16th NACAA Western Region Professional Improvement Conference

October 24 - 25, 2017
Albuquerque, New Mexico
Crowne Plaza

PROCEEDINGS

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Merck Animal Health
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16th NACAA Western Region Professional Improvement Conference

October 24, 2017

NM State
College of Agricultural, Consumer and Environmental Sciences
New Mexico State University
Track 1: Livestock/Community Development 1:00 – 5:30 pm (Break 3:00 – 3:30 pm)

Sara Baker       Young Cattlemen’s Conference Produces Leaders in Idaho
Sid Gordon/Jack Blandford       New Mexico Youth Ranch Management Camp
Dennis Worwood       Non-Chemical Method to Minimize Suckering from Uprooted Russian Olives
Ron Patterson       Comparison of Herbicide Treatments on Russian Olive Regrowth
Ashley Wright       Engaging Graham County Ranchers in Their Communities to Increase Knowledge and Build Relationships
M.L. Robinson       Safety for People and Venomous Reptiles
Donald Martinez       Creating a Community Equine Expo aka Rio Chama Equine Expo
Sarah Baker       4-H Rangeland Skill-a-thon Teaches Youth about Idaho Rangelands
Karah Nay       Equine First Aid Information Flip Booklet
Newt McCarty/Laura Bittner       Food Camp for Kids: Experiential Camp Connecting Youth to the Source of Their Food
K. Scott Jensen       Social and Community Assessment for Owyhee County
Ashley Hall       Improving Rancher Adaptability for Drought through Extension Programming

Track II: Crops/Natural Resources 1:00 – 5:30 pm (Break 3:00 – 3:30 pm)

Helen Muntz       Evaluation of Water Check Program in Cache County, Utah
Sheila Gray       The Road to Creating a Collaborative ‘Fresh From the Farm’ Guide for Lewis County
Jody Gale       Reducing Nitrogen Fertilizer Inputs For 1st and 2nd Year Corn Following Alfalfa in Utah
Stephen Brown       Understanding GPS Coordinate Formats and Datums
Del Jimenez       High Tunnel Production
Stephen Renquist       Establishment Trends of Brown Marmorated Stink Bugs in Hazelnut Orchards in Douglas County Oregon
Dedric Despain       Cover Crops; Impacts, Impacts, Impacts on Forage Quality, Soil Health, and High Intensity Grazing
Nicole Anderson       Oregon’s Forage and Turf Grass Seed Production
Caitlin Youngquist       Learning and Growing in the Worland Community Garden
Carmen Willmore       Analyzing the Contribution of Agribusiness to the Magic Valley Economy
Sheila Gray       And the Survey Says...Methods and Outcomes for Extension Outreach Offerings
Donald McMoran       P.E.S.T.: How to be the First in Your County to Identify New Invasive Insects

The College of Agricultural, Consumer and Environmental Sciences is an engine for economic and community development in New Mexico, improving the lives of New Mexicans through academic, research, and extension programs.
16th NACAA Western Region Professional Improvement Conference

October 25, 2017

7:45 am – Depart hotel

8:30 – 9:30 am – Silver Leaf Farms – Corrales, NM

Silver Leaf Farms grows USDA Certified Organic and pesticide-free vegetables for local farmers’ markets, fine restaurants, premium grocers, and schools located in the Albuquerque/Santa Fe area. They have been locally owned and operated in Corrales, NM for the past 8 years.

10:15 – 11:45 am – NMDA Veterinary Diagnostic Lab Tour

NMDA’s Veterinary Diagnostic Services Division conducts diagnostic analysis of animal specimens on a referral basis from veterinarians and agencies to determine the cause of deaths or to identify diseases. These specimens range from a tube of blood or piece of tissue to a large animal. Our pathologists and in house scientists work together with the New Mexico Department of Health’s Scientific Laboratory Division (located in our same building) and subcontracting labs to fulfill our mission: To provide accurate, timely diagnostic support in the pursuit of animal disease diagnosis for the citizens of New Mexico, including the livestock industry and the veterinary profession.

12:15 – 12:45 pm – Lunch

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12:45 – 2:15 pm – Gutiérrez-Hubbell House Farm and Historical Tour

The Gutiérrez-Hubbell House is a 5,700 square foot adobe structure that dates back to the 1860’s and symbolizes the mixing of Spanish, Anglo and Native American traditions & cultures during the Territorial Period, 1848-1912. Listed on the State Register of Cultural Properties, this historic house sits on 10 acres of Open Space Land, which was purchased by Bernalillo County in November 2000. Bernalillo continues to maintain the land and structure through our Joint Use Agreement. Situated along El Camino Real, the oldest continuously used European roadway in North America, the Gutiérrez-Hubbell House was once a private residence, mercantile, trading post, stagecoach stop and post office. Today, the Gutiérrez-Hubbell House History and Cultural Center is a center developed to document, research and preserve history, maintain open spaces, protect wildlife habitat and teach agricultural heritage. The property is a venue for retreats, workshops, meetings, weddings, festivals and farming workshops.

