

# Addressing Agricultural NPS Pollution in the Arroyo Colorado Watershed through Continuing Education of Best Management Practices

Texas Water Resources Institute TR-517  
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# **Addressing Agricultural NPS Pollution in the Arroyo Colorado Watershed through Continuing Education of Best Management Practices**

**Final Report**

**TSSWCB 15-07**

**Texas Water Resources Institute Technical Report - 517**

**March 2019**

**College Station, Texas**

**By**

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Texas Water Resources Institute

U.S. Department of Agriculture, Natural Resources Conservation Service

Texas State Soil and Water Conservation Board, Harlingen Regional Office

Southmost Soil and Water Conservation District #319

Hidalgo Soil and Water Conservation District #350

The Texas Water Resources Institute is part of the Texas A&M AgriLife Extension Service, Texas A&M AgriLife Research, and the College of Agriculture and Life Sciences at Texas A&M University.

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## Executive Summary

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The focus of the Texas State Soil and Water Conservation Board (TSSWCB) Project 15-07, “Addressing Agricultural NPS Pollution in the Arroyo Colorado watershed through Continuing Education of Best Management Practices” was to continue efforts to alleviate impairments in the Arroyo Colorado watershed through educational programs and direct mailings targeted at controlling agricultural nonpoint source pollution. Texas Water Resources Institute (TWRI) and Texas A&M AgriLife Extension Service (AgriLife Extension) conducted educational programs within the three county area of the Arroyo Colorado watershed focused on best management practices (BMPs), nutrient management, and sources of financial and technical assistance. The continuation of these vital programs was made possible by funding from a Clean Water Act Section 319(h) grant from the TSSWCB and the U.S. Environmental Protection Agency (EPA).

This project began in 2016 and was a continued effort of previous agricultural education programs in the watershed. AgriLife Extension had prior programming that highlighted water quality issues in the Arroyo Colorado with guidance on how the agricultural community could aid in reducing pollutants. This guidance was primarily through educating producers on BMPs such as nutrient and irrigation management as well as providing resources for producers on financial and technical assistance for implementing these practices. By working closely with the TSSWCB, U.S. Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) and the local soil and water conservation districts (SWCDs), resources were utilized efficiently, and programs were current and relevant.

Over the three years of this project, 6,300 individuals were reached through attendance of educational programs, direct mailings, or participation from the annual soil testing campaign. Approximately 125 individuals submitted over 340 soil samples, representing 18,567.25 acres in the three county areas. Soil testing and agricultural education programs will continue to be a vital part of accomplishing the goals outlined in the Arroyo Colorado Watershed Protection Plan. Considering that the majority of the land within the watershed is under some type of agricultural production, these efforts will play an important role in keeping the agriculture community engaged and reaching new producers.

## List of Acronyms and Abbreviations

AC – Arroyo Colorado

ACW – Arroyo Colorado Watershed

ACWP - Arroyo Colorado Watershed Partnership

ACWPP - Arroyo Colorado Watershed Protection Plan

BMPs – best management practices

CEA – County Extension Agent

CEU – continuing education unit

DO – dissolved oxygen

EPA – U.S. Environmental Protection Agency

AgriLife Extension – Texas A&M AgriLife Extension Service

NRCS – U.S. Department of Agriculture, Natural Resources Conservation Service

NPS – nonpoint source

SWCD – Soil and Water Conservation District

TCEQ – Texas Commission on Environmental Quality

TMDL – Total Maximum Daily Load

TSSWCB – Texas State Soil and Water Conservation Board

TWRI – Texas Water Resources Institute

USDA – United States Department of Agriculture

WPP – watershed protection plan

WQMP – water quality management plan

## Introduction

The Arroyo Colorado (AC) is a tributary of the Rio Grande and, at one time was part of a diverse and unique semi-tropical, coastal environment. Today, the AC hardly resembles what it once was with 95% of its natural habitat cleared for agricultural and urban development. Stream bank destabilization due to habitat loss and major modifications to the channel for navigation and flood water conveyance has degraded the AC to the point where it can no longer efficiently assimilate pollutants. The combination of these factors has led to a severely impaired body of water.

The AC watershed is an area of approximately 706 square miles that encompasses portions of Hidalgo, Willacy and Cameron counties. The AC begins in Hidalgo County in the City of Mission flowing 90 miles across the Rio Grande Valley into the Lower Laguna Madre. The AC is classified as having two segments due to the difference in physical characteristics. Segment 2202 is the freshwater portion that is primarily used as a floodway and for wastewater conveyance for both urban and agricultural lands. Segment 2201 of the AC is tidally influenced and serves as an inland waterway for commercial barge traffic as well as a nursery and forage area for fish, shrimp and crab.

The AC watershed primarily consists of agricultural land where 292,723 acres are designated as agricultural land such as pasture, range, and cotton, grain sorghum, corn, sugar cane, citrus and a variety of vegetable crops are produced. In addition, there are at least 15 cities within the watershed that are rapidly growing and contributing to both urban point source and nonpoint source (NPS) pollution. Flow in the AC is sustained by urban wastewater, groundwater inflows, and irrigation return flow; however, during large rain events stormwater from agricultural and urban areas dominates the hydrology of the system.

Both segments of the AC have been on the Texas Integrated Report of Surface Water Quality (303d list) since 1996; as of 2012, Segment 2201 is listed for bacteria, DDE (breakdown product of DDT), PCBs and mercury in edible fish tissue and depressed dissolved oxygen. Segment 2202 is listed for mercury and PCBs in edible fish tissue and excess bacteria. Since 1998, various efforts have been made to mitigate pollutant loads into the AC. A Total Maximum Daily Load (TMDL) study began in 1998, but due to inconclusive results, the Texas Commission on Environmental Quality (TCEQ) recommended further monitoring and modeling of the AC watershed. In 2003, the Arroyo Colorado Watershed Partnership (ACWP) was formed to help create a comprehensive plan to address the issues in the AC; the recommendations from the ACWP were used to create the Arroyo Colorado Watershed Protection Plan (ACWPP), which was published in 2007.

Agriculture is considered to be a significant contributor of NPS pollution in the AC watershed. The ACWPP worked with watershed stakeholders to identify priority area in the watershed where management practices can and should be implemented. Management practices designed to conserve and protect soil and water resources also yield positive water quality benefits; however, the connection between these practices, water quality benefits are often not clear. As a result, the ACWPP recommended encouraging agricultural producers to voluntarily adopt recommended best





*Figure 1. Polypipe delivering irrigation water to each furrow thus reducing tailwater and offsite pollutant transport.*

management practices (BMPs) through education and outreach programs, field days, newsletters, and other resources. This project worked to address this need to provide informational resources via the means listed above, but the need to continue delivering this type of programming still exists and will into the future as farm ownership changes and new operators take over.

## **Objectives**

This project began in November of 2016 with the goal of continuing educational programs for agricultural producers regarding NPS pollution issues facing the AC and practices that can be implemented to help reduce nutrient and sediment loading into the AC. In order to encourage water quality-improving BMP adoption, the project highlighted technical and financial assistance programs available through NRCS and TSSWCB available to qualifying producers with field days and tours of on farm BMPs.

The Texas Water Resources Institute (TWRI) was tasked with handling project administration and coordination, while the AgriLife Extension Assistant carried out the project deliverables. The AgriLife Extension Assistant worked with TWRI, local County Extension Agents (CEAs), and other local conservation partners (NRCS, TSSWCB, SWCDs) to create relevant educational materials that included fact sheets and presentations for use in educational programs. The AgriLife Extension Assistant used the network of local partners to build upon existing programs and resources to host educational programs and events over the course of the project.

## **Project Coordination**

Throughout the project, TWRI and project partners regularly communicated to ensure that project tasks and deliverables were complete and consistent with the work plan as well as meeting what is outlined in the ACWPP. To facilitate this, the AgriLife Extension Assistant collaborated with USDA-NRCS for the ACWP's Agricultural Issues Workgroup to discuss the importance of BMP implementation and the financial and technical assistance offered for the on-farm practices. The watershed coordinator and the AgriLife Extension Assistant coordinated and facilitated the ACWP steering committee meetings throughout the project and participated in the local SWCD meetings to communicate agricultural activities. Numerous presentations were also delivered during meetings hosted by other agriculture focused entities as appropriate. During the project, TWRI also worked with partners to develop complimentary programs including the Lower Rio Grande Valley Water Quality Improvement Initiative funded by NRCS through the Regional Conservation

Partnership Program and Lower Rio Grande Valley Irrigation Education project funded by the Texas Water Development Board to deliver education resources to producers regarding water conservation potential from irrigation practices and technologies that are tailored to South Texas. One project coordination effort highlighted during the project term was the development of an irrigation training manual. Partners from the project coordinated and identified relevant information on program topics such as irrigation scheduling BMPs, irrigation scheduling, economics of irrigation, and water quality issues and combined them into the South Texas Irrigation Training Manual.

## Educational and Outreach Material

TWRI attended 18 local events, showing the ACW model and the rainfall simulator, teaching kids and educators about nonpoint source pollution within the watershed. Presentations taught the audience general information about water quality and made the following points:

- Rainfall in the watershed affects water quality in the Arroyo Colorado
- Landuse and landcover affect sediment and pollutant transport
- Everyone contributes to water pollution; sometimes without even knowing
- Everyone can help keep the Arroyo Colorado watershed clean
- Arroyo Colorado water quality impairments: bacteria, dissolved oxygen, nutrients
- Water quality effects on river ecology and uses

Additional presentations focused on explaining how to properly collect soil samples, and others provided information on financial and technical assistance from various state and federal agencies



*Figure 2. Field day participants on a farm tour.*

to help improve on farm practices. During the project term factsheets were developed to inform producers on narrow border flood irrigation and on how to properly handle chemical containers. At all the educational events BMP booklets which had been previously created in a past project were handed out including a hard copy and a digital copy of the irrigation training manual for more information on topics discussed by presenters throughout their presentations.





*Figure 3. Participant in an irrigation training workshop held in Edinburg.*

## Local Education Meetings

The primary purpose of this project was to deliver educational programs to producers within the watershed to address agricultural NPS pollution in the Arroyo Colorado watershed and implement BMPs. To do so, the AgriLife Extension Assistant attended and spoke in 55 different programs and events throughout the Lower Rio Grande Valley (see in appendixes below) that focused on topics such as raising awareness of agriculture NPS pollution in the AC, educating producers on the use of irrigation BMPs, promoting nutrient management and soil health, encouraging voluntary adoption of conservation plans, and how

to properly collect soil samples. Because of the wide array of potential impacts to water quality, various programs, events, and direct mailings were developed and delivered, ranging from irrigation trainings, creating landscapes that sustainably utilize water, and working with socially disadvantaged and beginning small-acreage producers.

A number of programs not directly hosted through this project were also supported during the planning and delivery phases. Recommendations on content relative to natural resource conservation and management were made and relevant speakers were recommended. Support for these programs was also provided by helping with event set up, registration, educational material display set up and on-site question and answer.

Content delivery at each program was tailored to meet the needs of each specific audience. Collectively, the programs successfully delivered soil and water resource conservation related information to all ages and demographic across the LRGV. In total, an estimated 6,300 individuals were reached through educational efforts directly related to the goals of this project. It is estimated that at least another 4,000 individuals were reached at larger, indirectly related events such as environmental expos, conferences, meetings, etc. An untold number of individual producer contacts and discussions were held before, during and after these meetings.

A complete list of the event date, name and location plus presentation titles (if appropriate) and estimated number of people attending is presented in Appendix A and meeting agendas from events hosted specifically through this project or that project staff collaborated in are presented in Appendix B. Program factsheets are included in Appendix C, press releases and newsletters are in Appendix D and a presentation given on water quality in the Arroyo Colorado is in Appendix E.

## Soil Testing Campaign

Since 2002, an annual soil testing campaign has been offered free of cost to agricultural producers in the Lower Rio Grande Valley to help them make educated decisions on nutrient application for their crops. Not only does this provide them with an opportunity to reduce fertilizer costs, but it helps to decrease nutrient losses into the AC. Originally the campaign was funded by USDA – Cooperative State Research, Education, and Extension Service and then by the Rio Grande Basin Initiative in Starr, Hidalgo, Willacy and Cameron counties. From 2008 to present, the campaign has been funded by various grants awarded to TWRI by the TSSWCB. As those projects focused on the AC watershed, only Hidalgo, Cameron, and Willacy counties, could participate in the campaign.

