHES

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Ranchers must ensure that livestock have daily water, a challenging and costly task in remote locations. Fifteen southern Utah ranchers, interested in reducing the costs associated with monitoring stock water, installed water level monitors (solar-powered, satellite radio data transmitters connected to a pressure transducer) on their ranches in the fall of 2009 and winter of 2010. The ranchers used the monitors for 1 year and then reported monitor reliability and cost savings. On average, the eleven ranchers who responded to the evaluation saved \$165.00 and eleven hours of time each month during operation. Ranchers reported reliability of the monitors at 88 percent, and all ranchers indicated the monitors transmitted data frequent enough to make management decisions. However, when asked, “Based on your experience with the monitor and assuming you don’t have one, would you purchase one?”, only 63% indicated yes. The other 37% indicated that the upfront costs are too high to justify the savings and/or the upfront costs are excessive for an unproven, experimental monitor. Overall indication is that the majority southern Utah ranchers will rapidly adopt stock water monitors for reducing costs and saving time, while a minority of ranchers will require additional validation before adopting.

A STUDY OF PHYSICAL AND GENETIC INDICATORS OF PORK QUALITY IN ASOTIN COUNTY FAIR PIGS

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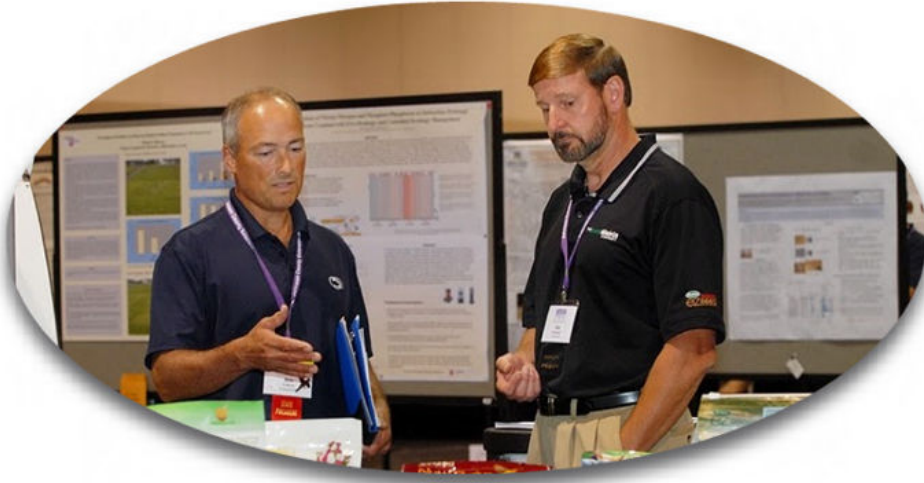
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Local consumers and processors of Asotin County Fair (ACF) 4-H and FFA pigs indicate the meat from fair pigs lack marbling, are pale colored and exhibit excessive water loss compared to non-fair pork. Research indicates pigs bred specifically for the show ring are leaner and more heavily muscled than commercial pigs. Show pigs are also often carriers of the Rendement Napole (RN) and Halothane Stress genes. Hogs expressing the dominant RN allele will have lower ultimate pH levels, affecting the water-holding capacity of pork. Both genes are known to affect pork quality. All 152 pigs were ultrasounded for backfat and loin eye area at weigh-in during the 2010 fair. Sex and breed were recorded and hair samples collected for DNA analyses of each pig. Carcass data were collected on 50 pigs that were processed locally following the fair. Sixty percent (30 of 50) of the sampled pigs were carriers of the RN gene. RN carriers produced pork that had lower pH values ($P < 0.0001$), lower daily gains and were more muscular than non-carriers. Carriers also had loin muscles that tended to be paler in color with less marbling, and greater drip loss. As expected, gilts grew slower, were leaner, had larger loineyes and less marbling than barrows (All significant $P < 0.05$). Genetic differences are probably contributing to the poor pork quality of ACF pigs; however, pre-harvest handling and post-harvest chilling could also be factors. Educational programs and materials will be developed to address pork quality issues with breeders, youth exhibitors, processors and consumers.

