III. Program Summary Narrative – January 2019 – September 2020

Introduction and Statement of Assignment

Program Area	Condition Change	% FTE
Agricultural Production Management Systems	Increased agriculture and forestry efficiency and profitability	40%
Pest Management	Increased agriculture and forestry efficiency and profitability	40%
Water Resources	Improved water-use efficiency	10%
	Improved water-supply security	10%

This program summary narrative represents the review period from January 2019 to September 2020. Based on the evidence shown in this dossier, I am seeking an advancement from Assistant Advisor II to Assistant Advisor III. During this first review period, part of my role as the Agronomy and Crops advisor in Siskiyou County was to know my clientele and focus my research and extension program on the Needs Assessment process (theme 1). As expected, the Needs Assessment process showed me that my clientele required my early research program to be focused on two main broad areas:

- Agronomic practices and crop efficiency (theme 2): My goal has been to provide information on crop varieties, weed control, and crop fertilization to contribute to a productive and sustainable agriculture. This theme complies with two UC ANR condition changes: It promotes economic prosperity in California by increasing agriculture efficiency and profitability through the projects: alfalfa variety trial, Roundup Ready alfalfa injury research, the 2020 alfalfa herbicide trial, and the Nitrogen Fertilizer Management in Small Grains study. The later also contributing to protecting California's natural resources condition changes by avoiding unnecessary use of nitrogen in small grains production, thus decreasing the potential risk of nitrogen leaching to the groundwater.

- Water management and sustainability of water resources (theme 3): My goal is to demonstrate through research how to use water wisely and mitigate the agriculture impact on the groundwater. This theme promotes economic prosperity in California by increasing agriculture efficiency and profitability. Additionally, it protects California's natural resources by increasing ecological sustainability of agriculture, improving water-use efficiency and water supply security. Lastly, this theme helps to build climate-resilient communities and ecosystems by providing information and education about drought and climate change.

I have been a reliable link between the university's research and the Siskiyou County clientele through research conducted by myself as the principal investigator as well as collaborating with UC specialists and advisors throughout the state.

Theme 1: Siskiyou County Needs Assessment

Background/rationale: A successful research program requires a Needs Assessment process as the first step in the overall planning. While it comprehends a set of ongoing activities that will likely change through time, conducting the Needs Assessment has been crucial to my program since I started my position as the Siskiyou County agronomy and crops advisor. I attended the "Conducting a Needs Assessment" workshop on September 24, 2019 and it has been helping me to determine my clientele's gaps in knowledge. The Siskiyou County Needs Assessment process has been an intentional effort to ensure all members of my clientele have equitable access to my research program and UC ANR resources, complying with the UC ANR: Developing an inclusive and equitable society condition changes.

Project 1. Meeting with Key Clientele

Problem and Methods: This was the first step taken on 1/11/2019 during my second week in the position. I organized a meeting with 12 key growers to introduce myself and hear from them what they expected from my research program. After the meeting, I had the knowledge necessary to start and conduct my early research program.

Outcome and Impacts: Topics such as irrigation efficiency, alfalfa weevil management, weed control, alfalfa varieties, and water sustainability were discussed and became the foundation of my initial efforts as CE advisor. Additionally, I built a relationship of trust with clients that have been collaborating with my program by hosting meetings, being source of regional information, and allowing field trials to be conducted in their property. I still keep in contact with most of this meeting's participants, constantly exchanging information, receiving feedback, and adapting my program to the clientele's current needs.

Project 2. Needs Assessment Survey

Problem and Methods: This was the overarching approach during this first review period. The survey contained 18 questions regarding crops, weeds, insects, crop diseases, pesticides use, irrigation, and concerns about the future of agriculture in Siskiyou County. I mailed the Siskiyou County Needs Assessment Survey on 6/28/2019 to over 300 clients and almost 10% responded.

