

Making a Difference

2013 Irrigation Management Outcome for Gray County Brandon McGinty, CEA-AG/NR Gray County

Relevance:

Due to decreased amounts of rainfall averages in the Texas Panhandle, irrigation continues to be a necessary practice for producers in Gray County to reach acceptable yields that can boost net profits. Currently there are 25,000 acres of cropland that utilize center pivot irrigation systems with 80 acres of drip irrigation for crop production. With reduced fuel prices producers are able to increase irrigation amounts, but producers still need to utilize more fuel efficient systems that are economically efficient in providing required amounts of crop water to reach acceptable crop yields that generate a profit for producers. Ag committee assisted with identifying issues, and programs implementation during the year.

Response:

In March 2004, the Texas Community Futures Forum was conducted where water was one of the issues found to be of importance. In October of 2008, the Gray County Agriculture Program Area committee identified irrigation or to be more specific irrigation efficiencies and management on how producers could reduce the cost of irrigation for crops. With changes in management strategies as well as technology, in 2011 and in 2012, the Gray County Agriculture Program Area committee, started looking at utilizing this new technology with soil moisture probes to monitor soil moisture and irrigation needs along with timing.

Target Audience:

The target audience was area producers with irrigated corn, cotton, sorghum, wheat, and hay crops. The total potential audience is approximately 136 producers.

Pre-Program Needs Assessment:

Targeted producers were contacted before the program to identify participants to utilize the soil moisture probes to assist with management decisions on irrigation. Financial resources for educational programs in the amount of \$2300.00 were secured from sponsors for meals, materials, and Partial Cost Recovery. Additional sponsors assisted with the cost of the soil moisture probes with one probe costing \$2,200, 3 producers utilizing a total of (5) probes, with a total sponsorship of half (1/2) of the total cost of the probes or \$5,500 to offset costs to producers.

Media Efforts:

Quarterly newsletter was published to educate producers on efficient practices of irrigation, utilization of new technologies, irrigation needs for potential yields, checking irrigation systems for efficiencies, timing of irrigation, how to apply the new technology and understand the application, and other information as needed during the growing season. Newspaper articles were also published to notify producers of educational meetings, along with daily radio programs to educate producers on irrigation technologies and efficiencies. Updates through radio programs with crop water use and irrigation needs for each crop were submitted during the growing season.

Result Demonstration:

Result Demonstrations and applied research studies were conducted to provide producers with tools and understanding of how to use these tools to determine crop water needs, soil moisture levels, and how to determine best irrigation management practices. Demonstrations included a replicated irrigated cotton variety trial with 12 different varieties to evaluate differences in maturity, yields, and total profit of production. Working with Aqua Spy, producers used the soil moisture monitoring probes to assist with understanding irrigation management decisions. Probes were placed in corn, cotton, and hay crops. Results of the demonstrations compared to the conventional management program did not vary due to dry conditions, but overall yields were up.

Educational Events:

High Plains Irrigation Conference – This program was held in Amarillo, in January 2013. This educational program looked at Low Input Crop production strategies, efficiencies of irrigation, new technologies and how apply the technology, and irrigation strategies for producers. Agent utilized newspaper and radio outlets to advertise and market the program to producers.

Cotton Planning Conference – This event was held in Groom in January 2013, with 6 Gray county producers and a total of 28 producers in attendance, to learn about cotton markets and outlook, variety information and results of demonstrations from 2012 both irrigated and dryland, insect issues and early season controls of insects, and irrigation management information by understanding how to read and apply information from soil moisture probes, with 3 CEU's being offered for the program.

Ag Conference – The Gray County Ag Conference was held in Pampa in February 2013, with 36 participants learning about Efficient Irrigation Systems and ways they can make their systems more efficient, Utilizing soil moisture probes to monitor moisture levels and to help producers properly irrigate crops, sorghum production with limited irrigation and how it compares to cotton or corn, Farm Truck Compliance with Texas DPS troopers for farmers to update on equipment and vehicles, Commodity market updates and Outlooks, and TDA presenting information on Laws and Regs. 3 CEU's were offered for Private Applicators.