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POSTER ABSTRACTS



FOOD AVERSION LEARNING FROM RESEARCH TO APPLICATION

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Diet selection of livestock is extremely flexible. Whether or not livestock eat or avoid a particular plant depends on their prior experience with that plant. Using the principles of diet selection, managers can train livestock to avoid new foods using food aversion training and lithium chloride. In the early 1980s, researchers averted sheep to two palatable shrub species, mountain mahogany and serviceberry. After creating the aversion, sheep grazed university shrub plots to control weeds and promote growth of the shrubs. Aversions can persist for at least three years, maybe longer. Currently, food aversion learning is being used in a number of situations and locations. In California and Colorado, sheep are used to control weeds in vineyards by training sheep to avoid grape leaves. In Utah, goats graze fields of Russian wildrye and Siberian wheatgrass raised for certified seed. They have been trained to avoid the grass and eat the weeds. In Hawaii, goats averted to tar-ramba promote growth of the plant by grazing other plant species in pastures, reducing their competitiveness. Tarramba is an improved cultivar of the forage legume *Leucaena leucocephala* that provides high quality protein and energy to ruminants even during dry periods. This poster will review the research on food aversions in livestock, profile situations where it's currently being used and the do's and don'ts of creating a food aversion.

CONTROLLING WIREWORMS WITH NEONICOTINOID INSECTICIDES IN WHEAT

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Wireworm (*Limoniusspp.*) populations and crop damage have been increasing in wheat (*Triticum aestivum* L.) production across eastern Washington. Today nearly all spring cereal crop acres throughout eastern Washington are treated for wireworms with neonicotinoid insecticides such as Cruiser® (thiamethoxam) or Gaucho® (imidacloprid) at rates between 0.190-0.315 oz/cwt. At these rates, the neonicotinoids are toxic to wireworms but at sub-lethal doses, or in other words they repel or provide only seedling protection. Our objective is to find a labeled lethal dose of neonicotinoid insecticide to reduce wireworm populations. An on-farm test (OFT) was initiated in 2008 to examine spring wheat treated with 2.00 oz/cwt of Gaucho vs. a non-Gaucho treated spring wheat control. At this location frost severely limited yield, however 2.00 oz/cwt Gaucho had a trend for improved yield and economic return over costs, and it reduced wireworm populations by 78%. A second OFT was repeated in 2010. Spring wheat treated with 2.00 oz/cwt Gaucho significantly improved yield, economic return over costs and reduced wireworm populations 41%.

MONITORING DINGY CUTWORM (*FELTIA JACULIFERA*) USING PHEROMONE TRAPS IN MONTANA STATE

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Two species of cutworm, the army cutworm (*Euxoa auxiliaris*) and pale western cutworms (*Agrotis orthogonia*) infest and attack small grain crops in Montana. For more than a decade Montana State University Extension has deployed pheromone traps during August and September to monitor their populations (www.cutworm.org). Numbers of adult moths caught during the fall season provide region-wide advance warning of damage by the larval caterpillars during the following spring season. During the 2007 season, a third cutworm species, the Dingy cutworm (*Feltia jaculifera*), caused extensive damage (>50% crop loss in some cases) in dry pea crops in the MonDac region (Eastern Montana and Western North Dakota). The Dingy cutworm is common in grassy habitats and more than 20 years ago it was predicted that its pest status would increase as a result of the adoption of no-till practices. During the 2010 field season MSU Extension distributed a variety of attractive lures to assess the population of the Dingy cutworm. In some areas of Montana the Dingy cutworm was found to be more abundant than the traditional species, the army and pale western cutworms. Results from the 2010 monitoring program, as well as the responses to different lures will be presented.