Outcome and Impacts: I have identified my clientele as alfalfa and grass hay growers, small grains producers, pest control advisors, and rural house holders. Among those who responded the survey, over 60% had concerns with water (e.g. water use efficiency, sustainability of water resources, and water regulations). The majority of my clientele are located in Scott Valley (48%), Shasta Valley (43%), and Butte Valley (9%). Regarding the most problematic insects, 51% of the respondents reported problems with alfalfa weevil, 44% with grasshoppers, 33% with armyworms, and 17% with aphids. Through the Needs Assessment Survey, I could also identify the most problematic weeds. Over 40% of the respondents have had problems with both, foxtail and yellow starthistle. Hoary cress, fiddleneck, puncturevine, Canada thistle, and dyer's woad were also reported as being problematic for more than 20% of the respondents. Lastly, the main irrigation methods used in Siskiyou County were identified as being wheel-line sprinklers, flood, and center pivot.

Project 3. Individual Visits

Problem and Methods: Regular communication with clientele is extremely important to build relationships, fine tune my needs assessment, and learn of new problems and opportunities. Throughout the first review period, I interviewed several producers to better understand the Siskiyou County agriculture scenario and the clients concerns. I could learn about issues not captured by the Needs Assessment Survey or the initial key growers meeting.

Outcome and Impacts: Some of the concerns mentioned in these individual visits were no till agriculture, dryland pastures establishment and management, and the use of soil moisture sensors devices. Based on these interview topics, I have been updating my research and extension program.

Theme 2: Agronomic Practices and Crop Efficiency

Background/rationale: Agronomic practices that lead to high crop efficiency are key to economic prosperity, responsible use of farm inputs, and sustainability. My program helps Siskiyou County growers implement a sustainable, productive farming practices by providing science-based information tackling issues such as pests (e.g. weeds, insects, and diseases), fertilization, irrigation and crop varieties.

Project 1. Alfalfa Variety Trial

Problem and Methods: Alfalfa is one the main crops grown in Siskiyou County with roughly 34,600 acres harvested in 2019 (32,700 acres conventionally grown for hay and 1,900 acres organic hay). In 2021, there are about 180 alfalfa varieties available in California ranked according to their winter survival, fall dormancy, and pest resistance ratings. While this plethora of options is important, choosing one of them might be a daunting task for growers. The goal of this 3-year Alfalfa Variety Trial planted in the fall of 2019 in a collaborator's field is to evaluate the performance of 24 alfalfa varieties and identify the most suitable varieties for the particular Scott Valley environment and weather conditions. As the principal investigator, I have been conducting the trial and sharing the summary data in a yearly basis (2020, 2021 and 2022) through extensions outlets such as newsletters (mailed to over 300 clients and emailed to an additional 97 on 9/29/2020) and social media (Facebook, Instagram and Twitter - @uccesiskiyou). This trial counts with a $6,000 financial contribution from the seed companies. I shared the first year data with my clientele in September 2020.

Outcome and Impacts: During the course of this trial, the Siskiyou County growers are expected to be planting the best performance alfalfa varieties identified in this 3-year project. Growers are aware of the most recent variety options and the ones planning to plant new alfalfa fields will use this trial as guide when deciding what alfalfa variety to choose. As alfalfa is perennial crop, choosing a higher yielding variety can have a significant economic impact over the stand life, which will benefit the producers.