3:00 – 4:30 pm – NMSU Agricultural Science Center at Los Lunas

The Agricultural Science Center at Los Lunas was established in 1957. The center primarily serves the Middle Rio Grande area and portions of central New Mexico. Research programs are as diverse as the landscape and strive to meet the needs of both large and small farming operations as well as urban horticulture. The station is uniquely situated to address a wide array of urban and rural issues associated with crop and home garden production. Current research programs are focused on improving understanding of an integrated pest management approach to insect control while maintaining beneficial insect populations. In addition, forage research conducted at the center is aimed at finding the most efficient and cost-effective ways to produce alfalfa and other hay and pastures for the diverse animal industries in the region. Other programs include: chile breeding and production, weed control in vegetables, pollinator insect collections, and fruit and nut tree research.

5:30 pm - Dinner

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**Sustainable Agriculture Fellows Adventure**

*Palmer, M.D., Utah State University*

Extension programs are developed and implemented in a wide range of disciplines including agriculture, natural resources, youth development and horticulture. Citizens that are served also require a broad knowledge base to improve their farms, ranches, families, yards and gardens. Sustainable agriculture concepts bring all of these disciplines together to improve natural resources, financial viability and the quality of life. Sustainable Agriculture concepts can be gained at a special training program called SARE Fellows. Applicants are selected from four regions of the U.S. Four selected SARE Fellows receive all-expense paid training trips to the four regions over a two-year period. This training helps to improve the ability of agents to develop sustainable educational programs in a wide variety of areas and are better equipped to help citizens conserve natural resources, become financially viable and improve quality of life.

**Agriculture Extension Abroad**

*Van Vleet, S.M., Washington State University*

Agriculture can be similar no matter where you conduct it across the world. For the past 9 years I have been conducting agriculture trainings throughout the Middle Ease and Eastern Europe. I will give you an in-depth view into agriculture in Afghanistan, Ukraine and Moldova. Many of these countries under conflict need help with agriculture practices. Not only are they suffering from extreme erosion but the use of outdated management practices is still implemented on many farms. The need for Extension is a top priority in most of these countries in need. Extension can play a vital role in helping producers, not only to be able to feed their families, but provide stability throughout the country. Several training farms have been established throughout Afghanistan over the past 6-years focusing on training the local producers and government “Extension” in agriculture production. Demonstration farms have also been setup in Moldova and Ukraine to help educate producers on current and sustainable agriculture practices. See my journey as an agriculture Extension agent in agriculture production throughout these countries.

**Western Winners: Applying for NACAA Communication Awards**

*Hopkins, B., New Mexico State University*

The Western Region of the NACAA has historically submitted for fewer awards that the other regions, in some categories, none at all, and it’s time we recognized all of the hard Extension work being done. This presentation will highlight tips and tricks to applying for awards as well as ideas on how to create materials that cater directly to NACAA award programs. During the presentation, we will review successful submissions, as well as submissions that could use improvement; modeling good abstracts for the participants. The presentation will also include deadline information and other key information needed to submit awards in a timely manner. Let us put the Western Region back on the map, and surprise them all with the great talent we have here in our region!
Young Cattlemen’s Conference Produces Leaders in Idaho

Baker, S.D., Church, J., and Willmore, C., Idaho State University

The cattle industry in Idaho is one of the leading agriculture industries in the state. Cattle and calves are ranked second only to milk for all Idaho agriculture commodities in terms of cash receipts. In 2015, University of Idaho (UI) College of Agriculture and Life Science (CALS) administration charged the Animal and Veterinary Sciences (AVS) Department and Extension faculty to develop a Beef Program of Distinction (Beef POD). Extension faculty hosted listening sessions across Idaho and gathered input from cattle producers to identify and develop Extension education programs and research that would meet the needs of the beef cattle industry within the state. One issue identified was the need to educate young beef producers about the industry and the importance of becoming involved. A committee of Extension faculty, cattle producers, and allied industry representatives was formed to address this issue. The committee developed a three day conference called the Idaho Young Cattle Producer Conference (YCC), which was held in Twin Falls in June, 2017. The conference was limited to 20 participants, whom had to be nominated and selected by the committee, and had to be younger than 40 years of age. The YCC’s primary objective was to develop leadership qualities in young cattle producers and expose them to all aspects of the beef industry through educational presentations, hands-on learning, and industry tours. Topics from the YCC included: overview of the cattle industry, meat cutting demonstration, issues facing young cattle producers, financing a cattle operation, risk management, herd health, public land grazing, and becoming involved in the industry. Tour stops included a cow-calf operation, packing house, feedlot, and a purebred Angus operation. Twenty young cattlemen participated in the first YCC and were evaluated following the conclusion of the program. All of the participants surveyed indicated they would recommend this conference to others. On a scale of 1 – 5 (1 = not at all; 5 = very likely), the average response of participants was 4.9 was asked “Will what you learned and experienced at YCC provide economic value to your operation?” and “Do you intend to put any of what you learned to use in your operation?” With the beef industry changing so rapidly, identifying and educating leaders to help guide and strengthen the industry has never been so important. With the excellent evaluations and feedback from industry, University of Idaho Extension will continue to take the lead in educating and providing opportunities to young cattle producers in the state of Idaho and will plan and conduct another YCC in 2018.