INVESTIGATIONS OF THE GORSE THRIPS (*SERICOTHRIPS STAPHYLINUS*) AS A POSSIBLE BIOLOGICAL CONTROL AGENT FOR GORSE (*ULEX EUROPAEUS*)

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Gorse (*U. europaeus*) is a spiny, aggressive, weedy plant that is particularly difficult to control. It spreads rapidly and resprouts from seeds and roots following cutting, fire, or chemical treatment. Seeds remain viable for 30 years or more in the soil. The plant frequently infests grazing land, sensitive habitats, and rugged terrain where herbicide applications and other treatments are difficult or restricted. Traditional control methods have been too costly to apply on a regional scale and gorse has continued to spread. The objectives of this study were to complete host specificity testing of the gorse thrips (*Sericothrips staphylinus*) to determine whether or not the insects will affect non-target plants and determine its impact on gorse. Test plants included crops, native plants, and threatened and endangered species. The thrips appears to be very host specific. We demonstrated that the gorse thrips will kill 2 inches of gorse seedlings in 45 to 65 days. We also found that larger bushes exposed to the gorse thrips exhibited significantly reduced growth compared to bushes without thrips. Mortality took much longer for the larger plants. The gorse thrips could be particularly effective at controlling the flush of new seedlings that typically arise from the seed bank following clearing of mature gorse infestations. The proposed introduction of the thrips is under review for possible field release in 2012.

A STUDY OF PHYSICAL AND GENETIC INDICATORS OF PORK QUALITY IN ASOTIN COUNTY FAIR PIGS

Heitstuman, * M.D.¹, Busboom, J.R.², Nelson, M.L.³, Larson, N.J.⁴

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Local consumers and processors of Asotin County Fair (ACF) 4-H and FFA pigs indicate the meat from fair pigs lack marbling, are pale colored and exhibit excessive water loss compared to non-fair pork. Research indicates pigs bred specifically for the show ring are leaner and more heavily muscled than commercial pigs. Show pigs are also often carriers of the Rendement Napole (RN) and Halothane Stress genes. Hogs expressing the dominant RN allele will have lower ultimate pH levels, affecting the water-holding capacity of pork. Both genes are known to affect pork quality. All 152 pigs were ultrasounded for backfat and loin eye area at weigh-in during the 2010 fair. Sex and breed were recorded and hair samples collected for DNA analyses of each pig. Carcass data were collected on 50 pigs that were processed locally following the fair. Sixty percent (30 of 50) of the sampled pigs were carriers of the RN gene. RN carriers produced pork that had lower pH values ($P < 0.0001$), lower daily gains and were more muscular than non-carriers. Carriers also had loin muscles that tended to be paler in color with less marbling, and greater drip loss. As expected, gilts grew slower, were leaner, had larger loineyes and less marbling than barrows (All significant $P < 0.05$). Genetic differences are probably contributing to the poor pork quality of ACF pigs; however, pre-harvest handling and post-harvest chilling could also be factors. Educational programs and materials will be developed to address pork quality issues with breeders, youth exhibitors, processors and consumers.

BARRIERS TO COLLABORATIVE GRAZING PLANNING ACROSS MULTIPLE OWNERSHIPS TO MAINTAIN OPEN SPACE AND WILDLIFE HABITAT IN WASHINGTON SHRUB-STEPPE ECOSYSTEMS