Under this project, the soil testing campaign began in October 2016 and ran through the end of January 2018. The soil testing campaign was promoted each season with a press release in the local newspapers, flyers posted at cotton gins, feed and seed stores, hardware stores, and information sent via email contact lists and by word of mouth. Soil testing was encouraged at nutrient management programs, cost share programs and any other educational programs, where appropriate. Soil sample bags and forms were available at the County USDA Service Centers, the TSSWCB Harlingen Regional Office, and local County Extension Offices or at the Texas A&M AgriLife Extension Service District 12 Office in Weslaco. Producers collected their own soil samples and returned them to those locations, they were shipped to the Texas A&M Soil, Water and Forage Testing Laboratory in College Station. In addition to the soil analysis, the project’s AgriLife Extension Assistant and County Extension Agents (CEAs) were available to demonstrate how to properly collect a soil sample and in some cases assisted in collecting samples (Figure 4). The free-soil analysis was mailed directly to the producer, where they could then consult with CEAs or representatives from NRCS or TSSWCB for further interpretation of those results.

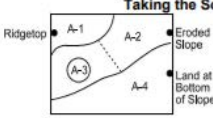
*Table 1. Arroyo Colorado soil testing campaign results.*

Soil Tests	#of Producers	# of Soil Samples	# of Acres
2016	25	100	6,267
2017	45	110	6,300.25
2018	55	130	5,000

In total, 125 producers submitted 340 soil samples that represented approximately 18,567.25 acres (Table 1). The soil testing campaign and associated educational programs have been effective in teaching producers about nutrient management and crop fertility needs. Producers participating in the soil testing campaign were encouraged to speak with their local CEAs, USDA-NRCS District and Soil Conservationists or the Extension Assistant for explanation of their soil results. During these discussions, producers indicated that they are benefiting from the soil testing campaign economically by allowing them to apply less nutrient and also better manage soil salinity and thus improve crop yields. Of the producers who discussed results with the Extension Assistant, 41%

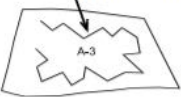
seemed to have a good idea of the nutrient requirements for their crops and most had planned their fertilizer applications well as evidenced by soil lab recommendations matching their plans closely. Producers new to the campaign or those that had not sampled their soil in the past 3 years (30%) were recommended to apply an average of 4 lbs./acre of N less than planned according to soil test analysis. The remaining 29% of participants did not respond as to whether or not they had sampled their soil in the past 3 years. Although there were not big numbers in nutrient reductions, we conclude that producers are generally applying the supplemental nutrient required to grow their crops. According to Soil, Water, and Forage Testing Lab director, test results from the soil testing campaign indicated that fertilized crops are using the majority of these nutrients, and they are likely not being lost in irrigation run off.

### Procedure for Taking Soil Samples




**Taking the Soil Sample (Refer to Figure 1)**

- Take one composite sample for every 10 to 40 acres. A separate sample should be taken for:
  - ⇒ Areas with different soil types
  - ⇒ Areas with different land uses or fertilizer uses
  - ⇒ Areas with different terrain
- Approximately 1 pint of the composite soil sample is required for routine analyses. Additional sample is required for texture or detailed salinity (submit 2 sample bags marked identically).
- Avoid sampling areas such as small gullies, slight field depressions, terrace waterways, or unusual areas.
- When sampling fertilized fields, avoid sampling directly in fertilized band.



**Taking a Composite Sample (Refer to Figures 2 and 3)**

- Take a sample from 10 to 15 different areas.
- Use a spade, soil auger or soil sampling tube.
- Clear litter from the surface (do not remove decomposed black material).
- When using a soil auger or sampling tool, make the core or boring 6 inches deep into the soil (3 to 4 inches deep for permanent sod)
- When using a spade:
  - ⇒ Dig a V-shaped hole and take a 1 inch slice from the smooth side of the hole.
  - ⇒ Take a 1 x 1 inch core from the center of the shovel slice
- Repeat in 10 to 15 different places. Put in a clean plastic bucket or other non-metallic container, thoroughly mix and remove a pint (or more if additional tests are desired) as a composite sample representing the whole field or area.
- To improve the nitrate-nitrogen analysis, samples may be **air dried** before sending to the laboratory. **Do not use heat** to dry samples.
- Completely fill soil sample bag or other suitable pint container. A Ziplock type 1 quart freezer bag is an excellent substitute container to submit samples (no glass containers). If more than one sample bag is used, label bags as 1 of 2, 2 of 2, etc.



**Shipping the Sample and Payment (Refer to Figure 4)**

- Complete the information form on the front page (information required for recommendations).
- Please include payment with the sample. Send check or money order made out to Soil Testing. **DO NOT SEND CASH.** Please note that the *price is per sample*. The laboratory accepts payment in the form of checks, money orders, online through Aggie Marketplace (credit cards). An extension of credit requires a current AG-257 to be on file with Texas A&M AgriLife Extension Service-see website.
- Be sure to keep a record for yourself of the area represented by each sample.
- Be sure that sample numbers on sample bags correspond with sample numbers on the front page.
- Send samples and payment to:

<b>United States Postal Service</b>	<b>Other Couriers (FedEx, UPS, etc.)</b>
Soil, Water and Forage Testing Laboratory 2478 TAMU College Station, TX 77843-2478	Soil, Water and Forage Testing Laboratory 2610 F&B Road College Station, TX 77845 Phone: (979) 845-4816
Website: <a href="http://soiltesting.tamu.edu">soiltesting.tamu.edu</a>	Email: <a href="mailto:soiltesting@tamu.edu">soiltesting@tamu.edu</a>

Educational programs conducted by the Texas A&M AgriLife Extension Service serve people of all ages regardless of socio-economic level, race, color, sex, religion, handicap or national origin.

Figure 4. Proper soil sample collection and handling fact sheet.

## **Conclusions**

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This project was a success based on the amount of individuals reached, educational publications created, and information gathered. Continued delivery of educational programs focused on addressing agricultural NPS pollution in the Arroyo Colorado Watershed will remain an important endeavor, even after water quality begins to improve. The majority of the land in the AC watershed is comprised of some form of agriculture and because implementation of BMPs and conservation plans are voluntary, it will be necessary to keep promoting these practices along with technical and financial assistance. Key barriers to adopting BMPs were identified as financial and educational needs. The soil testing campaign has been a huge success in the past and continues to be highly utilized by producers. Since we know that nutrient and irrigation water management are two of the most impactful BMPs when it comes to reducing nutrient and sediment loading into the AC, agricultural education programs, along with soil testing, will continue to be vital to improving water quality in the AC.

## Appendix A: Educational Program and Meeting Participation List

<i>Event Date</i>	<i>Presentation Title</i>	<i>Event Title</i>	<i># of People</i>	<i>Event Location</i>
1/19/16	Soil Testing Campaign & RCPP program	Pre-Plant Conference	125	Mercedes, TX
2/8/16	Soil Testing Campaign & RCPP program	SWCD Meeting	6	Edinburg, TX
2/11/16	NPS in the Arroyo Colorado Watershed	RGV Coastal Expo	50	Edinburg, TX
6/22/16	Soil Sampling Demonstration	Small Producers Workshop	15	Weslaco, TX
7/24/16	Irrigation Training Manual Overview	Soil and Water Conservation Workshop	34	Weslaco, TX
7/25/16	Financial and Technical Assistance Programs	Small Producers Workgroup	15	Weslaco, TX
8/1/16	Irrigation Training Manual Overview	Soil and Water Conservation District Meeting	10	Edinburg, TX
9/8/16	Irrigation Training Manual Overview	Ag Committee workgroup	10	San Benito, TX
9/16/16	Soil Sampling Demonstration at PSJA AG Facility	ACW Field Day	12	Pharr, TX
9/23/16	Irrigation Training Manual Overview and Soil Testing Campaign Update	Environmental Summit	50	South Padre Island, TX
10/3/16	ACW Model and Water Stream Trailer Presentation	ACW and Extension Workshop	30	Weslaco, TX
1/17/2017	Soil Testing Campaign	Pre-Plant Conference	210	Mercedes, TX
2/16-17/	Arroyo Watershed Model	Coastal Expo	40	Edinburg, TX
2/23/2017	Soil Testing Campaign: Collecting a Proper Soil Sampling	Small Producers Workshop	55	Weslaco, TX
3/23/2017	Irrigation BMPs & Financial & Technical Assistance	Fruit Production	40	Weslaco, TX
5/9/2017	Soil Testing Campaign & RCPP program	Citrus Irrigation Program	38	Mission, TX
5/11/2017	RCPP Update & Irrigation BMPs	Vegetable Field Day	110	Weslaco, TX
5/23/2017	RCPP Program, Soil Testing Campaign, and Financial & Technical Assistance	Agriculture Drought Impact Forum	25	Weslaco, TX
6/23/2017	Soil Testing Campaign & RCPP program	Farmers & Landowners Workshop	45	San Benito, TX
10/11/2017	Soil Testing Campaign Annual Kick Off	LRGV Forage Field Day	110	Combes, TX
10/19/2017	Water Conservation and Runoff	Wild in Willacy	250	Raymondville, TX
10/31/2017	ACW Model Presentation	Kids, Kows & More	400	Mercedes, TX
1/25/2018	Agricultural Non Point Source Pollution in the ACW	Master Rancher Program	18	San Benito, TX
2/8-9/2018	ACW model	Coastal Expo	400	Edinburg, TX
3/6/2018	RCPP program	Advances in Vegetable irrigation	30	Mission, TX
5/10/2018	Financial and Technical Assistance Programs	Livestock Production workshop	75	Weslaco, TX



6/8/2018	Soil Testing persentation	Minority Landowners Workshop	56	Mission, TX
7/11/2018	Collecting a Proper Soil Sampling	Plant & Soil Science workshop	25	Monte Alto, TX
10/18/2018	Water and Soil Conservation and Nutrient Run Off	Wild in Willacy	100	Raymondville, TX
11/9/2019	Water and Soil Conservation and Nutrient Run Off	Kids, Kows & more	1600	Mercedes, TX
12/5/2018	Collecting a Proper Soil Sampling	Vegetable Field Day	130	Weslaco, TX
12/6/2018	Careers in Agriculture and Environmental Science	NCAT USDA-NRCS field day	80	McAllen, TX
1/15/2019	Benefits of Soil Testing	Pre plant Conference	120	Mercedes, TX
2/7-8/2019	Water and Soil Conservation and Nutrient Runoff	Coastal Expo	1100	Edinburg, TX
3/1/2019	Financial and Technical Assistance Programs	Small Acreage Producers	45	Pharr, TX
3/20/2019	Agricultural Non Point Source Pollution in the ACW	Los Fresnos Job Fair	30	Los Fresnos, TX
3/26/2019	Careers in Agriculture and Environmental Science	Job Fair	65	Kingsville, TX
6/20/2019	Rainfall Simulator Demo and Nutrient Runoff	TSTC Nutrient run off	25	Harlingen, TX
10/17/2019	Water Conservation and Runoff	Wild in Willacy	120	Raymondville, TX
8/30/2017	Provided Program Support and Networked with Ag Producers	Local Ag workgroup meeting	12	Edinburg, TX
9/21/2017	Provided Program Support and Networked with Ag Producers	LRGV Irrigation Training Program	36	Weslaco, TX
10/11/2017	Provided Program Support and Networked with Ag Producers	LRGV Forage Production Field Day	110	Combes, TX
3/6/2018	Provided Program Support and Networked with Ag Producers	Advances in Vegetable Irrigation	35	Mission, TX
10/10/2018	Provided Program Support and Networked with Ag Producers	RGV Forage Field day	38	Raymondville, TX
3/27/2019	Provided Program Support and Networked with Ag Producers	ACW Steering committee meeting	25	Weslaco, TX
5/1-2/2019	Provided Program Support and Networked with Ag Producers	Minority Landowners workgroup	210	South Padre Island, TX
	Provided Program Support and Networked with Ag Producers	Small Acreage Goat Workshop	68	McAllen, TX
7/15/2019	Provided Program Support and Networked with Ag Producers	LRGV Irrigation Tour	18	Hidalgo, TX
7/16/2019	Provided Program Support and Networked with Ag Producers	Rio Farms Field day	35	Monte Alto, TX
7/17/2019	Provided Program Support and Networked with Ag Producers	ACW stream team meeting	40	Weslaco, TX
7/26/2019	Provided Program Support and Networked with Ag Producers	Small Acreage Livestock Conference	65	McAllen, TX
9/25/2019	Provided Program Support and Networked with Ag Producers	Irrigation Management and Technology Workshop	25	San Benito, TX
9/26/2019	Provided Program Support and Networked with Ag Producers	Irrigation Management and Technology Workshop	50	Edinburg, TX
10/15/2019	Provided Program Support and Networked with Ag Producers	Annual Forage Field Day	60	San Manuel, TX

## Appendix B: Educational Meeting Agendas



September 12, 2017  
2415 U.S. 83 Business, Weslaco, TX 78596

This free producer program will focus on the practical aspects of implementing water-conserving irrigation technologies as well as presentations on research findings about water conservation, economic issues and other issues.