Project 2. Roundup Ready Alfalfa Injury

Problem and Methods: In 2014 Steve Orloff and Rob Wilson observed crop injury in many Roundup Ready alfalfa fields treated with Glyphosate in Scott Valley. Fields not treated with the herbicide in the same area had little or no injury. To investigate the issue, field trials were conducted in Scott Valley, Honey Lake Valley, Tulelake, and Utah. In each location, two experiments were implemented in 2019 and two in 2020. The first experiment assessed glyphosate rate (low vs high) applied to alfalfa at six growth stages. The second experiment focused on bactericide applications to suppress *Pseudomonas syringae* populations on the crop's leaf surface to investigate the role of the bacteria in the alfalfa injury. As co-investigator, I conducted the field experiments in Scott Valley in 2019 and 2020 in a collaborator's field that have had Roundup Ready alfalfa injury problems. The outcome of this study was shared in a county, state, and national levels through different extension methods. I wrote a post on the issue for the UC ANR Alfalfa & Forage News Blog on February 22, 2019. Additionally, I presented the data in the 2019 Siskiyou County Pest Management Seminar for an audience of 110 people (growers, researchers and pest control advisors). The "Roundup Ready Alfalfa Injury" study was also presented by Tom Getts at the 2019 Western Alfalfa & Forage Symposium in Reno, NV, in which I'm the co-author of the proceeding paper. This research also produced 2 peer-review journal articles yet to be published.

Outcome and Impacts: Our study found that applying glyphosate when the crop is no taller than 2 inches and avoiding glyphosate applications before frost events resulted in no crop injury. Based on the feedback from Siskiyou growers, at least 75% of the growers adopted these management suggestions and were able to mitigate crop injury in Roundup Ready alfalfa fields. A graduate student was supported by this project and the research team will keep investigating the alfalfa injury and its causes during the following seasons.

Project 3. 2020 Nitrogen Fertilizer Management in Small Grains

Problem and Methods: The diverse set of agroecosystems where small grains are grown in California pose challenges to an efficient management of nitrogen fertilizers. Besides the economic and agronomic benefits, the development of a well-managed nitrogen fertilizer program positively affects the environment by reducing nitrate leaching potential into groundwater. The objective of this project is to demonstrate and enable best nitrogen fertilizer practices by establishing 5 demonstration sites per season

from 2020 to 2022. Nitrogen rich reference zones in combination with measurements of the soil, plant, and canopy are used at each site to calculate real-time nitrogen fertilizer recommendations. In 2020, I conducted the Tulelake demonstration site for this study. While we could not demonstrate the nitrogen rich strip in-person during our yearly field day as planned (Covid-19 restrictions), the data and information generated by the study at the Tulelake site were shared locally and statewide. I'm co-author in four blog posts that were published on the UC Small Grains Blog. Additionally, I'm the author of the "N-Rich Reference Zone Case Study: Siskiyou County 2020" that was also posted on the UC Small Grains Blog.

Outcome and Impacts: According to the web analytics for the website and blog posts created as part of the whole project and all locations, in aggregate since May 2020 until December 2020, the content has been viewed over 1,400 times for an average of three minutes and twenty-six seconds per view resulting in over seventy-seven hours of content engagement. The potential impacts of this project are promising. Small grains growers will be managing nitrogen fertilizer more efficiently, reducing the potential nitrate leaching to groundwater and saving money by only applying nitrogen fertilizer according to the crop needs.

Project 4. 2020 Alfalfa Herbicide Trial

Problem and Methods: After receiving many requests regarding some difficult-to-control annual winter weeds in alfalfa fields, my colleague Tom Getts and I decided to implement herbicides trials in Scott Valley and Honey Lake Valley to investigate the best chemical control for each location's problematic weeds. The Scott Valley trial had the objective to assess the efficacy of herbicides (e.g. Pursuit, Raptor, Select, and Prowl), with and without ammonium sulfate (AMS) as an adjuvant, on shepherd's purse, Persian speedwell, and tansy mustard. In addition to the herbicides efficacy on each weed per se, crop injury due the herbicides, or their combination with AMS, was also assessed. I conducted the Scott Valley field trial in the 2020 growing season. There has been an invitation to share the data later in the fall at the 2020 Alfalfa and Forage Virtual Field Day.