New Mexico Youth Ranch Management Camp

Gordon, S., Blandford, J., New Mexico State University

Regional meetings sponsored by NM Beef Council targeted the beef producers/ranchers throughout the state of New Mexico in order to facilitate sessions and gain knowledge on what issues producers were facing in the industry. Among the top concerns included the training and career exploration of youth to the ranching industry. With today’s aging population in management positions in agriculture there is a large gap in younger up and coming youth willing to take the reins in the family operation or otherwise. In response to such dire statistics NMSU Cooperative Extension along with industry clientele and NM Beef Council produced the New Mexico Ranch Management Camp for youth ages 15 – 19 years of age. The camp is a five day event that focuses each day on a themed topic of ranch management skills and education. Themed days consist of Beef day, Range Management, wildlife management and marketing economics.
Non-Chemical Method to Minimize Suckering from Uprooted Russian Olives

Worwood, D. R., Patterson, R. K., Utah State University

Russian olive (*Elaeagnus angustifolia*) generate numerous crown shoots and/or root suckers after trees are mechanically removed. Extension conducted trials of burial or burning as alternatives to herbicides to control shoot and sucker production. Newly-cut Russian olive stumps were buried, burned, or left as-is. Other Russian olive trees were shredded to ground level using a Fecon grinder; half of the crowns were buried and the remainder left as-is. No herbicides were applied. Neither burying nor burning stopped shoot production from crown tissue, although burned stumps produced fewer shoots than control. Sixteen Russian olive trees were uprooted. Broken and exposed roots of eight were buried, while roots of the others remained exposed. Twelve months later unburied roots had an average of 38 suckers per tree while buried roots produced a total of one sucker. Trenches were dug completely around six Russian olive trees, severing all roots encountered. Half of each trench remained open and the other half backfilled to ground level. Roots in open trenches produced an average of 32 suckers per tree; only one sucker (total) emerged from buried roots. Burial or burning did not prevent regrowth from crown tissue, but burying exposed roots nearly eliminated sucker production.

Comparison of Herbicide Treatments on Russian Olive Regrowth

Patterson, R. K., Worwood, D. R., Utah State University

Russian olive (*Elaeagnus angustifolia*) was declared a noxious weed in Emery County (Utah), and the County Weed Department helps landowners control it. Most landowners mechanically uproot live trees, triggering rampant regrowth from exposed and broken roots that is denser than original stand of trees, and difficult to kill. One landowner reported less than 10% control of Russian olive regrowth after two years of fall foliar treatment with Triclopyr herbicide. In 2016 USU Extension conducted herbicide trials on three year old Russian olive regrowth. Basal bark treatments of Triclopyr ester in diesel fuel were applied in April and September, 2016. Foliar sprays of Capstone (Triclopyr plus Aminopyralid), Picloram and Glyphosate were applied in September, 2016. Treated and untreated clumps of regrowth were evaluated in August, 2017 as controlled (no live stems) or not controlled (one or more live stems per clump). April and September basal bark treatments resulted in 100% and 84% control, respectively. Capstone controlled 41% of treated clumps, while Picloram and Glyphosate controlled 93% and 91%, respectively. All untreated clumps were alive and vigorous. These results are being shared with landowners, and have prompted the County Weed Department to modify its herbicide treatment practices.
Engaging Graham County Ranchers in their Communities to Increase Knowledge and Build Relationships