- 8:00 – 8:30    **Registration**
- 8:30            **Welcome and Introductions**  
Dr. Lucas Gregory
- 8:40            **Value of Irrigation in the LRGV**  
Dr. Luis Ribera
- 9:05            **Irrigation Scheduling (Soil Moisture Monitoring) and Best Management Practices**  
Dr. Juan Enciso
- 9:30            **Irrigation Technologies and Crop Specific Guidelines**  
Dr. Dana Porter
- 9:55            **Break**
- 10:10          **Water Quality Issues in Irrigation**  
Dr. Askar Karimov
- 10:35          **TWDB Ag Water Conservation**  
Kevin Kluge
- 11:00          **NRCS Nutrient Management**  
NRCS Representative
- 11:25          **TSSWCB Irrigation Conservation Practices**  
TSSWCB Representative
- 11:50          **Fertigation/Chemigation**  
Danny Sosebee
- 12:15          **Adjourn**

## Soil Health & Irrigation Conservation Workshop

Date: August 24, 2016

Location:

Texas A&M AgriLife Research & Extension Center, Hoblitzelle Auditorium  
2401 East Business Hwy 83 Weslaco, TX. 78596

8:00 AM- REGISTRATION

8:20 AM- Welcome

Rolando R. Zamora, Extension Agent-CEP (AgNR)

8:30 AM- Internet Weather Based Tools for Irrigation Management,

Dr. Juan Enciso Texas A&M AgriLife Research Associate Professor

Victor Gutierrez, Extension Assistant Texas Water Resources Institute

9:00 AM- Soil Health for Maximum Productivity

James Henderson, USDA-NRCS Agronomist

9:30 AM- USDA-NRCS Programs

Ray Hinojosa-District Conservationist USDA-NRCS

10:05 AM- Concepts in Integrated Pest Management

Dr. Ismael Badillo-Assistant Professor, Texas A&M AgriLife Research

10:30 AM- Nutrient Management

Dr. Enrique Perez, Texas A&M AgriLife-CEA Extension Cameron County

11:00 AM- USDA-FSA Commodity Programs

Chris Perez – USDA-FSA County Executive Director, Cameron County

11:20 AM- Texas State Soil Water Conservation Board

Ricardo Chapa-Regional Manager, Texas State Soil Water Conservation Board

11:40 AM- Rules and Regulations

TDA

LUNCH

1:00 PM- USDA FSA-Farm Loan Programs

Arnulfo Lerma-Farm Loan Manager USDA-FSA

1:30 PM- Technical Assistance with FSA Farm Loan Applications

Vidal Saenz, Extension Agent-CEP (Farm Advisor)



**Summer Season Outlook and Impacts Forum for Agriculture in  
the Lower Rio Grande Valley**

Citrus Center  
312 N International Blvd  
Weslaco, TX 78599

May 23, 2017

8:30-9:30    **Registration (coffee and rolls provided)**

9:30        **Welcome and introductions**

*Cate Simpson, Texas A&M Kingsville*  
*Peter Lake, Texas Water Development Board*  
*David Brown, USDA Southern Plains Climate Hub*

**Workshop purpose and overview**

*Brian Fuchs, National Drought Mitigation Center (NDMC)*

**Climate and Outlook Forum**

*Moderator: David Brown, USDA*

10:00        **Current Conditions, Changing Conditions, and Future Conditions: The Impact to  
Agriculture in the Lower Rio Grande Valley**  
*John Nielsen-Gammon, Texas State Climatologist*

10:40        **Break**

11:00        **Drought early warning and preparedness in the Southern Plains**  
*Brian Fuchs, NDMC*

11:30        **United States Drought Monitor Educational and Outreach Material for Stakeholders**  
*Tonya Bernadt, NDMC*

11:45        **Open Discussion**

**Lunch (provided)**

**Agricultural Impacts Forum**

*Moderator: Brian Fuchs, NDMC*

1:00        **Water Providers Panel**

*Sonny Hinojosa, Hidalgo County Irrigation District #2*  
*Tom McLemore, Harlingen Irrigation District*  
*Sonia Lambert, Cameron County Irrigation District #2*

1:50        **TWDB Agricultural Water Conservation Grants Program**

*Cameron Turner, Texas Water Development Board*

2:00        **Agricultural Water Conservation Projects Panel**

*Juan Enciso, Texas A&M AgriLife*  
*Victor Gutierrez, Texas A&M AgriLife Extension*  
*Cate Simpson, Texas A&M University-Kingsville*

2:45        **Break**

*Short presentation at the demonstration site*

3:15        **Farm Bill programs and funding opportunities**

*Salvador Salinas, Texas NRCS State Conservationist*

3:45        **Open Discussion/Final Thoughts**

*Brian Fuchs, NDMC*

4:00        **Adjourn**



# Citrus irrigation techniques to save water and improve grower returns

May 9, 8 a.m.- 3 p.m.

Lone Star Citrus Growers, 9625 North Moorefield Road, Mission, TX

This free producer program will focus on the practical aspects of implementing water conserving irrigation technologies in citrus production and provide an opportunity to observe and discuss these practices in a commercial grove.

Producers currently using these techniques will provide their perspectives, and researchers will convey water conservation, economic and other findings on each approach discussed.

- Free catered lunch
- 1 hour CEU credit (pesticide applicator license) available
- Technical and financial assistance opportunities and resources available to producers will be discussed

**Please register by May 5 at:**  
**[twri.tamu.edu/irrigation](http://twri.tamu.edu/irrigation)**

  
Texas Water  
Resources Institute

  
TEXAS A&M  
KINGSVILLE



TEXAS A&M  
AGRI LIFE  
EXTENSION



## Free One-Day Citrus Irrigation Advances Program for Growers

Learn about new irrigation techniques to save water and improve returns

**Where:** Lone Star Citrus Growers, 9625 North Moorefield Road, Mission TX

**When:** Tuesday, May 9, 2017                      8:00 am – 3:00 pm

This free producer program will focus on the practical aspects of implementing water conserving irrigation technologies in citrus production and provide an opportunity to observe and discuss these practices in a commercial grove. Producers currently using these techniques will provide their perspectives and researchers will convey water conservation, economic and other findings on each approach discussed. Pest management implications of irrigation practices will provide **1 hour of CEU credit** for your pesticide applicator license. Grower comments and discussion will be encouraged among all participants. Technical and financial assistance opportunities and resources available to producers will be discussed. Catered lunch will be provided free of charge.

Please register by May 5<sup>th</sup> at: <http://twri.tamu.edu/irrigation>

### Planned Agenda

- 8:00** Registration and coffee – Lone Star Citrus packing house parking lot
- 8:30** Field tour – Lone Star Citrus grove
- Evolution of water conservation for citrus in RGV
    - From Morocco to ADI – **Shad Nelson, TAMU Kingsville**
    - From Bayview to MAC projects – **Mamoudou Setamou, TAMUK Citrus Center**
    - Grower perspectives on drip irrigation and plastic mesh – **Jud Flowers**
  - Pros and cons of drip, narrow border, raised beds and plastic mesh
- 10:30** Irrigation and water conservation - Lone Star Citrus packing house
- Project Background – **Lucas Gregory, Texas Water Resources Institute**
  - Water savings and secondary benefits:
    - Narrow border and drip – **Shad Nelson, TAMU Kingsville**
    - Raised beds and plastic mesh – **Catherine Simpson, TAMUK Citrus Center**
    - Irrigation technology economics in LRGV citrus – **Mac Young, TAMU AgriLife Extension**
  - Grower panel: comments/discussion on grower experience with alternative irrigation strategies
- 12:00** Box lunch: Lone Star Citrus Grower packing house
- ADI video – Agricultural Water Efficiency project by Harlingen ID
- 12:45** Practice Implementation Considerations
- Citrus pest management related to water management
    - Soil borne disease update – **Veronica Ancona, TAMUK Citrus Center**
    - Citrus insect update – **Mamoudou Setamou, TAMUK Citrus Center**
  - Cost share programs
    - EQIP program – **Sonny Vela, NRCS**
    - 319 and 503 programs – **Brian Koch, TSSWCB**
  - Regional Conservation Partnership Program – **Victor Gutierrez, Texas Water Resources Institute**
  - Wrap-up: Barriers to water conservation in citrus. How can they be overcome?
- 3:00** Adjourn



8:30am-9:00am - **Registration & Breakfast**

9:00am-9:15am - **Welcome** - Dr. Landivar

9:05am-9:30am - Keynote Speakers - **Vegetable Initiative Capacity Building, Linking Agriculture and Nutrition** - Dr. Bill McCutchen and Dr. Juan Landivar

9:30am-12:30pm - **Field Tours** (15 Min. Each Station)

1. Hydroponics/Aquaponics - Dr. John Jifon
2. Tomato Cropping System/Moveable Tunnel - Dr. Thiago Marconi
3. Irrigation Technology and Soil Testing - Victor Guterrez & Dr. Juan Enciso
4. Precision Agriculture, Unmanned Aerial System - Dr. Jinha Jung
5. Potato Psyllid - Zebra Chip Disease - Dr. Ismael Badillo
6. Tomato Breeding Program/High Tunnel - Dr. Carlos Avila

12:30-1:30pm - **Lunch**

1:30pm-1:45pm - **TAMU Higher Education Center** - Rick Margo & Natasha N. Quailles

1:45pm-2:00pm - **Development of Flavorful-High Value Tomato Cultivars**

**Adapted to South Texas Production Systems** - Dr. Carlos Avila

2:00pm-2:15pm - **Vegetable Agricultural Economics** - Dr. Samuel Zapata

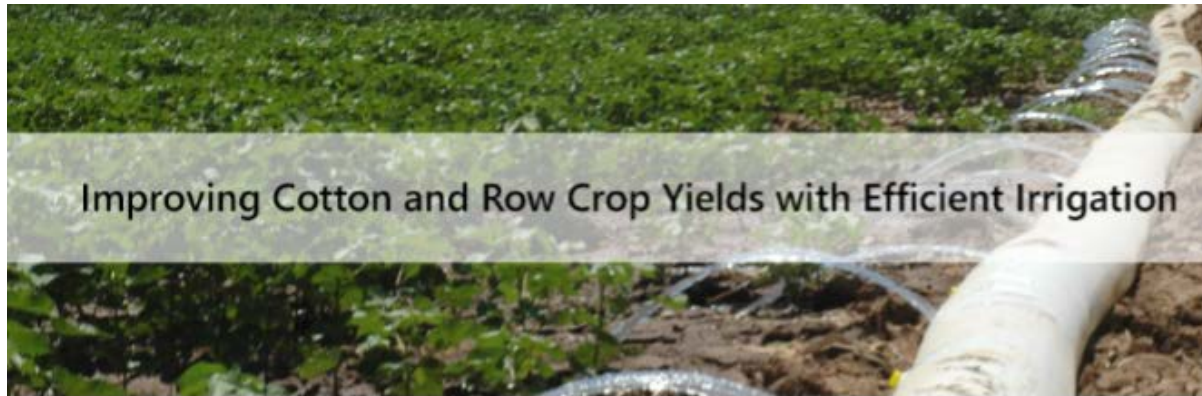
2:15pm-2:30pm - **Evaluating Alternative Strategies to Chemical Control to Manage Insect Vectors and Plant Diseases in Vegetables** - Dr. Ismael Badillo

2:30pm -2:45pm - **Vegetable Food Safety** - Dr. Juan Anciso

2:45pm-3:00pm - **IPM Update in Cotton and Grain** - Danielle Sekula

2 Hours of CEU will be Provided During Vegetable Field Day

\*Schedule Subject To Change\*



**Where:** Texas A&M Kingsville Citrus Center  
312 N. International Blvd. Weslaco, TX 78599

**When:** Tuesday, October 16, 2018      7:30 am – 12:00 pm

This free educational program will focus on the practical aspects of producing more cotton and other row crops with less water to improve the bottom line of producers. Furrow irrigation is the most common practice used in row crops and this program will focus on maximizing its efficiency to use less water while maintaining or improving yields. Dr. Jason Krutz, from Mississippi will talk at length about his experience working with producers to improve furrow irrigation efficiency in the Mississippi Delta region and how those efforts can translate to the LRGV. He will also interact with a moderated panel of local producers to discuss and answer questions regarding their experiences and practical aspects of enhanced furrow irrigation management.

**Please register by October 10<sup>th</sup> at: <http://twri.tamu.edu/irrigation>**

- 7:30** Registration and coffee
- 8:00** Welcome and program overview  
Lucas Gregory, Senior Research Scientist, Texas Water Resources Institute
- 8:15** Producer experience with improving furrow irrigation in the southeast: will these approaches work in Rio Grande Valley?  
Jason Krutz, Director, Mississippi Water Resources Research Institute
- 9:00** Cotton producer panel on potential solutions to improve furrow irrigation  
Moderator: Ray Prewett, Ag Issues Consultant
- 10:15** Break
- 10:30** Improving Crop Yields and Economics through Irrigation Management  
Mac Young, Extension Program Specialist, Texas A&M AgriLife Extension
- 11:00** Agency Program Updates  
NRCS EQIP and other Programs:      Sonny Vela  
TSSWCB WQMP Program:              Ronnie Ramirez
- 11:30** Rio Grande Study Update  
Askar Karimov, Research Associate, Texas A&M AgriLife Extension Service
- 11:40** Producers questionnaire and program evaluation
- 11:50** Closing comments – Lucas Gregory, Texas Water Resources Institute



**SAVE THE DATE!!!**

## RGV Forage Field Day!

8:30 a.m.