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This case study examines a group of stakeholders and interested publics in Kittitas County who used the Coordinated Resource Management process to develop a grazing plan that would protect plant communities and improve forage quality for elk on a checkerboard ownership landscape. This group's objective was to develop and implement a single, unified, scientifically sustainable grazing management plan with all of the landowners in the CRM boundary that would maintain or improve elk habitat. Rangeland technicians conducted a comprehensive survey of the area to ground truth soils data and prepare a grazing plan. Following completion of an Environmental Impact Statement for the public land that had not been grazed recently the Western Watersheds Project filed a lawsuit against the State. The utility company implemented the grazing plan as proposed and has installed range improvements to facilitate proper livestock distribution. The game department, having prepared a sound grazing plan and acting within their authority to implement it, was forced to suspend implementation until a civil judge could evaluate the merits of the science behind the conclusions and recommendations contained in the Environmental Impact Statement based on the objections of a non-stakeholder group in a different state. Groups set to oppose grazing are opposed to grazing even when there is monitoring data and scientific background sufficient to prove that the grazing, as applied, is doing no harm. The social component of sustainability must be a primary focus when grazing livestock on public lands. Early and frequent communication with the most vociferous opponents may be an uncomfortable but necessary course of action prior to implementation. Objective rangeland health monitoring data is also valuable in avoiding rhetoric and centering discussion or negotiation around on-the-ground truths.

COMMUNITY GARDENS AS A LEARNING TOOL FOR CONSUMER HORTICULTURE CURRICULUM

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Food security and provide fresh healthy food to all community members is a goal of Gardeners for Regional Organic Wellbeing Organization. The GROW! Organization teamed up with University of Idaho Extension in Boundary County to create a community garden. The GROW! Community Garden offers plots for residents to borrow and grow their own organic produce. The garden also grows vegetables that are donated to the area food bank. In addition, the community garden includes demonstration gardens and classes. Boundary County Extension, with the help of the Master Gardeners, coordinates the demonstration gardens and classes held in the garden. It has been a great learning tool for adults and children who participate in the classes. Hands on adult classes have included composting, succession planting and insect and weed identification and control. Demonstration gardens have also been helpful as a teaching tool. The Three Sisters style of inter-planting is featured this year along with an ongoing display of irrigation techniques. The GROW! Community Garden and the University of Idaho Extension have been able to offer gardening space and the education to help make those gardeners and others more productive.

TOP TEN THINGS TO KNOW ABOUT METHYL BROMIDE: A RASPBERRY NURSERY SURVEY

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Raspberry nurseries rely upon soil fumigation with Methyl Bromide (MB) to avoid problems with soilborne pathogens and weeds. Until recently, raspberry nurseries qualified for a Critical Use Exemption for MB. This has been discontinued, and pressure is building for nurseries to adopt alternatives. As part of a larger project to develop and demonstrate MB alternatives for raspberry nurseries, we developed a survey to assess the knowledge, attitudes and beliefs of raspberry nursery operators concerning MB and alternative fumigants. We also asked nurseries which sources of information they value the most, and questioned them about their priorities for future research. The results of the TOP TEN THINGS TO KNOW ABOUT METHYL BROMIDE: A RASPBERRY NURSERY SURVEY instructs Research and Extension personnel to focus on economic analysis and on-site trials if they want to convince raspberry nurseries to adopt alternatives. These efforts could build nurseries' confidence in alternatives, which is presently low. They should work closely with custom fumigators, the most influential source of information for nursery operators. Nursery operators are receptive to electronic communication. Most nursery operators don't believe that fumigation with Methyl Bromide causes substantial ozone depletion, so it will take significant monetary, regulatory or other motivations before they change this practice.