Wright, A. D., University of Arizona

While UA Cooperative Extension has a significant presence in Graham County, there had not been a livestock production agent in several years. Following a Graham County Rancher focus group and the results from a survey of Arizona’s Livestock Producers the need for cow-calf operation programming was evident. The Graham County Rancher Round Table series was created to reach small groups of ranchers in their rural communities and facilitate an exchange of ideas and information among ranchers, Cooperative Extension agents and specialists, industry professionals, and their peers. This pilot year has included 5-6 meetings from November 2016 to October 2017. Each two hour evening event has a topic and speaker (approximately 1 hour) with the rest of the event dedicated to discussion and an opportunity for one on one interactions with the presenter and each other. Evening events were well received, and several “early adopters” leveraged their connections in the ranching community to bring attendees to the first events. Encouraging open discussion was initially a challenge. Ranchers often do not speak up regarding issues they may be having in a group setting. The first event had no questions following the presentation, however attendees opened up significantly after the event. Creating time to socialize with the speakers and each other was invaluable to promoting discussions and establishing relationships, subsequent events have had more open dialog. In addition to the Rancher Round Table events, Graham County livestock producers receive a quarterly newsletter (Arizona Range and Livestock News) put out by Arizona Cooperative Extension specialists and agents in livestock and range management from across the state. The Graham County Farm, Home and Ranch Day (held in February or March) is opportunity for a full-day workshop with hands on demonstrations to complement the Rancher Round Table topics discussed during the year. The regular interactions with producers has increased attendance at other Graham County Cooperative Extension rancher events, which had been inconsistent in the past. The project is one piece of rancher education programs in Southeastern Arizona. Formal evaluations will follow the final event in October 2017 to determine its success.

Safety for People and Venomous Reptiles

Robinson, M. L., O’Callaghan, A., University of Nevada

Human populations continue to expand in urban areas with housing, and in rural areas with farms, ranches and vineyards. As a result conflicts between humans and venomous reptiles continue to grow. Heightened respect for snakes has led to a desire to relocate rather than kill venomous reptiles. However, venomous snake relocations can be dangerous to both humans and reptiles. It may ultimately result in the death of the reptile. To address a need for a sound safety and science based training, I have been working with the local Department of Wildlife, South West Partners for Amphibian and Reptile Conservation (SWPARC) and Extension, developing and teaching a program on venomous reptile capture and relocations. To date, we have implemented the training at mines, national parks, schools, factories, and local herpetology clubs. The program has several elements: (1) Introduction, Overview of Venomous Reptiles, and Habitat Modifications, (2) Science of Moving and Relocating Venomous Reptiles, Moving only for Legitimate Safety Risks, Relocation Distances, (3) Safe Capture and Transport, Tools of the Trade, Hands-on Training, (4) Pets and Venomous Reptiles, (5) First-aid and Emergency Protocols, (6) Release Forms, Certificate of Training and Attendance. The end goal of the program is to develop a standardized program for Extension and PARC through a working group and provide training to interested parties.
Creating a Community Equine Expo aka Rio Chama Equine Expo

Martinez, D., New Mexico State University

This promotional flyer and accompanying letter of invitation were prepared in 2014 to invite youth and equine enthusiasts from northern New Mexico to an Equine Expo. The invitation and flyer were sent to over 100 individuals that have displayed an interest in equine programs. The invite also included local, regional and statewide equine associations. The purpose of the piece was to offer horsemanship clinics to the youth in the region as well as to gather newcomers to the area that have a passion for youth equestrian activities or have expressed interest in equestrian activities to learn from. These events were created regardless of specific riding disciplines. Integration of new residents and local youth to collaborate was established for a fun and educational community event. The action required was to have someone take the lead in establishing a community event. The agent created the first event with minimal assistance. After the first event, the response was phenomenal. An eight-member volunteer committee has recently be established and currently the Rio Chama Equine Expo is in its fourth year. Fifty-six evaluations of the program were returned for rating the success of the program. The majority of evaluations (consistently >95%) “agreed” or “strongly agreed” that “the information presented was informative and useful to me as a horse owner”. Furthermore, the majority of evaluations received a rating (consistently >65%) of “agreed” or “strongly agreed” that “the information presented has led me to change my attitude or reconsider the beliefs” for each specific topic.