Wednesday, October 10, 2018

Encino Farms

Spence Rd. (North of State Hwy 186)

Raymondville, TX 78580



## TOPICS

- PEST MANAGEMENT/INVASIVE SPECIES
- PRESCRIBED GRAZING & STOCKING RATES
- OPERATIONS/ FIELD DEMONSTRATION
- HAY SAMPLING
- COST OF PRODUCTION
- PRF INSURANCE
- FINANCIAL PROGRAMS BY NRCS, FSA, TDA & TSSWCB

**FREE LUNCH PROVIDED!**





## Advances in Vegetable Irrigation

Texas International Produce Association  
901 Business Park Dr. Suite 500, Mission TX

March 6, 2018 | 8:00 am – 12:00 pm

This free producer program will focus on the practical aspects of implementing water conserving irrigation technologies in vegetable production. Producers currently using these practices will provide local perspectives and industry representatives will discuss technology advancements, water conservation impacts and economic returns for discussed technology. Pest management implications of practice implementation will be covered and allow 1 hour of TDA CEUs to be provided. Technical and financial assistance opportunities and resources available to producers will be discussed. Please register by March 1 at: [twri.tamu.edu/irrigation](http://twri.tamu.edu/irrigation)

- 7:30 am Registration and coffee – Texas International Produce Association
- 8:00 am Welcome – *Dante Galeazzi*, President and CEO, Texas International Produce Association
- 8:05 am Workshop Overview – *Lucas Gregory*, Research Scientist, Texas Water Resources Institute
- 8:15 am Grower Experiences and Perspectives on Drip Irrigation in Vegetables:
  - Moderator: *Ray Prewett*
  - Grower Representatives: *Mike Helle*, Helle Farms & *Fred Schuster*, Schuster Farms
- 9:00 am New Irrigation Technologies for Produce:
  - Moderator: *Lucas Gregory*
  - Industry Representatives: *Danny Sosebee*, Netafim & *Steven Vandever*, Sostena
  - AgriLife Representatives: *Thiago Marconi*, AgriLife Research – UAS in Vegetable Production & *Catherine Simpson*, Texas A&M Kingsville Citrus Center – Advances in Valley Vegetable Production and Irrigation
- 10:00 am Agency Resources and Cost share programs
  - EQIP and Other NRCS programs – *Oz Longoria*, NRCS – San Benito
  - 319 and 503 program – *Ronnie Ramirez*, TSSWCB – Harlingen
  - Regional Conservation Partnership Program – *Victor Gutierrez*, Texas Water Resources Institute – Weslaco
  - TWDB Water Conservation Programs – *Kathleen Jackson*, TWDB Director
- 10:45 am Vegetable Production IPM – *Juan Anciso*, AgriLife Extension
- 11:45 am Discussion and Next Steps in the Industry – *Dante Galeazzi*
- 12:00 pm Adjourn



# Irrigation Management and Technology Workshop

Cameron County San Benito Annex: Extension Meeting Room  
1390 W. Expressway 83, San Benito, TX  
September 25<sup>th</sup>, 2019

This free producer program will highlight current irrigation management techniques and technologies available to growers that have the potential to add efficiency to their operations and conserve water resources. Discussion items will include irrigation scheduling, irrigation management techniques, new technologies available to the grower and salinity management. Economics and value of irrigation water will also be highlighted. Options for chemigation and fertigation discussion will provide 1 hour of CEU credit for TDA pesticide applicator license holders. Technical and financial assistance opportunities and resources available to producers will also be discussed.

Please Register by September 20<sup>th</sup> at <http://twri.tamu.edu/irrigation>

## Program Agenda

- 12:15 Registration & Light Refreshments
- 12:30 Welcome and Introductions  
Dr. Lucas Gregory, Texas Water Resources Institute
- 12:40 Irrigation Scheduling Tools and Approaches  
Dr. Dana Porter, Texas A&M AgriLife Extension Service, Biological and Agricultural Engineering
- 1:15 Irrigation Management and Technologies Panel  
Mr. Danny Sosebee, Netafim USA  
Mr. Jeffery Kleypas, Toro Irrigation  
Mr. Ken Whitley, Trellis, Inc.
- 2:00 Economics and Value of Irrigation Water  
Dr. Luis Ribera, Texas A&M Agricultural Economics
- 2:30 Networking Break and Refreshments
- 2:45 TWDB TexMesonet Overview  
Leyon Greene, Texas Water Development Board
- 3:00 NRCS Technical and Financial Assistance Opportunities  
TBD, NRCS District Conservationist
- 3:10 TSSWCB Technical and Financial Assistance Opportunities  
Mr. Ronnie Ramirez, TSSWCB Conservation Planner
- 3:20 Salinity Management in Irrigation Water  
Dr. Girisha Ganjegunte, Texas A&M Soil and Crop Sciences
- 4:05 Chemigation and Fertigation Irrigation Options and Considerations for Growers  
Dr. Juan Enciso, Texas A&M AgriLife Research
- 5:05 Program Evaluation and Adjourn



# Irrigation Management and Technology Workshop

Echo Hotel and Conference Center: Vista Room  
1903 South Closner Blvd. Edinburg, TX  
September 26<sup>th</sup>, 2019

This free producer program will highlight current irrigation management techniques and technologies available to growers that have the potential to add efficiency to their operations and conserve water resources. Discussion items will include irrigation scheduling, irrigation management techniques, new technologies available to the grower and salinity management. Economics and value of irrigation water will also be highlighted. Options for chemigation and fertigation discussion will provide **1 hour of CEU credit** for TDA pesticide applicator license holders. Technical and financial assistance opportunities and resources available to producers will also be discussed.

**Please Register by September 20<sup>th</sup> at <http://twri.tamu.edu/irrigation>**

## Program Agenda

- 07:45 Registration & Coffee
- 08:00 Welcome and Introductions  
Dr. Lucas Gregory, Texas Water Resources Institute
- 08:10 Irrigation Scheduling Tools and Approaches  
Dr. Dana Porter, Texas A&M AgriLife Extension Service, Biological and Agricultural Engineering
- 08:45 Irrigation Management and Technologies Panel  
Mr. Danny Sosebee, Netafim USA  
Mr. Jeffery Kleypas, Toro Irrigation  
Mr. Ken Whitley, Trellis, Inc.
- 09:30 Economics and Value of Irrigation Water  
Dr. Luis Ribera, Texas A&M Agricultural Economics
- 10:00 Networking Break and Refreshments
- 10:15 TWDB TexMesonet Overview  
Leyon Greene, Texas Water Development Board
- 10:30 NRCS Technical and Financial Assistance Opportunities  
TBD, NRCS District Conservationist
- 10:40 TSSWCB Technical and Financial Assistance Opportunities  
Mr. Ronnie Ramirez, TSSWCB Conservation Planner
- 10:50 Salinity Management in Irrigation Water  
Dr. Girisha Ganjgunte, Texas A&M Soil and Crop Sciences
- 11:35 Chemigation and Fertigation Irrigation Options and Considerations for Growers  
Dr. Juan Enciso, Texas A&M AgriLife Research
- 12:35 Program Evaluation and Adjourn



### PROGRAM IMPACTS

- 12 workshops conducted. Available at: [bit.ly/agrilife](http://bit.ly/agrilife)
- 387 farmers have participated in the program
- Participation in the program has increased farmers knowledge by 67%
- 86% of participants plan to adopt what they have learned
- \$1,328 expected economic benefit per participant



For more information contact:

- Ashley Gregory**  
(956) 383-1026  
[ahgregory@ag.tamu.edu](mailto:ahgregory@ag.tamu.edu)
- Jennifer Herrera**  
(956) 3618236  
[jherrera@ag.tamu.edu](mailto:jherrera@ag.tamu.edu)
- Vidal Saenz**  
(956) 383-1026  
[vsaez@ag.tamu.edu](mailto:vsaez@ag.tamu.edu)
- Rolando Zamora**  
(956) 689-2412  
[rzamora@ag.tamu.edu](mailto:rzamora@ag.tamu.edu)
- Victor Gutierrez**  
(956) 968-5581  
[victor.gutierrez@ag.tamu.edu](mailto:victor.gutierrez@ag.tamu.edu)
- Samuel Zapata**  
(956) 968-5581  
[Samuel.zapata@ag.tamu.edu](mailto:Samuel.zapata@ag.tamu.edu)



# RGV Small Acreage Educational Program

2018

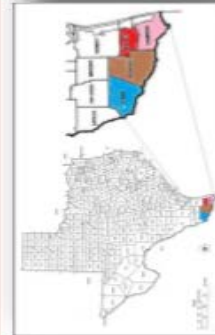






### Program Objective

The main goal of this program is to improve agriculture sustainability in the Lower Rio Grande Valley by training small farmers and ranchers, beginning farmers, young farmers and veterans in effective agricultural production practices and farm management.



Lower Rio Grande Valley

## 2018 AGENDA

Educational Program for RGV Small-Acreage Farmers and Ranchers

- February 20  
Sam - 12pm  
Community Garden Field Day  
Food Bank of RGV, Harlingen
- March 29  
Sam - 12pm  
Horticulture Production Workshop.  
Texas A&M AgriLife Research and Extension Center, Weslaco
- May 10  
Sam - 12pm  
Livestock Workshop  
Texas A&M AgriLife Research and Extension Center, Weslaco
- June 28  
Sam - 4pm  
Livestock Conference  
Texas A&M AgriLife Research and Extension Center, Weslaco
- August 23  
Sam - 4pm  
Horticulture Conference  
Texas A&M AgriLife Research and Extension Center, Weslaco
- September 27  
Sam - 12pm  
Value Added Workshop  
Texas A&M AgriLife Research and Extension Center, Weslaco

Reasonable accommodations are provided upon request and in accordance with the Americans with Disabilities Act. For assistance or to request a reasonable accommodation, please call (956) 361-8236 at least 48 hours in advance.

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, religion, sex, national origin, age, disability, genetic information or veteran status. The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating

## AREAS OF TRAINING AND EDUCATION

Training and outreach activities are focused on marketing and business planning, crop production, irrigation and water management, and livestock production.



## TRAINING AND OUTREACH ACTIVITIES

- Workshops
- Field days
- In situ and online demonstrations
- Creation of work opportunities (students and veterans)
- One-on-One and group training
- Extension publications and educational materials (English and Spanish)





## **Business Planning Workshop for Small Scale Ag Producers**



**Thursday, August 31, 2017**

**Texas A&M Agrilife Extension Service  
2415 U.S. Business 83, Weslaco, TX. 78596**

*Free Program*

8-8-30 a.m. - **Registration**

8:30 - **Welcome by Rolando R. Zamora**

8:35-10:00 - **The Importance of Developing a Business Plan for Loan Acquisition**— Dr. Nelson Daniels, Program Specialist

10:00 a.m. **Break**

10:15-10:40 - **Knowing the costs of production on your operation/enterprise**— Dr. Samuel Zapata, Assistant Professor & Extension Specialist-Agricultural Economics

10:40-11:00-**TDA Resources and tools for Ag Producers**-Nelda Barrera, TDA Go Texan Program

11:00-11:15 -**USDA-Farm Service Agency Microloan Programs**- Arnulfo Lema-Farm Loan Manager

11:15-11:30-**Technical Assistance from the Cooperative Extension Program**— Loans— Vidal Saenz, Extension Agent-CEP

11:30-11:45- **Questions and Evaluation of Program**

Call to Register

(956) 383-1026



Cooperative Extension Program

TEXAS A&M  
**AGRILIFE**  
EXTENSION

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**RSVP BY APRIL 26, 2017!**

**TEXAS A&M AGRILIFE RESEARCH & EXTENSION**

**2415 E BUS. 83 – WESLACO**

**FIELD DAY—VEGETABLE CROPS**

**MAY 11, 2017**

**8:30 AM—1:00 PM**

- Tomato Research
- Insect Pests and Vectors
- Brassica
- Competitiveness of vegetable production in South Texas
- UAV demonstration (drones)
- Field Tours
- Lunch