EFFECTS OF SUPPLEMENTAL VITAMIN E AND OIL SOURCE ON THE PERFORMANCE OF PRECONDITIONED BEEF CALVES

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Sixty-four Angus-cross calves were used to evaluate supplemental vitamin E with or without supplemental oil sources during a 35-day preconditioning period on subsequent feedlot gain and immune response. Preconditioning dietary treatments were: CON (corn-soybean meal base diet), SE (base diet plus 68 IU supplemental vitamin E per lb diet), ELA (SE diet plus 1.5% safflower oil), and ELNA (SE diet plus 1.5% linseed oil). Following preconditioning, calves were shipped to a commercial finishing feedyard. On arrival at the feedyard and again at 20 days post-arrival, all calves received a modified live intranasal vaccine for Infectious Bovine Rhinotracheitis (IBR) and Parainfluenza-3 (PI₃) to stimulate an immune response. No differences ($P>0.10$) were detected for ADG (1.32, 1.14, 1.48, and 1.18 lbs/day respectively for CON, SE, ELA, and ELNA) during the preconditioning period or the finishing period (2.61, 2.62, 2.59, and 2.46 lbs/day respectively for CON, SE, ELA, and ELNA). There were no differences in carcass characteristics across dietary treatments ($P>0.10$). Morbidity rates were less than 1% and consistent across treatments. Supplementation of vitamin E resulted in greater amounts of IBR titer at day 35 and day 36 ($P<0.05$). The SE calves had higher PI₃ titers ($P<0.05$) at day 35 compared to ELA or ELNA calves. However, no differences ($P>0.10$) were detected for PI₃ titers after the preconditioning period. Supplementation of preconditioning diets with vitamin E with or without dietary essential fatty acids showed limited improvement in subsequent feedlot gain or immune response indicators in weaned beef calves.

USING TODAY'S TECHNOLOGY TO PROVIDE LIVESTOCK EDUCATION TO TODAY'S YOUTH

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4-H youth raising livestock projects used to receive their basic animal production skills from their 4-H Leaders. Twenty years ago many livestock 4-H Leaders made their living from animal production, but many now have nonagricultural jobs and may have raised very few animals. This situation has caused the need for Extension agents to switch from providing new innovative practices in their seminars to providing more basic animal production information. With fewer livestock agents across the state, there is insufficient time to adequately educate new leaders and 4-H youth on basic animal production. We have begun a new era of learning and youth are used to having access to information 24 hours a day. Providing 4-6 minute (YouTube-like) videos on basic animal production topics will enable 4-H Leaders and 4-H youth to find what they need when they need it. The topics will include animal selection, fencing, shelters, feeders, pasture, feeds, reproduction, and health issues. Videos will be peer reviewed for quality control and branded for easy access in a web search. The website will include print content to augment the videos. 4-H participants' knowledge, attitudes, and practices will be determined by a follow-up survey. The intended outcome of the Youth Livestock Video Program is to increase knowledge of best production practices leading to changes in the attitudes and actions of youth regarding livestock production. This, in turn, results in healthier and higher quality livestock.

EFFECT OF TIME-OF-YEAR ON CUT STUMP GLYPHOSATE TREATMENT OF RUSSIAN OLIVE (*ELAEAGNUS ANGUSTIFOLIA*) IN EAST-CENTRAL UTAH

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Russian olive is an invasive, woody species that is overtaking riparian areas and pastures in the Western United States. Studies show that diversity of avian and mammalian species decrease as Russian olive replaces native vegetation. Its thorns discourage livestock grazing and are hazardous to humans and farm equipment. A frequent treatment in western pastures is to simply remove the trees with heavy equipment. The result is shrubby, sucker growth. For effective initial control the roots must be killed, which will require either regular tillage or chemical application. The label of one glyphosate product states, "For best results, [cut stump] applications should be made during periods of active growth and full leaf expansion." The major concern with the growing season application is that farmers and ranchers are busiest during that time of year, so Russian olive control is moved toward the bottom of the list of things to do. This field trial was to determine which times of year a cut stump application of glyphosate would be most effective. From December 2009 through November 2010, six Russian olive trees were cut down each month. Three stumps were immediately treated with undiluted 41% glyphosate herbicide applied to the cambium layer at the rate of 1 cc herbicide per inch of trunk diameter. Three stumps were untreated controls. The results indicate that 100% dormant and growing season control can be achieved with cut stump treatments of glyphosate on Russian olive, thus allowing farmers and ranchers more time to schedule Russian olive control.