Wheat Production Clinic – A Wheat Clinic was held in Pampa in April 2013, with 12 producers to evaluate wheat crop conditions following 2 freezes, with Calvin Trostle, to evaluate the effects of freeze on the wheat. Recommendations to producers for irrigation on wheat, barley, and triticale, for production purposes. Triticale was being grown for silage, and was being harvested starting on the 18th with others getting started that week and the following week to salvage the crop, therefore irrigation was terminated. Evaluations varied due to crop situation to continue with irrigation on wheat, but barley irrigation recommendations were to continue with crop. Evaluations continued during the month on a field by field basis to assist producers with risk management and overall wheat crop situation.

Wheat Field Day - Wheat Field Day was to be held in Groom in May, but the field day was cancelled due to late freeze injury and drought conditions and was marketed through Ag Newsletter to inform producers that the field day was not going to take place, but included was a map of the location so producers could evaluate the different varieties and a plot map was available at the Extension office.. Some producers did pick up a plot map to evaluate the varieties.

Wheat Planning Conference – This program was conducted in Pampa in August 2013, with 15 participants to learn about wheat production practices on Efficient Irrigated Wheat production practices for the High Plains, Wheat seed treatments and insect updates, Irrigated and Dryland Wheat Variety Updates from 2012 due to freeze issues on variety trials for 2013, Insurance Updates and Market Outlook, and current Wheat Disease and research for wheat production. Wheat Producers also discussed Farm Bill and current issues with wheat production. 3 CEU's were offered.

Crops Tour – Producers participated in the Gray/Carson Crops Tour in September 2013, with 30 producers, to evaluate 8 dryland cotton variety trials and 12 irrigated cotton variety trials, discuss new technologies and how to utilize the technology for irrigation management, discuss cotton maturity, termination of irrigation, address weed control issues and the potential of weed resistance issues, discuss varieties and differences, cotton management, harvest aids, and growth stages of varieties. An in-depth irrigation meeting took place following the Crops Tour in White Deer, to inform producers how to utilize the Aqua Spy software and to read the soil moisture probes to determine when to terminate irrigation on corn, sorghum, and cotton crops. 3 CEU's were offered.

Individual Farm Visits – Individual Farm Visits with producers were made in May, June, July, August, and September, to assist producers in making irrigation management decisions on corn, cotton, and sorghum production. Assist producers with understanding how to read and utilize new technology with soil moisture probes and software to make irrigation management decisions and crop evaluations.

Radio Programs - Approximately 85 Ag Radio programs for Agriculture producers were conducted on drought situation, recommendations on irrigation needs, crop progress and situation, utilize soil moisture probes to assist producers with irrigation management decisions, weed control issues, insect issues and controls, and other production needs.

Results:

With continued advances in new technology, producers are constantly looking at new ways to improve crop production practices, increase potential profits, reduce water demand for crops, and understand how to utilize new technologies to understand irrigation needs and management. 100% of the producers that participated in the program gained knowledge in their irrigation management system and how to make improvements to increase efficiency of their system. Understanding and utilizing the new technology to make irrigation management decisions was an issue with producers and in working with Aqua Spy technicians and Texas A&M AgriLife Extension agents, 75% of the producers were able to understand the software and apply the varying levels of soil moisture that was present by utilizing the probes. Producers utilized the probes in corn, cotton, and hay crops, with this being the first year with probes in hay crops, understanding timing and amounts of irrigation to apply during the growing season also depends on the crop development stage. 100% of the producers gained knowledge and were able to evaluate crop progress, work on estimating yield potential in corn and cotton. In the hay crops, timing was different than that of row crops due to cutting and baling, but the producer did utilize bubblers following program on efficiency of irrigation systems, and was able to see a 9% (per producer) increase in forage production compared to the spray pattern system. Producers were able to evaluate cotton demonstration with total amounts of irrigation applied, and to look at termination information when calculating termination of crop. Looking at graphs with the soil moisture probe software, producers were able to calculate the amount of water needed to complete or finish the crop depending on the crop progress. By walking through several fields producers had field data to apply and understand the calculations to determine termination of crop and irrigation needed to complete the crop. 100% of the participants were completely satisfied with program and will utilize some type of soil moisture probe to assist with irrigation management decisions in the future, and 50% of the producers stated they would insert permanent soil moisture probes (up to 5 years) on certain farms. Producers were also able to maintain soil profile and stop irrigation during rain events by readings from soil moisture probes. Producers were also able to apply fertigation during rain events by reducing the amount of irrigation (from 1.5" to .25") and still apply fertilizers in a timely manner. Work on irrigation applies and yield data are still being processed due to late harvest, but will be added as soon as the information is available.