**RSVP to: [annette.reed@ag.tamu.edu](mailto:annette.reed@ag.tamu.edu)**



PRAIRIE VIEW  
A&M UNIVERSITY  
COLLEGE OF AGRICULTURE  
AND HUMAN SCIENCES

Cooperative Extension Program

TEXAS A&M  
AGRI LIFE  
EXTENSION



## JOIN US FOR A FOOD SAFETY WORKSHOP

Thursday, June 29th

Registration: 8:30 am

9:00 am to 12:00 pm

Texas A&M AgriLife Extension Service  
(2415 U.S. 83 Business, Weslaco, TX 78596)

### Speakers

**Dr. Juan Anciso**

Associate Professor and Extension  
Vegetable Specialist

**Nelda Barrera**

Field Representative, Texas Department of  
Agriculture

**Lilian Mezquida**

AgriLife Extension Family Consumer Science  
Agent

### Topics

- Field Food Safety
- Food Safety Resources
- Food Safety  
Certification Classes

Call to Register

956.361.8236

# Goat & Poultry Production 101 Workshop

May 18, 2017  
Vegetable Building  
In Weslaco, Texas

*Texas A&M Agrilife Extension Service 2415 U.S. 83 Business, Weslaco, TX 78596*

- 8:30 a.m. Registration
- 9:00 Welcome-Rolando R. Zamora, Extension Agent-AgNR, Willacy County
- Goat Management & Production**  
Dr. Flavio Ribeiro Research Scientist, PVAMU College of Agriculture Human Sciences (Goat)
- 10:00 **Products Made from Goats Milk**  
Jacob and Nicole Solsbee
- 10:30 **Break**
- 10:40 **Poultry Production, Starting a Backyard Flock**  
Dr. Greg Archer, Assistant Professor & Extension Specialist (Poultry)
- 11:40 **Sales of Fresh Farm Eggs for Farmers Markets**
- 12:10 Evaluation





**PRAIRIE VIEW  
A&M UNIVERSITY**  
COLLEGE OF AGRICULTURE  
AND HUMAN SCIENCES

Cooperative Extension Program

**TEXAS A&M  
AGRI LIFE  
EXTENSION**

**FREE**

**JOIN US FOR  
GOAT & POULTRY 101  
WORKSHOP**

*Rio Grande Valley-* The Cooperative Extension Program is partnering with the Texas A&M Agrilife Extension Service by hosting a Goat & Poultry Production 101 Workshop for new beginning farmers and ranchers that are seeking business opportunities in the area of agriculture production



**Thursday, May 18th**  
**Registration: 8:30 am**  
**9:00 am to 12:00 pm**



**Texas A&M AgriLife Extension Service**  
(2415 U.S. 83 Business, Weslaco, TX 78596)

**Speakers**

**Dr. Flavio Ribeiro**  
Prairie View A&M University College of  
Agriculture Human Sciences

**Dr. Greg Archer**  
Extension Specialist & Assistant Professor  
Department of Poultry

**Sandra Brown**  
Local Grower and Deep South Texas Master  
Gardener

**Jacob Sosebee**  
Owner of Edens Lilly Goat

**Topics**

- **Best Practices and Procedures on Goats**
- **Best Practices and Procedures on Poultry**
- **Fresh Farm Eggs**
- **Goat Milk Bi-Products**

**Call to Register**  
**956.361.8236**

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# Farmers & Landowners Workshop

USDA Natural Resources Conservation Service-Texas  
Minority Landowner Magazine

**June 22, 2017**

**June 23, 2017**

County Extension Service  
Cameron Co. Annex Building  
1390 W. Expressway 83  
San Benito, Texas 78586

Yahweh's All Natural  
Farm & Garden  
19741 Morris Road  
Harlingen, Texas 78552

Registration is free and begins both days at 8:30 AM  
Program ends at 3PM June 22<sup>nd</sup> and 5PM June 23<sup>rd</sup>

RSVP to USDA-NRCS at (956) 399-2522, ext. 6375  
or email [Oz.Longoria@tx.usda.gov](mailto:Oz.Longoria@tx.usda.gov)

U.S. Department of Agriculture representatives will share information to help improve your farm, whether large or small. Experts will be available for cost share and financial assistance programs; conservation programs and conservation planning; farm loan programs; organic farming; urban agriculture; pollinators; soil health; agricultural marketing; cattle and hay operations; high tunnels (hoop houses); erosion control; irrigation systems; veteran's programs and more. Lunch is provided both days.

On Friday, June 23<sup>rd</sup> farmers can participate in the construction of a seasonal high tunnel built from the ground up. See photo upper right.



This workshop is the result of an outreach agreement between Minority Landowner Magazine and TX USDA-NRCS. USDA is an equal opportunity employer and provider.



Seasonal High Tunnel





23<sup>rd</sup> Annual RGV

# COTTON & GRAIN *Pre-Plant Conference*

& Annual Membership Meeting of the Cotton & Grain Producers of the LRGV

Tuesday, January 17, 2017

Rio Grande Valley Livestock Show Event Center, Mercedes

8:00-9:00 a.m. Registration, coffee and breakfast tacos, come early to visit!!

First speaker @ 9:00 a.m.

TDA CEU's will be offered



## Program Topics

### Terminating Cotton with Herbicides

Danielle Ortiz, IPM Agent, Weslaco

### Sugarcane Aphid- Changing the Way We Grow Sorghum

Dr. Robert Bowling, Extension Entomologist, Corpus Christi

### Cotton & Grain Market Update & Marketing Strategies for 2017

Dr. Mark Welch, Extension Economist- Grain Marketing, College Station

### Weighing the Benefits, Limitations, and Risks of New Transgenic Cotton Varieties

Dr. Gaylon Morgan, Extension Agronomist- Cotton, College Station

### Cotton Varieties for the Valley for 2017

Dr. Josh McGinty, Extension Agronomist, Corpus Christi



Luncheon Speaker: Robbie Minnich

Washington Operations- National Cotton Council, Washington, D.C.

Lunch Program: Annual Membership Meeting of the

Cotton and Grain Producers of the Lower Rio Grande Valley

Brady Taubert, President • Dr. Webb Wallace, Executive Director

*Lunch & other meeting expenses sponsored by our Allied Industry Partners*



### New Developments in the RGV & Northern Mexico Boll Weevil Eradication Programs

Larry Smith, Program Director, Texas Boll Weevil Eradication Foundation, Abilene

### Drones in Agriculture- What's Practical Now, Researching Future Possibilities

Murilo Maeda, Assist. Research Scientist, Corpus Christi

### Practical Considerations of Using the Extend Flex Technology

Lynn Angell, Monsanto Chemistry Rep, Boerne & Dr. Luke Etheredge, Weed Resistance TDR, Llano

### Practical Considerations of Using the Enlist Technology

Hailey Nabors, Dow Enlist Specialist, Oklahoma City

### New Developments from Industry

Industry Representatives

At the conclusion of the conference all are invited to stay for the **Texas Corn Town Hall** sponsored by Texas Corn Producers. Voice issues on farm bill, crop insurance, regulations, etc. Updates on checkoff & association work. Directors & staff will be present to hear feedback & concerns. All growers welcome!

For more information contact: Brad Cowan, County Extension Agent-Agriculture, Hidalgo, 383-1026,  
Dr. Enrique Perez, County Extension Agent-Agriculture, Cameron, 361-8236, Matthew Rodriguez, County Extension Agent- Agriculture, Willacy, 689-2412  
Persons with special needs are requested to call 800-638-8239 in advance so those may be addressed.

Educational programs of the Texas A&M AgriLife Extension Service are open to all people without regard to race, color, sex, disability, religion, age or national origin.  
The Texas A&M University System, U.S. Department of Agriculture and the County Commissioners Courts of Texas Cooperating Flyer update 12/29/16

# RGV Forage Field Day

Wednesday, October 11, 2017  
Wesley Valerius Farms  
20775 N. Tamm Lane  
¼ miles N of FM 107  
Harlingen, TX 78552  
8:30 am - 12:00 pm  
First speaker @ 9:00 a.m.  
TDA CEU's will be offered



## Program Topics

### Bermudagrass Stem Maggots

Dr. Robert Bowling, Extension Entomologist,  
Texas A&M AgriLife Extension, Corpus Christi

### Weed Management & Fertility

Dr. Josh McGinty, Extension Agronomist,  
Texas A&M AgriLife Extension, Corpus Christi

### Hay Equipment Field Demonstration

Equipment Dealers  
(Weather permitting)

### 2017 Soil Testing Campaign

Victor Gutierrez, Extension Assistant,  
Texas Water Resource Institute (TWRI),  
Texas A&M AgriLife Extension, Weslaco

### Cost of Production/PRF Insurance

Dr. Samuel Zapata, Extension Economist,  
Texas A&M AgriLife Extension, Weslaco

### Financial Programs

- Natural Resource Conservation Service
- Farm Service Agency
- Texas Department of Agriculture
- Texas State Soil and Water Conservation Board

### Sponsored Lunch

Dr. Enrique Perez 956-361-8236	Brad Cowan 956-383-1026	Matthew Rodriguez 956-689-2412	Victor Gutierrez 956-968-5581	Cris Perez 956-399-1311 ext. 2	Oz Longoria 956-399-1311 ext. 3
	Ronnie Ramirez 956-421-5841	Ronnie Zamora 956-689-2412	Vidal Saenz 956-383-1026		





**Rio Farms, Inc.  
Sugarcane Seminar/Field Day 2017**

In Cooperation with

Rio Grande Valley Sugar Growers Inc., USDA-ARS, LSU AgCenter, University of Florida, Florida Sugar Cane League, American Sugar Cane League, Texas A&M AgriLife Extension Service and UTRGV

**Date: Thursday April 27, 2017**

**Time: 9:00 A.M.**

**Place: Rio Farms, Inc. Monte Alto**

Program Chairman	Andy Scott, Director of Research, RFI
Welcome	Matt Klostermann, General Manager, RFI
Status of the Texas Sugarcane Variety Improvement Program USDA-ARS Canal Point Perspective	Dr. Duli Zhao, Research Agronomist Dr. Jack Comstock, Research Leader (Retired) USDA-ARS Canal Point
Status of the Texas Sugarcane Variety Improvement Program USDA-ARS Houma Perspective	Dr. Mike Grisham, Research Leader USDA-ARS Houma
Breeding Sugarcane for Improved Stubbling Ability	Dr. Kenneth Gravois, Sugarcane Specialist LSU Ag Center
Distribution of Newly Developed Varieties to the Louisiana Sugarcane Industry	Edwis Dufrene, Agronomist USDA-ARS, Houma Atticus Finger, Agronomist Herman Waguespack, Senior Agronomist, American Sugar Cane League





Distribution of Newly Developed Varieties to the Florida Sugarcane Industry

Wayne Davidson, Agronomist  
Florida Sugarcane League

Tour of Research Fields Highlighting New Varieties

Juan Garza, Research Farm Manager, RFI  
Eddie Hernandez, Research Associate, RFI

Evaluation of New Herbicide Technologies for Sugarcane In Texas

Dr. Al Orgeron, Area Pest Management Specialist, LSU-Ag Center  
Dr. Doug Spaunhorst, Research Agronomist  
USDA-ARS Houma

The Application of NIR Technology for use in Sugar mills

Dr. Anna Hale, USDA-ARS Houma  
Research Geneticist

LUNCH

FRIED CATFISH and SHRIMP

FSA Financial and Technical Assistance Opportunities

Carlos Lago-Silva, Director of Rural Programs, UTRGV

RGVSG, Inc. Report

Sean Brashear, President  
Rio Grande Valley Sugar Growers, Inc.

TDA CEU's Units

Brad Cowan, Hidalgo County Agent  
Texas A&M AgriLife Extension Service





**¡APUNTE ESTA FECHA!**

# Conferencia de Granjeros y Rancheros Hispanos de Texas: Creciendo Juntos

**14 y 15 de Septiembre, 2017**

Hotel Casa de Palmas • McAllen, Texas • Estacionamiento Gratis

**[texashispanic.ncat.org](http://texashispanic.ncat.org)**

## Tres pistas:

**Ganadería:** salud de suelos, manejo de pastos, capacidad de carga

**Agricultura:** agronomía, producción de frutas y verduras, forrajes

**Mercadeo directo:** mercados de agricultores, agricultura comunitaria,  
ventas a restaurantes

**Registración: \$25 por persona, \$40 por pareja, incluye una comida y bocadillos**

- Visitas a ranchos y fincas el segundo día
- Becas disponibles

Para más información mandar correo electrónico a Robert Maggiani, [robertm@ncat.org](mailto:robertm@ncat.org) o llamarle a 1-866-319-1669 (gratis)





**SAVE THE DATE!**

# Texas Hispanic Farmer and Rancher Conference: Growing Together, *Creciendo Juntos*

**Sept. 14<sup>th</sup> and 15<sup>th</sup>, 2017**

Casa de Palmas Hotel • McAllen, Texas • Free Parking

**[texashispanic.ncat.org](http://texashispanic.ncat.org)**

### Three tracks:

**Ranching:** soil health, pasture management, carrying capacity

**Farming:** row crops, specialty crops, forages

**Urban Agriculture:** farmer's markets, CSA's, restaurant sales

**Registration: \$25 per person, \$40 per couple, includes lunch and snacks**

- Farm and ranch visits on Day 2
- Scholarships available

For more information email Robert Maggiani at [robertm@ncat.org](mailto:robertm@ncat.org), or call 1-866-319-1669.