4-H AND FFA YOUTH HORSE FIELD DAYS: BUILDING COMPETENCIES FOR SUCCESS

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In Southeast Washington and North Idaho, 30% of the youth enrolled in the 4-H program are enrolled in equine projects. With concerns over liability, personal safety, animal care, and youth desiring to improve their judging, riding and handling skills, there was a need to provide subject matter information to a diverse audience from a large geographic area. Youth Horse Field Days focused on providing knowledge and skills to youth, leaders and parents to insure safety and success in the equine project. During late winter, the field days were held in a central location in the region. Topics for the field days included: Horse Judging, Conformation and Oral reasons, Equine First Aid, Fitting & Showing, Western & English Pleasure, Stockseat & English Equitation, Trailer Safety, Horse Nutrition and Trail Horse, Reining and Dressage Demonstrations. Speakers for the field days included: professionals, extension staff, veterinarians, 4-H leaders, and WSU students. Registration was set at a nominal \$5 per person and included lunch. The field days were well attended with audience size ranging from 20 to 100 participants. Each field day was evaluated using a retrospective evaluation. Knowledge gains were reported in judging, oral reasons, understanding the judge's point of view, first aid, riding and handling skills, and health care. Participants rated the field days as an excellent opportunity to gain relevant knowledge, skills and competencies in the 4-H Equine Project. The Youth Field Day methodology has proven to be a very effective means of presenting relevant information to the 4-H Equine audience.

WASHINGTON WILDERNESS HAY AND MULCH (WWHAM) PROGRAM: A SOLUTION TO AN INVASIVE PROBLEM

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Hay, straw and mulch can contain viable noxious weed seeds and germinable plant parts if grown in fields where weeds are allowed to flourish. These weeds can be spread into new areas by animal feed and mulches used for erosion control. Verifying that animal feed and mulch is weed free before it is used in an area can prevent the spread of weeds. The most effective, economical, and ecologically sound approach to managing invasive plants is to prevent them from invading. Land managers often concentrate on fighting well-established infestations, at which point management is expensive and eradication is unlikely. The Washington Wilderness Hay and Mulch (WWHAM) program was established in 2007 by the Washington State Noxious Weed Control Board. Forage transported into all wilderness areas and adjacent trailheads in PNW National Forest was required to be commercially processed feed pellets and/or certified weed-free hay and/or straw. In 2009, these previous requirements were placed into affect for all US Forest Service lands. The purpose of this program is to prevent the further spread of invasive noxious weeds.

EVALUATION OF SEED TREATMENTS FOR SWEET CORN IN THE COLUMBIA BASIN OF WASHINGTON

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The International Sweet Corn Development Association (ISCDA) selects treatments for a multi-location seed treatment trial every year. Researchers from across the country evaluate the selected treatments for their effectiveness against seed-borne and soil-borne diseases that affect sweet corn stand and vigor. WSU Extension and the sweet corn industry in the Columbia Basin of Washington have participated in the trial for many years. The 2010 ISCDA Columbia Basin Seed Treatment Trial was established in a sweet corn field near Mattawa, WA to evaluate 27 seed treatments, including conventional and organic products, on sweet corn (var. SS Jubilee). Experimental design was a randomized complete block with four replications. Seeds were planted on 5 April, 2010. Stand counts and vigor ratings were recorded on 19 May, 2010. Data were subjected to ANOVA and means were separated using the Student-Newman-Keuls Test. Cool weather conditions at planting delayed germination and contributed to reduced stands and poor seedling vigor in the trial. The average stand count was only 24%, but mean stands for the treatments ranged from 1% to 72%. Ten of the 27 treatments had significantly higher stand counts compared to the untreated check (UTC). Seed treatments with the active ingredients captan, thiram, or carboxin consistently resulted in higher stands compared to the UTC. The seed treatments containing the organic fungicide, Agricoat Organic, did not perform any better than the UTC. This trial provides unbiased information about seed treatment products and helps identify the best performing seed treatments for sweet corn in the Columbia Basin.