4-H Rangeland Skill-a-thon teaches Youth about Idaho Rangelands

Baker, S.D., Roland, C., Willmore, N., and Hulet, A., University of Idaho

Nearly half of Idaho is classified as rangeland. Eighty percent of rangelands are managed by either a federal or state agency. It is important that Idahoans who live and use these lands understand the ecology of Idaho’s rangelands and how these public lands are managed. The Idaho 4-H Rangeland Skill-a-thon was created to help educate and familiarize students with the vast rangeland resources of Idaho. The contest is a hands-on, outdoor science activity that provides opportunities for youth to gain and develop rangeland, natural resource, wildlife, and livestock knowledge in a pleasant, yet competitive environment. The event is formatted similar to other 4-H Skill-a-thons to help develop life skills in youth, including working with others, communicating, making decisions, and leadership. The Skill-a-thon is conducted by University of Idaho Extension, the Idaho Rangeland Resource Commission, and the Idaho Soil and Water Conservation Commission. The state contest qualifies participants to attend the national Wildlife Habitat Education contest. During the Skill-a-thon, junior and senior teams tour a local ranch that utilizes public lands grazing permits. The teams compete individually in plant and wildlife identification contests, a soil identification and texturing contest, and provide on-site recommendations of rangeland, wildlife, and livestock management practices to a judge based off of information gathered during the tour. Team activities include creating a written wildlife management plan utilizing a scenario given to teams prior to the contest that involves an issue related to wildlife and livestock utilizing public rangelands, creating a 3-D model of the management plan, and an oral presentation of the management plan. The 4-H Rangeland Skill-a-thon was created in 2015 in Idaho and a contest has been held each year since then. A total of 210 youth have participated in the contest since its inception. Post event feedback and evaluations have indicated youth are acquiring new knowledge, gaining life skills, and learning about Idaho rangelands, their ecology, and their management. A curriculum and study guide are currently being developed by UI Extension Educators to aid in the further development and expansion of the contest.
Equine First Aid Information Flip Booklet

Nay, K., Utah State University

Through extension programming targeting equine owners, a need for basic equine first aid was recognized. In many cases, owners do not know what warning signs to be looking for or how to look for them when evaluating their horse. Many owners use extreme caution and take their animal to the veterinarian for problems that could have been addressed at home, while other wait until it is too late to treat the condition. Considering the varying levels of knowledge and experience, the Equine First Aid Information flip booklet was designed to fit in a readily available equine first aid kit. This flip booklet provides basic information, such as average temperature, heartbeats per minute, gut sounds, signs of colic, vaccination and deworming programs, along with providing a list of first aid supplies to keep on hand at all times. Distribution will consist of an online PDF, emailed links to all State Horse 4-H members, and circulation through all county extension offices.

Food Camp for Kids: Experiential Camp Connecting Youth to the Source of Their Food

McCarty, N., Bittner, L., New Mexico State University

Research suggests society is often disconnected with the source of their food. For youth, this disconnect is even greater. Food Camp for Kids is a six-day experiential program focused on providing youth ages 9 – 14 with an understanding of from where their food comes. During the two 36-hour summer sessions, youth visit farms, suppliers, processors, dairies, bakeries, grocery stores, farmers’ markets, flourmills, locally owned restaurants, and value-added wholesalers and retailers learning the food production chain. Food Camp for Kids provides understanding of agriculture while improving critical life skills (self-confidence, communication, writing, public speaking, teamwork, collaboration, negotiation, social and environmental responsibility, and personal accountability) through observation and participation. Youth document experiences through pictures and video utilizing iPads. Group activities lead to comprehensive and applicable knowledge of agriculture in relation to nutrition, physical activity, meal planning, recipe selection, budgeting, and food preservation. Through individual oral presentations youth demonstrated an increase in understanding of agriculture and sources, nutritional value, and preparation of food. Furthermore, youth expressed greater awareness of career opportunities in the areas of agriculture, retail, processing, technology, communication, nutrition, food service, and entrepreneurship.

Social and Community Assessment for Owyhee County

Jensen, K.S., Wulfhorst, J.D., Rimbey, N., Lewin, P., University of Idaho

Owyhee County is one of the largest rural counties in the Western United States. It is steep in heritage however it is also vulnerable to rapid change and issues arising from nearby urban and suburban growth. Owyhee County is also nearly 80% public land which is predominately sagebrush steppe ecology. These rangeland ecosystems face threats and challenges by invasive plants and increasing wildfire all of which threaten wildlife and ranching operations. This study provides an update of the human landscape and changes in relation to community cohesion, recreational activities, and resource management perspectives affecting daily life in the County. The overall objective of the study focused on providing the County an update on trends for its local communities and long-term planning/decision-making needs.
Improving Rancher Adaptability for Drought through Extension Programming

Hall, A., University of Arizona

University of Idaho (UA) Gila County Cooperative Extension began the Reading the Range program in 2000 at the request of stakeholders to collect rangeland monitoring data in cooperation with grazing permittees and Tonto National Forest (NF) personnel. In Gila County, grazing occurs on approximately one million acres of rangelands on the Tonto NF. Reading the Range provides a critical need by providing information quantifying rangeland health and the sustainability of livestock grazing. With drought becoming an increasing concern for ranchers in Gila County UA faculty, Tonto NF personnel and grazing permittees came together to form the Rangeland Precipitation Monitoring Working Group. Feedback from this group indicated the need for tools to monitor drought and precipitation on a ranch-scale basis, which led to the creation of MyRAINgeberLog and Standard Precipitation Index Explorer Tool. By integrating precipitation and drought monitoring as a new component to Reading the Range it will improve interpretation of vegetation changes. Over time, ranchers and land managers can make site specific connections between precipitation observations and vegetation data to potentially get an idea of what the conditions might look like based on a particular years precipitation. These connections will be key in understanding drought triggers and how precipitation events will influence future forage conditions, allowing ranchers to be flexible with management decisions in order to prepare for future drought conditions.