 NATIONAL CENTER  
FOR APPROPRIATE  
TECHNOLOGY

 SOUTHERN  
SARE  
Sustainable Agriculture  
Research & Education

 USDA  
USDA is an equal opportunity  
provider, employer and lender.

# Farmers, Ranchers and Landowners Workshop

USDA Natural Resources Conservation Service-Texas  
Minority Landowner Magazine

**June 8, 2018**      &      **June 9, 2018**

**Bentsen- Rio Grande  
Valley State Park  
2800 S. Bentsen Palm Dr  
Mission, TX 78572**

**Sunshine's Bounty Farm  
536 Ricardo Ave.  
Palmview, TX 78574**

**Registration is free and begins both days at 8:30AM  
Program ends at 3PM June 8<sup>th</sup> and 5PM June 9<sup>th</sup>**

RSVP to Jessica Benavides-Paredes by June 7<sup>th</sup> at (361) 308-0541

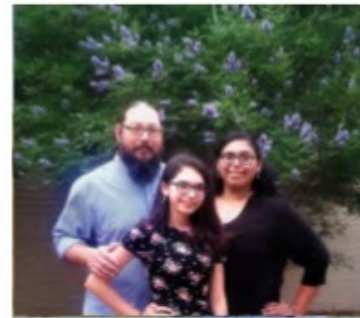
U.S. Department of Agriculture representatives will share information to help improve your farm, whether large or small. USDA-NRCS experts will be available both days for cost-share and financial assistance programs; conservation programs and conservation planning, farm loan programs; pollinators; soil health; agricultural marketing; cattle and hay operations; high tunnels (hoop houses); erosion control; irrigation systems; veterans programs and more.

On Saturday, June 9<sup>th</sup> farmers can participate in the construction of a seasonal high tunnel built from the ground up. See upper right photo.



**MINORITY LANDOWNER  
MAGAZINE**

This workshop is the result of an outreach agreement between Minority Landowner Magazine and TX USDA-NRCS. USDA is an equal opportunity employer and provider.



# **RGV FORAGE FIELD DAY**

## **ENCINO FARMS HEADQUARTERS**

**8:30 AM – NOON**

- ❖ **WELCOME AND INTRODUCTIONS**
- ❖ **PEST MANAGEMENT/INVASIVE SPECIES – BENNY MARTINEZ, DOW AGROSCIENCE**
- ❖ **PERSCRIBED GRAZING AND STOCKING RATES – HENRY GONZALEZ, USDA-NRCS**
- ❖ **FORAGE SAMPLING – ROLANDO ZAMORA, EXTENSION AGENT**
- ❖ **BREAK**
- ❖ **FORAGE FRAUD - JOE AGILAR SPECIAL RANGER DISTRICT 29**
- ❖ **COST OF PRODUCTION/PRF INSURANCE DR. SAMUEL ZAPATA, AGRILIFE**
- ❖ **OPERATIONS/FIELD DEMONSTRATION MARK SWANBERG, ENCINO FARMS**
- ❖ **FINANCIAL PROGRAMS**
  - **NRCS**
  - **FSA**
  - **TSSWCB**
- ❖ **DISCUSSION**
- ❖ **LUNCH**

# Beef Cattle & Rangeland Program

July 13, 2018  
Willacy County Fair Grounds  
Raymondville, Texas

*10520 Business 77, Raymondville, TX*

- 8:00 a.m. Registration  
(Refreshments)
- 8:30 a.m. Welcome  
Matt Rodriguez CEA-AgNR, Willacy County
- 8:35 a.m. **Brush Control Management**  
Dr. Megan Clayton, Associate Professor & Extension Range Specialist,  
Texas A&M Agrilife Extension Service
- 9:35 a.m. **Cow-Calf Operation Management**  
Dr. Joe Paschal, Professor & Extension Livestock Specialist,  
Texas A&M Agrilife Extension Service
- 10:35 a.m. Break
- 10:50 a.m. **NRCS Technical Assistance & Farm Bill Update**  
Enrique Gonzalez, District Conservationist,  
NRCS Willacy County
- 11:20 p.m. **Fever Tick Education & Update**  
Dr. Chelsea Pike, DVM Region 8 Field Vet,  
Texas Animal Health Commission
- 12:30 p.m. Lunch

TEXAS A&M  
**AGRILIFE**  
EXTENSION



PRAIRIE VIEW  
A&M UNIVERSITY  
COLLEGE OF AGRICULTURE  
AND HUMAN SCIENCES

Cooperative Extension Program



**FREE**



## **BEEF CATTLE PRODUCTION SEMINAR**

### **SPEAKERS**

Dr. Samuel Zapata, Extension Economist,  
Texas A&M Agrilife Extension Service

Dr. Joe Paschal, Professor & Extension  
Livestock Specialist, Texas Agrilife  
Extension Service

Dr. Flavio Ribeiro, Research Scientist,  
Cooperative Agricultural Research Center

Jose Martinez, GLCI Range Management  
Specialist, USDA-Natural Resources  
Conservation Service



### **REGISTER**

Agrilife Extension Office  
956.383.1026

**JUNE 28TH**

**REGISTRATION 8:30 AM  
9:00 AM TO 2:45 PM  
LUNCH PROVIDED**

**TEXAS A&M AGRILIFE**  
2415 U.S. 83 Business,  
Weslaco, TX 78596  
(Corner of International 1015 & Buss. 83)

### **TOPICS**

- Beef Cattle Market Outlook
- Adding Value Prior to Market
- Feeding Hay During Drought
- Stocking Rates
- Pasture/Range/Pasture Crop Insurance
- Collecting Hay Samples



EDUCATIONAL PROGRAMS OF THE TEXAS A&M AGRILIFE EXTENSION SERVICE ARE OPEN TO ALL PEOPLE WITHOUT REGARD TO RACE, COLOR, SEX, DISABILITY, RELIGION, AGE, OR NATIONAL ORIGIN. THE TEXAS A&M UNIVERSITY SYSTEM, U.S. DEPARTMENT OF AGRICULTURE, AND THE COUNTY COMMISSIONERS COURTS OF TEXAS COOPERATING. INDIVIDUALS WITH A DISABILITY NEEDING AN ACCOMMODATION SHOULD CONTACT 956.383.1026 AT LEAST TWO WEEKS IN ADVANCE TO PROGRAM DATE



**FREE**

**COMMUNITY GARDEN  
FIELD DAY  
&  
FARM TOUR**

**SPEAKERS**

Chris Bueno  
Food Bank Community Garden  
Manager

Jennifer Herrera  
&  
Ashley Gregory  
Agrilife Extension  
Horticulturalists

**FEBRUARY 20TH**

**9:00 AM TO 12:00 PM**

**FOOD BANK RGV**

724 N Cage Blvd,  
Pharr, TX 78577



Please wear appropriate  
clothing for outdoor  
work.

**REGISTER**

Agrilife Extension Office  
956.383.1026



**PRAIRIE VIEW  
A&M UNIVERSITY**  
COLLEGE OF AGRICULTURE  
AND HUMAN SCIENCES



**TEXAS A&M  
AGRILIFE  
EXTENSION**



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**FREE**



# GOAT PRODUCTION & MARKETING WORKSHOP

## SPEAKERS

Mr. William (Bill) Thompson  
Assistant Professor & Extension Specialist  
Texas A&M Agrilife Extension Service,  
Economist, San Angelo, TX,

Dr. Jack Valerius,  
Veterinary Medicine Mercedes, TX

Dr. Alphina Ho Watson  
Research Veterinarian  
PVAMU International Goat Research Center

Mr. Scott Horner  
Sr. Research Associate  
PVAMU International Goat Research Center

**You can bring goat or sheep fecal sample to analyze!**  
Collect as much poop as you can (need 2-4 grams) directly from the goat or sheep (disposable (exam type) gloved finger with lube on it) or pick it up from the ground right after they pass it - try to get cleanest pellets/part. Put in a zippered plastic bag with as much air out as possible with the animal ID written on it. Store at refrigerator temp (can use ice packs/cooler but don't put samples directly on ice/ice packs). Can store for a day or two before counting, but the fresher the better. Do not freeze!



**MAY 10TH**

**REGISTRATION 8:30 AM  
9:00 AM TO 2:00 PM  
LUNCH PROVIDED**

**TEXAS A&M AGRILIFE  
2415 U.S. 83 Business,  
Weslaco, TX 78596**

## TOPICS

- Parasite control and practices for goats
- Nutrition requirements for raising breeding goats
- Meat goat market in Texas
- Research at International Goat Research Center

## REGISTER

Agrilife Extension Office

956.383.1026



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\$15



## SMALL ACREAGE HORTICULTURE CONFERENCE

### SPEAKERS

Dr. Samuel Zapata, Extension Economist, Texas A&M Agrilife Extension Service

Dr. Juan Anciso, Extension Vegetable Specialist, Texas Agrilife Extension Service

Dr. Joseph Masabni, Extension Small-Acreage Vegetable Specialist, Texas A&M AgriLife

Dr. Thiago Marconi, Research Associate, Texas A&M AgriLife Reseach

Elizabeth Brown, Extension Integrated Pest Management Specialist, Texas A&M AgriLife

Gloria Carter & Stephanie Bowman, Family Community Health Agents Prairie View A&M



PRAIRIE VIEW A&M UNIVERSITY  
COLLEGE OF AGRICULTURE AND HUMAN SCIENCES

TEXAS A&M AGRILIFE EXTENSION



AUG 23RD

REGISTRATION 8:30 AM  
9:00 AM TO 2:45 PM  
LUNCH INCLUDED

TEXAS A&M AGRILIFE

2415 U.S. 83 Business,  
Weslaco, TX 78596

(Corner of International 1015 & Buss. 83)

### TOPICS

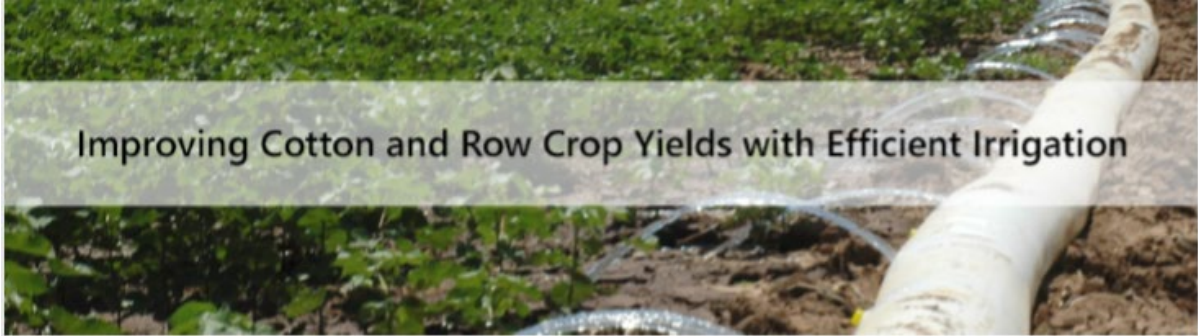
- Grafted Tomato Research
- Vegetable Market Outlook
- Pest Management
- Food Safety for Direct Sales
- Marketing by Taste- Food Demo
- Vegetable Initiative Research

PRE-REGISTER  
Agrilife Extension Office  
956.383.1026

Seating is Limited!  
Registered Early!

EDUCATIONAL PROGRAMS OF THE TEXAS A&M AGRILIFE EXTENSION SERVICE ARE OPEN TO ALL PEOPLE WITHOUT REGARD TO RACE, COLOR, SEX, DISABILITY, RELIGION, AGE, OR NATIONAL ORIGIN. THE TEXAS A&M UNIVERSITY SYSTEM, U.S. DEPARTMENT OF AGRICULTURE, AND THE COUNTY COMMISSIONERS COURTS OF TEXAS COOPERATING. INDIVIDUALS WITH A DISABILITY NEEDING AN ACCOMMODATION SHOULD CONTACT 956.383.1026 AT LEAST TWO WEEKS IN ADVANCE TO PROGRAM DATE





# Improving Cotton and Row Crop Yields with Efficient Irrigation

**Where:** Texas A&M Kingsville Citrus Center  
312 N. International Blvd. Weslaco, TX 78599

**When:** Tuesday, October 16, 2018      7:30 am – 12:00 pm

This free educational program will focus on the practical aspects of producing more cotton and other row crops with less water to improve the bottom line of producers. Furrow irrigation is the most common practice used in row crops and this program will focus on maximizing its efficiency to use less water while maintaining or improving yields. Dr. Jason Krutz, from Mississippi will talk at length about his experience working with producers to improve furrow irrigation efficiency in the Mississippi Delta region and how those efforts can translate to the LRGV. He will also interact with a moderated panel of local producers to discuss and answer questions regarding their experiences and practical aspects of enhanced furrow irrigation management.