Outcome and Impacts: The impact of this research will be evaluated in the coming seasons. However, it is expected growers will utilize the data generated from these trials to select herbicides with higher efficacy and proper rate to manage hard-to-control winter weeds. Producing weed free hay is essential to meet the quality demands of the California Dairy market, which pays a premium to alfalfa producers.

Project 5. Canada Thistle Biological Control

Problem and Methods: In the Siskiyou County Needs Assessment Survey done in 2019, at least 20% of our clientele reported problems with Canada thistle infestation in Siskiyou County. To address this issue applying IPM concepts, I'm trying to inoculate Canada thistle plants with *Puccinia punctiformis*, which is a host-specific rust fungus with the ability to infect healthy weeds and spread to the root system. In September 2020, I inoculated the fungus spores in two clients' fields infested with Canada thistle and will be looking for rust establishment in the Spring 2021 as soon as the weeds' shoots start to emerge.

Outcome and Impacts: Confirming the rust establishment in the spring of 2021, the clients that reported problems with Canada thistle will likely adopt biological control as the main tool for controlling this noxious weed, especially the organic hay growers. Additionally, biological weed control will provide a long-term solution for Canada thistle infestations with less environmental impact caused by herbicide use.

Theme 3: Water Management and Sustainability of water resources

Background/rationale: The semi-arid, Mediterranean-like, climate in California makes the state dependent on irrigation water to support its productive agriculture. In an average year, about 9.6 million acres are irrigated with roughly 34 million acres-feet of water in the state. While this water is generally used efficiently, any improvements in agricultural water use efficiency can be significant.

To provide science-based information on irrigation efficiency, irrigation systems, and sustainability of water resources to the Siskiyou County clientele, my research program has been collaborating with UC professors and specialists. Current and future research projects will address the main water issues in Siskiyou County and disseminate the information through newsletters, workshops, field days, and individual visits.

Project 1. Influence of Irrigation Cut-off Dates on Forage Production in Shasta Valley Pastures

Problem and Methods: This research started in 2013-14 with Steve Orloff and Nicole Stevens and managed by Carissa Koopman Rivers and Nicole Stevens in 2017-19. Seven pastures were evaluated in 2013-14, six pastures in 2017-18, and 8 pastures in 2018-19. The goal of the study was to determine the effects of different irrigation cutoff dates on soil moisture, pasture production, forage quality, grass survival, and forage specie composition. I was responsible for compiling and analyzing the data, contributing with writing the final report, and organizing a workshop. The study report was shared with the funding agency (The Nature Conservancy) and 17 people from our clientele and the study collaborators that attended our workshop conducted on 3/11/2020.

Outcome and Impacts: There was no statistical difference in forage quality and spring forage yield between cutoff treatments, although the first cutoff (August) yielded less than the second (September) and full irrigation (October) treatments. On the other hand, the influence of the irrigation cutoff had a significant effect on pasture soil moisture level and fall forage yield. Based on this information, Shasta Valley producers adopted recommendations and improved their irrigation practices. The long-term impact of this project will be assessed in the following seasons.

Project 2. Scott Valley Groundwater Level Measurements

Problem and Methods: Groundwater pumping for agriculture in the valleys of Siskiyou County may be leading to historically low levels of Scott River in the fall when salmonids species need fresh water for spawning, reproduction, and early development. Besides the impact on the Coho and Chinook salmon species diversity, there is a substantial economic loss to coastal and river communities that depend on commercial fishing business. I have been collaborating with Thomas Harter (professor and specialist in cooperative extension) and Laura Foglia (assistant adjunct professor) and participating in Groundwater Advisory Committee meeting for each of the valleys in Siskiyou County (Butte, Scott, and Shasta valleys). In October, 2019, I started to collect monthly groundwater level data in Scott Valley to monitor its variation through the year. The data generated has been used to calibrate an integrated hydrologic model and it is supporting the continued development and implementation of the mandatory Siskiyou County Groundwater Sustainability Plan (GSP).