Evaluation of Water Check Program in Cache County, Utah

Muntz, H., Utah State University

Water conservation has been a large research focus in response to drought conditions and population growth throughout the United States, particularly in the area of outdoor water use. Utah residents with automatic irrigation systems overwater their landscapes by 50%. In efforts to promote landscape water conservation, free sprinkler system audits, or “Water Checks” were offered to homeowners in Cache County, Utah. The Cache County Water Check Program focused on equipping homeowners with the knowledge to maximize their irrigation system efficiency, and provided site-specific irrigation schedules. Water Check programs are unique in that they focus on on-site education for the homeowner with face-to-face explanation of the audit results. The Cache County Water Check Program was facilitated directly through the County Extension office, and was therefore evaluated on the County level. Program Impacts assessed knowledge gained and behavioral changes among Water Check participants via retrospective surveys. Surveys were delivered via email, through Qualtrics survey software. According to survey results, the average increase in knowledge was 49% and a 31% increase of positive changes in irrigation behavior. In addition to positive behavioral change, 48% of participants claimed to have been able to reduce their landscape water use as a result of the Cache County Water Check Program.

The Road to Creating a Collaborative ‘Fresh from the Farm’ Guide for Lewis County

Gray, S. L., Washington State University

“Many hands make light work.” When the suggestion of creating a long overdue local farm guide came to my desk, my thought was, “how am I going to get this done?” And shortly thereafter a multi-agency committee was formed, meetings were held, benchmarks were set to create an end product; the ‘Fresh from the Farm’ Guide! I will walk you through the steps of finding partners (and funds!) to accomplish a project that not only serves your local region, it provided awareness and visibility to your extension office as a project partner, is a valuable resource to your community and in the end created both a handy hard copy guide and an online interactive version too!
Reducing Nitrogen Fertilizer Inputs for 1\textsuperscript{st} and 2\textsuperscript{nd} Year Corn Following Alfalfa in Utah

Gale, J.A., Shafer, B., Cardon, G., Creech, J.E., et.al., Utah State University

Corn acreage is increasing in Utah due to dairy industry growth. It is grown on approximately 84,000 acres ranking second to alfalfa on 580,000 acres. A typical crop rotation consists of alfalfa for 4-6 years followed by corn or small grains for 1-2 years. Adequate nitrogen (N) is critical for growth and is the highest input cost. Growers do not test soil for N and routinely apply 200-250 units per acre annually costing $152-190 per acre ($0.76 per unit). Study objectives included: examination of corn post-alfalfa N guidelines, evaluate potential to reduce N recommendations, and update guidelines. This extensive study was conducted from 2012-2017 with cooperators in ten counties. A complete randomized block design with four replications was used with a plot size of 10’ x 40’. Treatments were 0 lbs, 50 lbs, 100 lbs, and 200 lbs of N in the form of ammonium nitrate (NH\textsubscript{4}NO\textsubscript{3}) per acre. Soil samples were taken at 1’, 2’ and 3’ increments pre and post growing season and analyzed. Forage plots were harvested in September and samples collected and analyzed. There was no statistical difference (p=0.4375) in yield at any first year sites through 2016. USU Extension is considering updating guidelines recommending growers not apply N fertilizer to corn the first year following alfalfa. Assuming half of the corn grown in Utah follows alfalfa, growers could save approximately $6.3 million annually (42,000 acres x 200 units N/acres x $0.76 unit). Similar results were observed on second year corn though less significant (p=0.1364).

Understanding GPS Coordinate Formats and Datums

Brown, S.C., University of Alaska

Space Based Navigation Systems (SBNS) such as the Global Positioning System (GPS) primarily use four different coordinate systems to represent a location on the globe. They are Decimal Degrees (DD), Decimal Minutes (DM), Degrees, Minutes, Seconds (DMS) and the Universal Transverse Mercator (UTM). DD, DM and DMS utilize degrees of longitude and latitude to represent a position. UTM coordinates are measured in meters North and East from a point of origin. Unfortunately, many people cannot differentiate between the different coordinate formats. Entering a coordinate that is in one format into a GPS receiver that is set to another can result in huge positional errors. Datums are mathematical models that approximate the surface of the earth. Hundreds of different datums exist. Entering a coordinate into a GPS receiver that is set to the incorrect datum can also result in huge positional errors. Many people have become lost or have created flawed data when mixing incorrect coordinate systems and/or map datums. The purpose of this presentation is to teach participants how to recognize the four most used coordinate systems and to learn the importance of selecting the correct map datum.