**Please register by October 10<sup>th</sup> at: <http://twri.tamu.edu/irrigation>**

- 7:30** Registration and coffee
- 8:00** Welcome and program overview  
Lucas Gregory, Senior Research Scientist, Texas Water Resources Institute
- 8:15** Producer experience with improving furrow irrigation in the southeast: will these approaches work in Rio Grande Valley?  
Jason Krutz, Director, Mississippi Water Resources Research Institute
- 9:00** Cotton producer panel on potential solutions to improve furrow irrigation  
Moderator: Ray Prewett, Ag Issues Consultant
- 10:15** Break
- 10:30** Improving Crop Yields and Economics through Irrigation Management  
Mac Young, Extension Program Specialist, Texas A&M AgriLife Extension
- 11:00** Agency Program Updates  
NRCS EQIP and other Programs:      Sonny Vela  
TSSWCB WQMP Program:                Ronnie Ramirez
- 11:30** Rio Grande Study Update  
Askar Karimov, Research Associate, Texas A&M AgriLife Extension Service
- 11:40** Producers questionnaire and program evaluation
- 11:50** Closing comments – Lucas Gregory, Texas Water Resources Institute

# SMALL ACREAGE HORTICULTURE CONFERENCE

## Agenda

- 9:00-9:05**     **Welcome**
- 9:05-9:45**     **Vegetable Market Outlook**  
*Dr. Samuel Zapata, Extension Economist,  
Texas A&M Agrilife Extension Service*
- 9:45-10:45**   **Grafted Tomato Trial**  
*Dr. Joseph Masabni, Extension Small-  
Acreage Vegetable Specialist, Texas  
A&M AgriLife*
- 10:45-11:00**   **Break**
- 11:00- 11:30**   **Marketing by Taste- Fresh Food  
Demonstration**  
*Gloria Carter & Stephanie Bowman,  
Family Community Health Agents Prairie  
View A&M*
- 11:30-12:00**   **Vegetable Initiative Research**  
*Dr. Thiago Marconi, Research Associate,  
Texas A&M AgriLife Research*
- 12:00- 1:00**     **Lunch**
- 1:00-1:45**     **On the Farm Pest Management**  
*Elizabeth Brown, Extension Integrated  
Pest Management Specialist, Texas A&M  
AgriLife*
- 1:45-2:45**     **Food Safety for Direct Sales**  
*Dr. Juan Anciso, Extension Vegetable  
Specialist,  
Texas Agrilife Extension Service*



Texas International Produce Association  
901 Business Park Dr. Suite 500, Mission TX

March 6, 2018 | 8:00 am – 12:00 pm

This free producer program will focus on the practical aspects of implementing water conserving irrigation technologies in vegetable production. Producers currently using these practices will provide local perspectives and industry representatives will discuss technology advancements, water conservation impacts and economic returns for discussed technology. Pest management implications of practice implementation will be covered and allow 1 hour of TDA CEUs to be provided. Technical and financial assistance opportunities and resources available to producers will be discussed. Please register by March 1 at: [twri.tamu.edu/irrigation](http://twri.tamu.edu/irrigation)

- 7:30 am Registration and coffee – Texas International Produce Association
- 8:00 am Welcome – *Dante Galeazzi*, President and CEO, Texas International Produce Association
- 8:05 am Workshop Overview – *Lucas Gregory*, Research Scientist, Texas Water Resources Institute
- 8:15 am Grower Experiences and Perspectives on Drip Irrigation in Vegetables:
  - Moderator: *Ray Prewett*
  - Grower Representatives: *Mike Helle*, Helle Farms & *Fred Schuster*, Schuster Farms
- 9:00 am New Irrigation Technologies for Produce:
  - Moderator: *Lucas Gregory*
  - Industry Representatives: *Danny Sosebee*, Netafim & *Steven Vandever*, Sostena
  - AgriLife Representatives: *Thiago Marconi*, AgriLife Research – UAS in Vegetable Production & *Catherine Simpson*, Texas A&M Kingsville Citrus Center – Advances in Valley Vegetable Production and Irrigation
- 10:00 am Agency Resources and Cost share programs
  - EQIP and Other NRCS programs – *Oz Longoria*, NRCS – San Benito
  - 319 and 503 program – *Ronnie Ramirez*, TSSWCB – Harlingen
  - Regional Conservation Partnership Program – *Victor Gutierrez*, Texas Water Resources Institute – Weslaco
  - TWDB Water Conservation Programs – *Kathleen Jackson*, TWDB Director
- 10:45 am Vegetable Production IPM – *Juan Anciso*, AgriLife Extension
- 11:45 am Discussion and Next Steps in the Industry – *Dante Galeazzi*
- 12:00 pm Adjourn



**Minority Landowner Magazine Farmers and Landowners Conference**  
Pearl South Padre – South Padre Island, Texas

**Tuesday, April 30, 2019**

*Conference registration opens at 3:00 PM*

**6:00 PM – 9:00 PM**

Welcome Reception – Patio

*Welcome by USDA Natural Resources Conservation Service – Texas*

**Wednesday, May 1, 2019**

**6:30 – 8:00 AM**

Breakfast – Sand Dunes Ballroom

**8:00 – 9:30 AM**

Opening Session

Sand Dunes Ballroom

Welcome

Victor L. Harris

*Publisher and Editor, Minority Landowner*

*Mayor Dennis Stahl, South Padre Island, Texas*

*USDA Natural Resources Conservation Service – Texas*

*Farm Credit Bank of Texas*

*USDA Farm Service Agency*

Opening Session Keynote Presentation

Dr. Dawn Mellion-Patin

Vice Chancellor for Extension and Outreach

Director, Small Farmer Agricultural Leadership Institute

Southern University Agricultural Research & Extension Center

Baton Rouge, Louisiana

**9:30 – 10:00 AM**

BREAK and EXHIBITS

Sand Dunes Ballroom Pre – Function Area



**10:00 – 11:15 AM**

Breakout Session I

<b>Team</b>	<b>Session</b>	<b>Location</b>
GOLDEN TIGERS	Farm Succession Planning	White Marlin
VAQUEROS	NRCS Programs and Services	Blue Marlin A
PANTHERS	Farm Loans and Financial Services	Blue Marlin B
OCELOTS	AgrAbility and More Extension Services	Sailfish

**11:15 – 11:45 AM**

BREAK and EXHIBITS

Sand Dunes Ballroom Pre – Function Area

**11:45 – 1:15 PM**

Luncheon – Sand Dunes Ballroom

*Hosted by Farm Credit Bank of Texas*

American Forest Foundation's and U.S. Endowment for Forestry and Communities'  
Sustainable Forestry and African American Land Retention Program  
Forest Landowner Panel

**1:15 – 1:30 PM**

*Transition Break*

**1:30 – 2:45 PM**

Breakout Session II

<b>Team</b>	<b>Session Location</b>	<b>Location</b>
GOLDEN TIGERS	AgrAbility and More Extension Services	Sailfish
VAQUEROS	Farm Succession Planning	White Marlin
PANTHERS	NRCS Programs and Services	Blue Marlin A
OCELOTS	Farm Loans and Financial Services	Blue Marlin B

**2:45 – 3:15 PM**

BREAK and EXHIBITS

Sand Dunes Ballroom Pre – Function Area

**3:15 – 4:00 PM**

General Session – Sand Dunes Ballroom

Healthy Farms and Healthy Farmers  
Nourishment of the Land, Animals and People

Kara Kroeger  
Sustainable Agriculture Specialist at National Center for Appropriate Technology  
Austin, Texas

**4:00 – 4:30 PM**  
General Session – Sand Dunes Ballroom

Soil Health and Rainfall Simulator

Nathan Haile  
Conservation Agronomist  
USDA Natural Resources Conservation Service – Texas  
Corpus Christi, Texas

**6:00 – 7:00 PM**  
Hospitality  
Blue Marlin Ballroom

**7:00 – 9:00 PM**  
*Minority Landowner Magazine Farmers and Landowners Banquet*  
Sand Dunes Ballroom  
*Hosted by USDA Natural Resources Conservation Service – Texas*

## Thursday, May 2, 2019

**6:30 – 8:00 AM**  
Breakfast – Sand Dunes Ballroom

**8:00 – 8:15 AM**  
General Session – Sand Dunes Ballroom  
*Process Review and Direction*

**8:15 – 8:30 AM**  
*Transition Break*

**8:30 – 9:45 AM**  
Breakout Session III

<b>Team</b>	<b>Session</b>	<b>Location</b>
GOLDEN TIGERS	Farm Loans and Financial Services	Blue Marlin B
VAQUEROS	AgrAbility and More Extension Services	Sailfish
PANTHERS	Farm Succession Planning	White Marlin
OCELOTS	NRCS Programs and Services	Blue Marlin A

**9:45 – 10:15 AM**  
BREAK and EXHIBITS  
Sand Dunes Ballroom Pre – Function Area

4/14/2019

**10:15 – 11:30 AM**  
Breakout Session IV

<b>Team</b>	<b>Session</b>	<b>Location</b>
GOLDEN TIGERS	NRCS Programs and Services	Blue Marlin A
VAQUEROS	Farm Loans and Financial Services	Blue Marlin B
PANTHERS	AgrAbility and More Extension Services	Sailfish
OCELOTS	Farm Succession Planning	White Marlin

**11:30 – 11:45 AM**  
*Transition Break*

**11:45 – 1:00 PM**  
Luncheon – Sand Dunes Ballroom

**1:00 – 5:00 PM**  
Conference Agricultural Tours

**Melissa Delgado – Los Fresnos, Texas**  
**Bonita Flats Farm and Vineyard**

Ms. Delgado is a beginning farmer who learned about NRCS through the Hispanic Farmer and Rancher Conference and has begun working with NRCS on her 16 acres by developing a conservation plan. She has 18 rows of two-year-old grapevines blanc du bois and two homemade seasonal high tunnels along with a small garden. She has “adopted” other Cameron county small farmers who do not have land but have knowledge.

**Mike Ortiz – Los Fresnos, Texas**  
**Organic and Conventionally Grown Crops**

Visit an organic certified and specialty crop farm. The farm supplies both organic and conventionally grown products to markets across the state. Cabbage, kale, broccoli, beets, lettuce, collards, cilantro and cucumbers are some of the vegetables grown on the farm and supply to supermarkets across the Rio Grande Valley and the state. The farm works extensively with NRCS to improve irrigation efficiencies and land leveling.

**6:00 PM**  
Conference Closing Reception  
South Padre Island

4/14/2019



**Chicken/ Egg Program**  
March 1, 2019  
RGV Food Bank



9:00 am - 9:05 am	Welcome
9:05 am - 9:50 am	Dr. Craig Coufal, AgriLife Extension poultry specialist
9:50 am - 10:00 am	Break
10:00 am - 10:45am	Dr. Craig Coufal, AgriLife Extension poultry specialist
10:45am - 11:00 am	Q&A Discussion
11:00am - 11:20 am	Food Demo Gloria Carter, Family Community Health, CEP Agent
11:20am - 11:50 am	Deanna Gutierrez, NRCS Soil Conservationist
11:50 am -12:00 pm	Q&A Discussion
12:00 pm - 1:00 pm	(Optional farm tour)





**FREE**



# CHICKENS: BASIC CARE & EGG PRODUCTION

**SPEAKER:**  
 Dr. Craig Coufal, Agrilife  
 Extension Poultry Specialist

**MARCH 1ST, 2019 | 9 AM TO 12 PM |  
 FOOD BANK RGV 724 N CAGE BLVD.  
 PHARR, TX 78577**

**TOPICS INCLUDE:**  
 Required Equipment  
 Food- What's good &  
 What's not, Best Breeds  
 Management & Care

Register:  
 956-361-8236  
<http://bit.ly/UpcomingHorticulture>



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## Appendix C: Fact Sheets and program evaluations Developed Throughout the Project

### Proper Handling of Pesticide Containers

**Victor Gutierrez**

Extension Assistant, Texas Water Resources Institute

**Kevin Wagner**

Deputy Director, Texas Water Resources Institute

The Texas A&M University System

To keep workers safe, protect drinking water, and preserve environmental health, agricultural producers must clean and dispose of used chemical containers properly.

If you do not handle the containers correctly, the chemicals left in the container (*residue*) can leach into the soil and contaminate shallow water wells. It can also leak into canals or drainage ditches and flow into nearby creeks and rivers, polluting downstream fisheries.

