Irrigation Technology Education: Recognizing and Adapting to Logistical Challenges at the Farm Field level

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I would also like to thank the Modesto Natural Resources Conservation District for hosting me during my internship. Everyone in the office was professional, kind, and willing to answer all the questions I had.
Executive Summary

Irrigation Technology Education: Recognizing and Adapting to Logistical Challenges at the Farm Field Level was a project about being able to bring the farming community together through the practice of proper water use. Working with The Modesto Natural Resource Conservation Services, East Stanislaus Resource Conservation District, and Modesto Junior College Irrigation Department my goal was to help Central Valley farmers through training, evaluations, certification, and outreach.

Project Objective

Trainings will include Soil Health, Nutrient Management, Irrigation Water Management and Irrigation Evaluation Methods. This will be achieved by using, and teaching farmers how to use climate based data, soil based data and irrigation system data to minimize nutrient loss and maintain optimum irrigation efficiency, all free of charge to the participant. Our community has seen severe drought in the last several years, and there is a serious need to educate agriculture stakeholders on how to make the most of the available water

Project Approach

The project was approached through five major tasks. The project started with by helping all three organizations run workshops, help run an open house for Modesto Junior College Irrigation program, and right reports tactics on water conservation before irrigation season started, and help perform irrigation distribution uniformity testing during irrigation season.

The Natural Resources Conservation District worked hand in hand with the East Stanislaus Resource Conservation District to put on Irrigation water management workshops where speakers taught farmers teaching farmers how to properly track their water use. Speakers also talked about the importance of soil water holding capacity. Soil water holding capacity was used to help manage scheduling how long water needs to be ran before the water in the soil is pushed past the root zone. With the first workshop, I was able to speak about the irrigation distribution uniformity testing and how the free test could help improve the quality of plant life, as well as could potentially save the farmer money in the long run. At the workshops, sign up sheets were set out for farmers to sign up for Irrigation distribution uniformity testing.

Modesto Junior College Irrigation program ran an open house on May 17th, 2019 inviting the public and farmers to irrigation department where local irrigation districts, irrigation contractors, and irrigation distribution companies. Leading up to the event, I was tasked with creating posters for the event, handing out invitations, and brainstorming on what would be needed for the event. On the day of the Open house, the irrigation team, along with myself, set up tables and chairs for the vendors, set up coffee, and helped prepare lunch. Once vendors
were set up, they were available to the public to come ask questions about what they do, how to improve systems, and provided away for farmers to get to know their local vendor representatives.

Once Irrigation season started, I helped perform irrigation distribution uniformity evaluations, created a report off of gathered information in the irrigation and basic soil evaluation. Irrigation distribution uniformity testing consisted of calling and setting a date to perform an irrigation evaluation. During the initial phone call, questions about the system were asked and information was recorded prior to going to the orchard. I helped organize teams of two to go out and perform the tests. Beating the heat, evaluations were scheduled to start as early as 6:30 am. 60 pressures were taken strategically throughout the orchard. Once pressure readings were completed and logged, three areas in the orchard were chosen: the cleanest, dirtiest, and an average, where 16 to 28 emitters or sprinkler flow measurements were taken. Once the evaluation was completed in the orchard, a 50 page report was then constructed in the office. With the report being completed, the farmer was contacted and a meeting was set up to give the report and feedback to farmers.

Project Outcome and Conclusion

The results of this project came out positive. The outreach of this project helped me on a personal level, as well as help the local agriculture community. During the course of the project, there were times that did not run as smoothly as I would have liked. For example, we estimated that more people would show up to the Modesto Junior College Irrigation Program open house, but the people who did show up were able to have one on one conversations to better understand how important proper use of water is. For the open house section of this project, I recommend that more time is spent working with the local farmers and figuring out better channels of getting the word out for the event. Over all, the event was well set up and put together, but the outreach to the community was seen to be a challenge.

I was happy with how the irrigation water management workshops were presented, as well as how the farmers were surprised at how the information they were learning was useful and could be easily put into practice. All three irrigation water management workshops ran smoothly, and provided good information that was easy to understand.

I was only able to perform a handful of irrigation distribution uniformity tests for farmers before I took a job with the Butte County Resource Conservation District, but during the time that I was able to work on that aspect of the project, I felt that the results that were given back to the farmers could help them better maintain their irrigation systems, as well as save water.

Over all, I am extremely thankful for the opportunity to be apart of this project and learn along the way.
Appendices

An invention flyer for the Modesto Junior College Irrigation Open House

While performing an irrigation distribution uniformity test, Amanda Chaney is using catch cans to collect the flow of emitters in a young almond orchard.

While performing an irrigation evaluation, Jessica is recording the pressure reading that Riley took.

At an outreach event, Diana Waller and Amanda Chaney are showing how to make a soil ball for soil moisture by feel.