Outcome and Impacts: Preliminary results and observations show that the groundwater levels decrease significantly during the growing season. However, the growing season coincide with the dry and hot summer, which naturally cause the groundwater levels to drop. The integrated hydrologic model, created based on the data collected, is creating different scenarios to increase the Siskiyou County community preparedness and resilience to extreme weather, drought, and climate change.

Professional Competence and Activity

I am member of three professional societies: American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. I attended the California Plant and Soil Conference in 2020 and multiple UC field days in Davis (alfalfa and small grains) and in Tulelake (IREC field day). I organized the 2019 Siskiyou County Pest Management seminar and attended UC trainings such as administrative orientation for new employees, CropManage Webinar, and conducting needs assessment training. I am part of the Small Grains and alfalfa workgroups. After being hired, but before officially starting my position as agronomy and crops advisor, I attended the 2018 California Alfalfa and Forage Symposium. I demonstrated

how to sample alfalfa hay bales properly during the “hands-on” section of the meeting as well as taking the microphone to attendants during the Q & A section.

I presented in multiple meetings such as the 2019 Siskiyou County Pest Management Seminar in Yreka-CA, the Irrigated Forage Crop Workshop in Susanville-CA, and the Modoc AG Expo in Cedarville-CA. I collaborated on writing the 2020 Sample Cost to Establish and Produce Alfalfa in the Intermountain Region (published) and have been collaborating with other UC advisors on the update of the Intermountain Irrigated Pasture Manual. Lastly, I possess a valid Qualified Applicator Certificate that allows me to work with most pesticides.

University and Public Service

I was a member in the Siskiyou County Livestock and Natural Resources Advisor Search Committee from March 2, 2020 to May 21, 2020. Still in 2020, I served on the Intermountain Research and Extension Center Research Advisory Committee. Additionally, I have been participating in the Agronomic Crops Program team meetings and I am member of the UC Pest Management Program Team. I am also collaborator and one of the primary contacts of the UC Small Grains Agronomy Research and Information Center.

Public service is part of my program as I have been participating in multiple local meetings and events since I was hired. These ongoing meetings include the Siskiyou County Farm Bureau Board of Directors where ranchers, producers, the agricultural commissioner, and I discuss current topic relevant to Siskiyou County as well as research opportunities. The Siskiyou Groundwater Advisory Committees meet multiple times per year in each of the Siskiyou County main agricultural locations (Scott Valley, Shasta Valley, and Butte Valley). The goal is to collect information and discuss the steps the growers need to take to be compliant with the Sustainable Groundwater Management Act (SGMA). Among the participants are ranchers, water users, conservation agencies, and members of rural households. My main role in this meeting, besides acquiring knowledge about the groundwater situation in Siskiyou County, is to provide agronomic feedback and answer questions regarding crops and irrigation.

Affirmative Action Activities Contributing to Diversity, Equity and Inclusion

I strive to contact and deliver information to under-represented groups such as Hispanic, Latinos, Native Americans, young ranchers, female ranchers, and clients from rural households. My research outcome is shared through mass media (Facebook, Instagram, Twitter, blogs, etc.) and mailing lists (newsletters and articles) with over 300 people from different background, race, gender, ethnicity, and interests. I have helped several clients from rural communities with gardening, lawn care, and ornamental trees issues. My extensions activities and meetings, in compliance by all reasonable efforts, have been held in neutral, public places to encourage the participation of my clients. My program was in parity and the social media have been a great communication tool to reach my diverse clientele.

Closing Summary

This narrative summarizes the first 21 months of my career as an agronomy CE advisor. During this period, I assessed the needs of my clientele and focused my research program on the critical issues impacting negatively the Siskiyou County agriculture. My extension materials were developed and shared with my clientele through inclusive communication means. I have built relationships with the local community as well as with UC advisor and specialists, engaged with my clientele, and demonstrated research and agriculture knowledge. I strive to promote a sustainable and efficient agriculture.