High Tunnel Production

Jimenez, D., New Mexico State University

High Tunnels are low cost, low maintenance, unheated structures that can extend the growing season for high cash value crops. By protecting plants from many of the environmental concerns you are able to improve quality and quantity of crop production. It is a tool that can help growers improve profitability and productivity of their farms.
Establishment Trends of Brown Marmorated Stink Bugs in Hazelnut Orchards in Douglas County Oregon

Renquist, S.B., Oregon State University

During the past two years I have monitored the establishment trends of the Brown Marmorated Stink Bug (BMSB) in Douglas County, Oregon. In 2012 Douglas County experienced our first BMSB catches in non-crop residential areas. From 2012-2014 effective BMSB lures and traps were not available to accurately monitor the spread of BMSB. In 2015 and 2016 effective pheromone lures and traps were developed by universities and industry. We began testing these traps and lures in 2016-2017 on 1 sprayed and 1 unsprayed hazelnut orchard about a half mile apart. In 2016 unsprayed sites first recorded BMSB trap catches of nymphs on June 20 and adults on July 22. In 2017 first nymph catches were on June 28, and first adults on July 24. We recorded equally good catch results with the multi-season plastic trap and the clear sticky panel trap deployed at each site. At the unsprayed orchard site we recorded much higher BMSB trap catches. During 2016 we caught one BMSB per week on average June to September. During 2017 trap catches have surged to 5-10 BMSB per week during the same period. In the commercial orchard we caught only one BMSB nymph and one adult in 2016 in the clear sticky panel. In 2017 the clear sticky panel caught two nymphs and one adult, while the multi-season trap caught two nymphs during the whole season. When testing 100 randomly selected nuts for damage the untreated site in 2016 had 58 infested with filbertworm and 6 with BMSB feeding damage. In 2017 the untreated site had 55 nuts infested with filbertworm and 17 with BMSB feeding damage. The commercial orchard in 2016 had 1 nut infested with filbertworm and no BMSB damage. In 2017 the commercial orchard had 1 nut infested with filbertworm and 2 nuts with BMSB damage. This research demonstrates the risk to Hazelnut growers of not making control sprays for both BMSB and filbertworm.

Cover Crops; Impacts, Impacts, Impacts on Forage Quality, Soil Health, and High Intensity Grazing

Depain, D., Utah State University

Research and implementation of cover corps is definitely gaining popularity, however, when adopting new techniques and strategies there are always simultaneous benefits and risks. As popular as a practice cover corps has gained, the evidence and data is still limited. This three year project will give much needed and adequate insight in discovering a cover crops potential, particularly for the Millard County region. Given experiments, such as this, will provide multi-year data, providing pertinent information for researchers, and producers; including soil and soil microbial health, livestock grazing benefits, and quantitative soil analysis data, and bio-fumigant results. Multi-year testing is crucial and essential to make apparent the benefits of cover crop systems. This project will specifically target alfalfa yields after coming out of cover crop production. We will also monitor a potential decrease in alfalfa stem nematode after the use of fum radishes and mustard as part of the cover crop cocktail. The Lyman West Deseret Land and Livestock Ranch is a second generation ranch that raises over 300 Angus-Simmental calves per year, they also summer and winter range over 350 mother cows, and background nearly 80 replacement heifers per year. The ranch also produces over 200 tons of alfalfa and alfalfa mixed hay per year which provides forage for their cattle during the winter months. Chance Layman has also begun to implement cover crops into his cattle grazing rotation and has seen remarkable results with both soil and forage quality. He has made professional presentations in Richfield, UT and has also been invited to speak in North Dakota this coming fall. Chance is considered to be an early adopter of cover crop practices in this area, and many out of state ranchers have visited Chance to personally see the early improvements and impacts Chance has been able to reach. Chance believes that he can demonstrate economic ways to save money through intensive grazing, potentially spreading no fertilizer, and willing to share these practices and methods with other producers.
Oregon’s Forage and Turf Grass Seed Production

Anderson, N., Oregon State University

Oregon is the world’s major producer of cool-season forage and turf grass seed and widely recognized center of expertise in seed production. Most of the seed production acreage is located in the Willamette Valley where mild, wet winters and dry summers provide an ideal environment for high quality grass and legume seed industries to thrive. Forage and turf grass seed is grown by nearly one thousand seed producers on more than half of the arable land in the region. Over 650 million pounds of seed is produced in the region each year. There are over 300 seed conditioning plants that prepare the seed for both domestic and international markets once harvest is complete. Oregon growers produce essentially all of the U.S. production of annual ryegrass (*Lolium multiflorum* Lam.), perennial ryegrass (*L. perenne* L.), bentgrass (*Agrostis* spp.), and fine fescue (*Festuca* spp.). Smaller amounts, but significant portions of the U.S. production of Kentucky bluegrass (*Poa pratensis* L.), orchardgrass (*Dactylis glomerata* L.), and tall fescue (*Festuca arundinacea* Schreb.) are also grown in Oregon. Almost all of the U.S. grown clover (*Trifolium* spp.) and vetch (*Vicia* spp.) seed comes from Oregon. Many forage and turf grass seed consumers have little knowledge about how the seeds they purchase are produced, cleaned, and quality tested prior to bagging and shipment. Management of these grass and legume seed crops is extremely intensive, requiring strict isolation buffers, rigorous field management practices, and highly specialized harvest equipment. Oregon State University Extension personnel have played a major role in helping seed growers develop and advance management practices which have allowed the industry to remain profitable while supplying high quality seed to forage producers, turf managers, and household consumers for decades.

Learning and Growing in the Worland Community Garden

Youngquist, C., University of Wyoming

There are a thousand ways to grow food and build community in a garden. The Worland Community Garden was established in 2011 as a “pea patch” with individual plots for rent. After two seasons it fell apart and the “pea patch” became a “weed patch”. In 2015, Washakie County Extension took over management and changed the focus. With some hard work and strategic outreach, the garden has become a thriving hub, and hosts hundreds of youth and adults throughout the growing season. There are no longer individual plots, but instead the garden has room for everyone to come work, play, and learn together. Much of the success of this project is due to strategic collaborations with local community groups. In 2016, over 3000 pounds of vegetables were harvested and donated to local organizations. In 2017, an Americorps summer associate was hired to manage the garden. While there are many ways to develop a community garden program, this hands-on, one-seed-at-a-time, approach has worked well for this small Wyoming town.
Analyzing the Contribution of Agribusiness to the Magic Valley Economy

Willmore, C., Hines, S., Packham, J. and Taylor, G., University of Idaho

The objective of this research was to demonstrate the contribution of agribusiness and analyze agricultural and economic policy issues critical to the Magic Valley region of south central Idaho. Industry purchases and sale linkages were constructed using an Input/Output (I/O) model. The national IMPLAN data base was extensively modified with local data on the agribusiness sectors. The I/O model then derive multipliers and contribution for all industries in the economy. This information is vital because agribusiness plays a major role in Idaho’s economy and draws much economic activity into the region via output (sales), jobs and value added. In addition to the contribution of agribusiness the model is being used to analyze various policy impacts, such as water curtailments and the new or expanding agricultural processing companies, upon the economy of the Magic Valley. The information was presented as publications (infographic, poster, and extension bulletin) and numerous presentations targeted to commodity groups, agricultural associations, regional development groups, local and state governments (county commissioners, state legislature) and local stakeholder groups.

And The Survey Says...Methods and Outcomes for Extension Outreach Offerings

Gray, S. L., Washington State University

Surveys are invaluable when it comes to realizing what worked and what did not when presenting information to our workshop and program audiences as well as garnering valuable data for future articles, papers, and publications. The information gained through evaluations help us plan our future programs and determine what information our audiences believed was of value to them. There are several methods available to use for gathering information among those are the pre/posttest; the online multiple choice or ranking system, and then there is the rapid response method, using a system designed for one purpose and finding a creative use for it in another way. Each style of survey has good and not so good merits. This presentation will illustrate the use of each method and the response levels for each audiences who participated to help you determine the best fit for your outreach education offerings. Replication of the methods demonstrated for use by extension faculty and staff everywhere.

P.E.S.T.: How to be the First in Your County to Identify New Invasive Insects

McMoran, D., Washington State University

Invasive pests can have devastating ecological and economic impacts in areas where they become established. WSU Skagit County Extension encourages agents to use the P.E.S.T. methodology to ensure non-native insects are quickly detected once introduced into their county. It is imperative to involve the PUBLIC by establishing direct lines of communication, such as social media where county residents can submit photographs of suspicious specimens or alert agents to recent sighting locations. EDUCATION of county agents should focus on pest taxonomy, biology and behavior to ensure that they are able to identify invasive species and determine where and when a future outbreak may occur. Fact sheets or websites should be created to make this knowledge available to all interested parties. Funding is critical to SUPPORT the time extension agents must spend monitoring for invasive pests in the field and examining samples in the laboratory. Assistance may also be found through collaborations with other university or government entities which share a common goal of detecting and managing invasive insects. Most importantly, county agents should spend as much time as possible in the field TRAPPING for target pests. Detailed trap records should be maintained to accumulate a wide breadth of data that can be used to document invasive insect activity and develop more precise trapping protocols. WSU Skagit County Extension recently utilized the P.E.S.T. approach to capture the first specimens of the Brown Marmorated Stink Bug Halyomorpha halys (Stal) in Skagit County, Washington State.