IV. Supporting Documentation

A. Project Summary

Project Title	Role	Collaborators	Support amount/ donations	Support Source
Theme 1: Siskiyou County Needs Assessment (3)				
Meeting with Key Clientele	Principal investigator: meeting organizer	Dan Putnam UCANR Rob Wilson UCANR	NA	NA
Needs Assessment Survey	Principal investigator: data collection, summarizing results, extending information	NA	NA	NA
Individual Visits	Principal investigator	NA	NA	NA
Theme 2: Agronomic Practices and Crop Efficiency (5)				
Alfalfa Variety Trial	Principal Investigator	Dan Putnam UCANR	$6,000	Seed Companies
Roundup Ready Alfalfa Injury	Co-PI: Study design, trial implementation, data collection, summarizing results, extending information	Rob Wilson UC ANR, Brad Hanson UC ANR, Tom Getts UC ANR, Earl Creech Utah State University, Deborah Samac USDA ARS	$5,000	Industry Support
2020 Nitrogen Fertilizer Management in Small Grains	Collaborator: Case study implementation, data collection, summarizing results, contributing to publications.	Michelle Leinfelder-Miles UC ANR Mark Lundy UC ANR, Nicholas Clark UC ANR, Konrad Mathesius UC ANR, Sarah Light UC ANR, Tom Getts UC ANR, Taylor Nelson UC Davis	$225,000 over three years ($7500 for my supplies)	California Department of Agriculture Fertilizer Research and Education Program
2020 Alfalfa Herbicide Trial	Principal Investigator: Study design, trial implementation, data collection, summarizing results, extending information	Tom Getts UCANR	$5,000	California Alfalfa and Forage Association

Project Title	Role	Collaborators	Support amount/ donations	Support Source
Canada Thistle Biological Control	Principal Investigator: Study design, trial implementation, coordinating collaborators, data collection, summarizing results, extending information	Rob Wilson UC ANR, Jeffery Stackhouse UC ANR**,** Tom Getts UC ANR, Viola Popescu CDFA, Mike Pitcairn CDFA, Karen Rosen Colorado Department of Agriculture	NA	NA
Theme 3: Water Management and Sustainability of water resources (2)				
Influence of Irrigation Cut-off Dates on Forage Production in Shasta Valley Pastures	Collaborator: data compilation and analysis, final report contributor, workshop organizer	Rob Wilson UC ANR Nicole Stevens UC ANR	$5,000	The Nature Conservancy
Scott Valley Groundwater Level Measurements	Collaborator: data collection and analysis	Thomas Harter UC Davis, Laura Foglia UC Davis, Claire Kouba UC Davis	NA	NA

B. Professional Competence and Professional Activity

Professional Development and Training

Begin Date - End Date	Location	Name, Description and Occurrence of Activity
May 15, 2019	Davis, CA	UC Alfalfa Field Day
May 15, 2019	Davis, CA	Small Grains Field Day
August 8, 2019	Tulelake, CA	IREC Field Day
Aug 15, 2019	Davis, CA	Small Grains Workgroup Meeting
September 24, 2019	Davis, CA	Conducting Needs Assessment Training
Dec 12, 2019	Yreka, CA	Siskiyou County Pest Management Seminar
Feb 4-5, 2020	Fresno, CA	2020 California Plant and Soil Conference
July 15, 2020	Zoom	CropManage Webinar
August 12, 2020	Zoom	Administrative Orientation for New employees
September 23, 2020	Zoom	UC Alfalfa Field Day

Disciplinary Society or Professional Association

Disciplinary Society/Prof. Assoc Name	Membership/Meetings Attended/Activities
American Society of Agronomy	Member
Crop Science Society of America	Member
Soil Science Society of America	Member

Evidence of Professional Competency

Begin Date - End Date	Location	Name, Description and Occurrence of Award, Recognition, Professional Presentation, Office or Activity
November 27-29, 2018	Reno, NV	Alfalfa Symposium, hay bale sampling demonstration, and support to Q & A section
April 15, 2019	Modesto, CA	Qualified Applicator Certificate Acquired
December 12, 2019	Yreka, CA	2019 Siskiyou County Pest Management Seminar – Organizer and Speaker
March 11, 2020	Yreka, CA	The influence of Irrigation Cutoff on Forage Production in Shasta Valley – Workshop organizer

C. University Service

Begin Date - End Date	Name, Description, and Occurrence of Activity	Org Level	Contribution and Leadership Role
February 22, 2019 (ongoing)	UC Alfalfa Workgroup	State	Member
March 19, 2019 (ongoing)	UC Pest Management Program Team	State	Member
August 13, 2019 (ongoing)	Agronomic Crops Program Team Meeting	State	Member
January13, 2020 (ongoing)	Intermountain Workgroup Meeting	Region	Member
February 14, 2020 – May 21, 2020	Siskiyou County Livestock Adviser Search Committee	State	Committee Member
May 18, 2020	Intermountain Research and Extension Center Research Advisory Committee	Region	Committee Member

D. Public Service

Begin Date - End Date	Name, Description, and Occurrence of Activity	Org Level	Your Contribution and Leadership Role
May 28, 2019 (ongoing)	Groundwater Advisory Committee Scott Valley	Region	Participant
May 29, 2019 (Ongoing)	Groundwater Advisory Committee Shasta Valley	Region	Participant
May 30, 2019 (Ongoing)	Groundwater Advisory Committee Butte Valley	Region	Participant
2/13/2019 (Ongoing)	Siskiyou County Farm Bureau Board of Directors Meeting	Region	Participant

E. Extension Activities

Meeting Organized

Begin Date - End Date	Meeting Name and Type	Topic/ no. repetitions	Role	Location (s)	Total No. of Attendees
Theme 1: Siskiyou County Needs Assessment (1)					
11-Jan-19	Key Clientele Meeting	Needs Assessment/1	Organizer	Yreka, CA	12
Theme 2: Agronomic Practices and Crop Efficiency (1)					
12-Dec-19	2019 Siskiyou Pest Management Seminar	Pest Management/1	Organizer	Yreka, CA	110
Theme 3: Water Management and Sustainability of water resources (2)					
3-Mar-20	Influence of Irrigation Cutoff Dates on Forage Production in Shasta Valley Pasture meeting	Water use efficiency/1	Organizer	Yreka, CA	15

Educational Presentations

Begin Date - End Date	Meeting Name/ Event	Presentation Topic/ no. of repetitions	Location (s)	No. of attendees
Theme 2: Agronomic Practices and Crop Efficiency (1)				
January 11, 2019	Siskiyou County Pest Management Seminar	Avoiding Roundup Ready Alfalfa Injury/ 1	Yreka, CA	110
Theme 3: Water Management and Sustainability of water resources (2)				
February 27, 2020	Irrigated Pasture and Grass Hay Workshop	Soil Salinity and Alfalfa Salt Tolerance/ 1	Susanville, CA	35
March 13, 2020	Modoc AG Expo	Soil Salinity and Alfalfa Salt Tolerance/ 1	Cedarville, CA	23

Other (including websites, social media, blogs, collaborations with other agencies, organizations, policy engagement

Begin Date - End Date	Description	No. of Instances
February 22, 2019	Post on the Alfalfa & Forage News blog -	1
May 13, 2020 - ongoing	Posts on UC Small Grains Blog	4
January 16, 2019 - ongoing	Posts on Instagram (UCCE Siskiyou)	24
January 16, 2019 - ongoing	Posts on Facebook (UCCE Siskiyou)	20
January 16, 2019 - ongoing	Posts on Twitter (UCCE Siskiyou)	20
September 9, 2020 - ongoing	Video upload on the UCCE Siskiyou Youtube channel	1

BIBLIOGRAPHY

Peer Reviewed	
B - Peer-reviewed scholarly journal publications	0

Non-Peer Reviewed	
A - Popular press articles	9
D - Technical reports and other non-reviewed articles	6
E - Published abstracts	2

TOTAL	17

A - Popular press articles

- **Galdi, G. C.**, Wilson, R., Putnam, D. (2019). Have you seen this Injury Symptom in alfalfa? We need your help in understanding this crop injury. Alfalfa and Forage News Blog.
- **Galdi, G. C. (2020).** 2019 Roundup Ready Alfalfa Injury trial. UCCE Siskiyou Winter Newsletter.
- **Galdi, G.** C. (2020). Aphids and Marlahan Mustard Control. UCCE Spring Newsletter.
- **Galdi, G.** C. (2020). Scott Valley Variety Trial, Soil Moisture Sensors, and Canada Thistle Biological Control. UCCE Siskiyou Summer Newsletter.
- **Galdi, G.** C. (2020). Blue Alfalfa Aphid Management. 2020 Intermountain UCCE Research Updates Newsletter.
- Leinfelder-Miles, M., Clark, N., Light, S., Mathesius, K., Getts, T., **Galdi, G. C**., Nelsen, T., Lundy, M. (2020). Implementing N-Rich Reference Zones to Inform In-Season N Fertilization Practices. UC Small Grains Blog.
- Lundy, M., Nelsen, T., Mathesius, K., Leinfelder-Miles, M., Clark, N., Light, S., **Galdi, G. C**., Getts, T. (2020). N management case studies: Utilizing N-rich reference zones in California small grain crops. UC Small Grains Blog.
- Getts, T**.**; Wilson, R., **Galdi, G. C**., Loveland, C., Samac, D., and Creech, E. (2020). Roundup Ready Alfalfa Injury. 2020 Spring Research Update - Intermountain Research and Extension Center.
- **Galdi, G.** C., Wilson, R., Getts, T. (2020). Blue Alfalfa Aphid Management. Siskiyou County Farm Bureau Newsletter.

D - Technical reports and other non-reviewed articles

- Getts, T., Wilson, R., and **Galdi, G. C.** (2019). Frost Injury on Roundup Ready Alfalfa - 2019 NE CA research. Intermountain Research and Extension Center Field Day.
- Wilson, R., **Galdi, G. C**., Stewart, D. (2020). 2020 Sample Costs to Establish and Produce Alfalfa Hay.
- Lundy, M., Nelsen, T., Mathesius, K., Clark, N., Light, S., Leinfelder-Miles, M., Getts, T., **Galdi, G. C**. (2020). New resources available for conducting and interpreting soil nitrate quick tests. UC Small Grains Blog.
- Clark, N., Getts, T., **Galdi, G. C**., Nelsen, T., Leinfelder-Miles, M., Light, S., Mathesius, K., Lundy, M. (2020). Hand-held electronic devices help you make better nitrogen fertilizer decisions. UC Small Grains Blog.
- **Galdi, G. C**., Nelsen, T., Lundy, M. (2020). N-Rich Reference Zone Case Study: Siskiyou County. Agronomy Research and Information center: Small Grains.
- **Wilson, R.**, Galdi, G. C., Stevens, N. (2020). Influence of Irrigation Cut-off Dates on Forage Production in Shasta Valley Pastures.

E - Published abstracts

- Getts, T**.**, Wilson, R., **Galdi, G. C**., Loveland, C., Samac, D., and Creech, E. (2019). Roundup Ready Alfalfa Injury. Proceedings of the California Alfalfa Symposium.
- Getts, T**.**, Wilson, R., **Galdi, G. C**., Loveland, C., Samac, D., and Creech, E. (2020). Roundup Ready Alfalfa Injury. Proceedings of the California Weed Science Society.