The first place to check for disposal instructions is the pesticide label. Because these labels are legal documents under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), you must always follow their directions.



Proper handling of pesticide containers can help protect people and the environment.

Below are tips and links to websites that provide proper instructions on rinsing, recycling, or disposing of chemical containers that will help protect your local water quality.

#### Rinsing chemical containers

There are two ways to clean a chemical container legally. For both methods, the first step is to allow the pesticide to drip-drain from the container for at least 30 seconds. Then:

1. Triple-rinse the container immediately after emptying it. Put on the protective equipment required by the label.
  - a. Fill the container  $\frac{1}{4}$  full with the diluting agent (*diluent*) listed on the safety data sheet (formerly material safety data sheet, or MSDS).
  - b. Replace the lid or plug the opening of the container.
  - c. Rotate the container, making sure that you rinse all surfaces.
  - d. Turn the container upside down.
  - e. Add the liquid rinsed from the container (*rinsate*) to the spray tank, allowing 30 seconds for the rinsate to drain.
  - f. Repeat procedure two more times.
2. Pressure-rinse the container:
  - a. Hold the container so that its opening can allow the rinsate to drain into the spray tank.

- b. Force the pressure nozzle (available online at [Gemplers.com](http://Gemplers.com) or [Tankjet.com](http://Tankjet.com)) through the lower part of container.
- c. Turn the nozzle inside the container to make sure that all sides are rinsed for at least 30 seconds.
- d. Allow the rinsate to drain into the spray tank.
- After rinsing the container properly, puncture its top and bottom to prevent reuse, and crush it flat.
- Store the container in a dry area out of the rain until you can recycle or dispose of it properly.
- **Do not wash containers that can produce hydrogen cyanide gas or have held aluminum, magnesium, or zinc phosphides.** Instead, fill them with dry soil or sand and dispose of them through a licensed waste disposal contractor.
- For more information:
  - *Proper Rinsing*, USAg Recycling—<http://www.usagrecycling.com/proper-rinsing.html>
  - *Container Cleaning*, Crop Protection Association—<http://www.nufarm.com/Assets/14142/1/Containercleaning1-4-10.pdf>
  - *50 Ways Farmers Can Protect Their Groundwater: Rinse Chemical Containers Thoroughly*—[http://www.thisland.illinois.edu/50ways/50ways\\_30.html](http://www.thisland.illinois.edu/50ways/50ways_30.html)

## Disposing of containers

- Cross out but do not remove or destroy the original product label on the container. Employees at the landfill or recycling center may need to see what the container held.
- Offer the container for recycling or dispose of it in a licensed sanitary landfill. Pesticide containers may be recycled only through approved recycling programs such as USAg Recycling, not household programs.
- Collection sites accept only dry, properly rinsed containers.
- For more information:
  - *Container Preparation*, USAg Recycling—<http://www.usagrecycling.com/preparation.html>
  - *How to Dispose of Empty Hazardous Materials Containers*, University of California–San Diego—<http://blink.ucsd.edu/safety/research-lab/hazardous-waste/empty-containers.html#2.-Confirm-the-container-is-rea>

## Acknowledgments

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The information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Texas A&M Agrilife Extension Service is implied.

### Texas A&M Agrilife Extension Service

[AgrilifeExtension.tamu.edu](http://AgrilifeExtension.tamu.edu)

More Extension publications can be found at [AgrilifeBookstore.org](http://AgrilifeBookstore.org)

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The Texas A&M University System, U.S. Department of Agriculture, and the County Commissioners Courts of Texas Cooperating.

New





### What is Narrow Border Flood Irrigation?

Narrow Border Flood (NBF) Irrigation is an alternative flood irrigation practice that saves water in citrus orchard groves. It is a simple on-farm management option that can be implemented immediately with minimal modifications to current cultural practices and accommodates the irrigation systems typically used throughout the Lower Rio Grande Valley of South Texas. Dr. Shad D. Nelson, Texas A&M University-Kingsville, has demonstrated that using NBF Irrigation saves up to 35% of water supplies. It also leads to higher net-cash farm income to citrus growers who implement and use this practice.

### What are the benefits?

- Increased percentage of fruit going to fresh market rather than juice market, which leads to more net farm income to grower
- Less weed competition
- Keeps fertilizers within root zone when compared to conventional flood irrigation



### What needs to be done to apply this practice?

- Raise a berm about 3 feet wide and 1 foot high between tree rows.
- Irrigate using poly pipe or gated pipe to direct water between rows.

### What does it take to apply this practice?

- Bed shaper or disks to form a raised bed placed behind a tractor
- A little extra time
- Extra fuel cost for the bed
- Good to knock the bed down prior to harvest or at time of hedging trees

Be a part of conserving this precious natural resource by adopting a BMP and lessen the impacts of agriculture on water quality.

### Agriculture in the Arroyo Colorado

The Arroyo Colorado watershed is a 706 square mile watershed that runs from McAllen to the Lower Laguna Madre and is impaired for low dissolved oxygen, bacteria and legacy pollutants. In an effort to correct it, a watershed protection plan (WPP) was developed by stakeholders (released in 2007) and is being implemented throughout the watershed. If you have questions, you may also contact the Texas AgriLife Extension Service agent for your county.

Agricultural production comprises of almost half the land within the Arroyo Colorado watershed and of that 50 percent approximately half needs to implement best management practices (BMPs) by the year 2015. Runoff from these agricultural lands, carry nutrients and sediments which cause the above impairments in the Arroyo Colorado and inhibit aquatic life.

### Contacts

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KLAG 117  
MSC 228 Texas A&M University-Kingsville  
Kingsville, Texas 78363-8202  
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Fax: 361.593.3788  
Email: shad.nelson@tamuk.edu

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Edinburg Service Center  
2514 S Veterans Blvd  
Edinburg TX  
956.361.0916

San Benito Service Center  
2315 W Frontage Hwy 83  
San Benito TX  
956.399.2522



Texas Water Resources Institute  
1500 Research Parkway, Suite 240  
2118 TAMU  
College Station, TX 77842-2118  
979.845.1851 (T)  
twri.tamu.edu





## Program Evaluation Form

### Irrigation Training Workshop

- 1) List the top three crops you grow \_\_\_\_\_ average # of acres \_\_\_\_\_  
 \_\_\_\_\_ average # of acres \_\_\_\_\_  
 \_\_\_\_\_ average # of acres \_\_\_\_\_
  
- 2) If you are a landowner/manager/operator, how many irrigated acres do you manage in total? \_\_\_\_\_
  
- 3) What type of irrigation method do you currently use?  
 a. Flood b. Drip c. Micro-sprinkler d. Center pivot e. Other \_\_\_\_\_
  
- 4) How do you determine when you need to irrigate (ex: observe crop stress, moisture sensor, etc.)? \_\_\_\_\_
  
- 5) Do you anticipate benefiting economically as a direct result of what you learned from this program?  
 a. Yes b. No If Yes, briefly describe the type of benefits you expect i.e. savings in cost of water, increased yields, better quality, etc. \_\_\_\_\_
  
- 6) As a result of this program, do you anticipate adopting or recommending changing to a different irrigation method/technology?  
 a. Yes b. No If yes, the change would be from (e.g. flood to drip) \_\_\_\_\_ to \_\_\_\_\_
  
- 7) Improving irrigation practice knowledge and skills can be just as important as the method or technology used. Do you anticipate being able to save water by applying the knowledge and skills you learned at the workshop?  
 a. Yes b. No If yes, how do you plan to change one or more of your irrigation practices. \_\_\_\_\_

8) Please indicate your situation with regard to the following irrigation technologies (please mark appropriate box):

Potential Technology to Adopt	Already Adopted	Plan to Adopt	Will Not Adopt	Undecided	Not Applicable
Micro Sprinkler					
Drip					
Narrow Border Flood					
Plastic Mulch or Sheeting					
Raised Beds					
Other (specify)					

9) Please provide any additional comments you have about the training program below:

## **Appendix D: Project Press Releases and Direct Mailings**

### **Valley agricultural producers, landowners eligible for assistance to improve on-farm efficiency**

Contact: Kevin Wagner, 979-845-2649, [klwagner@ag.tamu.edu](mailto:klwagner@ag.tamu.edu)

Agricultural producers and landowners in Willacy, Cameron and Hidalgo counties may be eligible for financial assistance to improve their irrigation systems and implement other conservation practices through a new U.S. Department of Agriculture Natural Resources Conservation Service program.

The Lower Rio Grande Valley Water Improvement Initiative, a five-year, \$3 million partnership effort led by the Texas Water Resources Institute, is funded through the Regional Conservation Partnership Program, authorized by the 2014 Farm Bill.

“Ag producers and landowners in the Valley can apply at any time for these funds, but to be eligible for this year’s allocations, they are encouraged to apply by Sept. 15,” said Dr. Kevin Wagner, associate director of the Texas Water Resources Institute. “They should contact their local NRCS or Soil and Water Conservation District offices to find out how to apply, what best management practices are eligible and for more information.”

Wagner said additional funds will be available each of the next five years for Valley agricultural producers and landowners to install and maintain conservation practices that improve on-farm efficiency.

“The Lower Rio Grande Valley is experiencing significant population growth, which puts greater pressure on the limited water supplies and increases the need for improved irrigation efficiency,” he said. “Along with the limited supplies, degraded water quality necessitates improved conservation as well. Although addressing water quantity is the primary concern, the importance of water quality and quantity are inseparable and intricately linked in the Valley.”

According to Natural Resources Conservation Service, the initiative encompasses 1.59 million acres in Cameron, Hidalgo and Willacy counties and includes the lower Rio Grande, Arroyo Colorado and north Floodway.

Wagner said examples of conservation practices eligible for funding include land leveling; installation of drip, sprinkler, or microspray irrigation systems; soil testing; implementation of surge valves; use of narrow border flood irrigation on citrus, and other practices to conserve soil and water resources.

The Texas A&M AgriLife Extension Service is providing education programs on irrigation management, nutrient management and water resource issues as part of the initiative, Wagner said.

For more information on available funding, producers and landowners in the three counties should call (956) 399-2522 and/or visit their [nearest](#) Natural Resources Conservation Service Field Office located [in Edinburg, San Benito or Raymondville](#).

[For more information on the partnership and its activities, contact Wagner at 979-845-2649, \[klwagner@ag.tamu.edu\]\(mailto:klwagner@ag.tamu.edu\)](#).

The Texas Water Resources Institute is part of Texas A&M AgriLife Research, Texas A&M AgriLife Extension Service and the College of Agriculture and Life Sciences at Texas A&M University.

-30-



August 16, 2016

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Extension Assistant TWRI  
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Weslaco, TX. 78596  
(956) 969-5611

Dear Ag Producer,

The Texas A&M Agrilife Research and Extension Service would like to extend an invitation for your participation in the **Soil Health and Irrigation Conservation Workshop** to be held on August 24, 2016 at the Texas A&M Agrilife Research and Extension Center located at: 2401 East Business Highway 83, Weslaco, TX. 78596. Registration will start at 8:00 a.m. with breakfast provided.

The objective of this educational event is to present research-based information to agricultural producers on the technology of soil and water management, funding opportunities and financial technical support for farming operations. USDA personnel will be on hand to provide outreach on their programs. Included on the reverse side of this letter is an agenda.

If you have any questions regarding the program, please feel free to contact your local County Extension Office.





Rio Grande Soil Testing Campaign - Oct. 1, 2015-Feb. 29, 2016

## Free Soil Testing and Shipping

### Free Soil Testing and Shipping by Texas AgriLife Extension Service

- Pick up forms and sample bags at your local county AgriLife Extension office or the AgriLife District 12 office located in Weslaco.
- Drop off filled sample bags and forms at the same county or district office for shipping.
- Producers in Cameron, Hidalgo and Willacy counties can participate.

#### Cameron County Office

1390 W Expressway 83  
San Benito, TX 78586-7633  
(956) 361-8236, cameron-tx@tamu.edu

#### Hidalgo County Office

410 N 13th Ave  
Edinburg, TX 78541-3582  
(956) 383-1026, hidalgo-tx@tamu.edu

#### Willacy County Office

170 N 3rd Street  
Raymondville, TX 78580-1940  
(956) 689-2412, willacy-tx@tamu.edu

#### District 12 Office

2401 East Highway 83  
Weslaco, TX 78596-8344  
(956) 968-5581, d12south@ag.tamu.edu



Campaign funded by the Texas State Soil and Water Conservation Board and administered by the Texas Water Resources Institute for non-point source pollution reduction in agricultural fertilizer runoff into the Arroyo Colorado Watershed.

For more information, visit these websites:

- [arroyocolorado.org](http://arroyocolorado.org)
- [twri.tamu.edu](http://twri.tamu.edu)
- [irnr.tamu.edu](http://irnr.tamu.edu)
- [www.tsswcb.texas.gov](http://www.tsswcb.texas.gov)



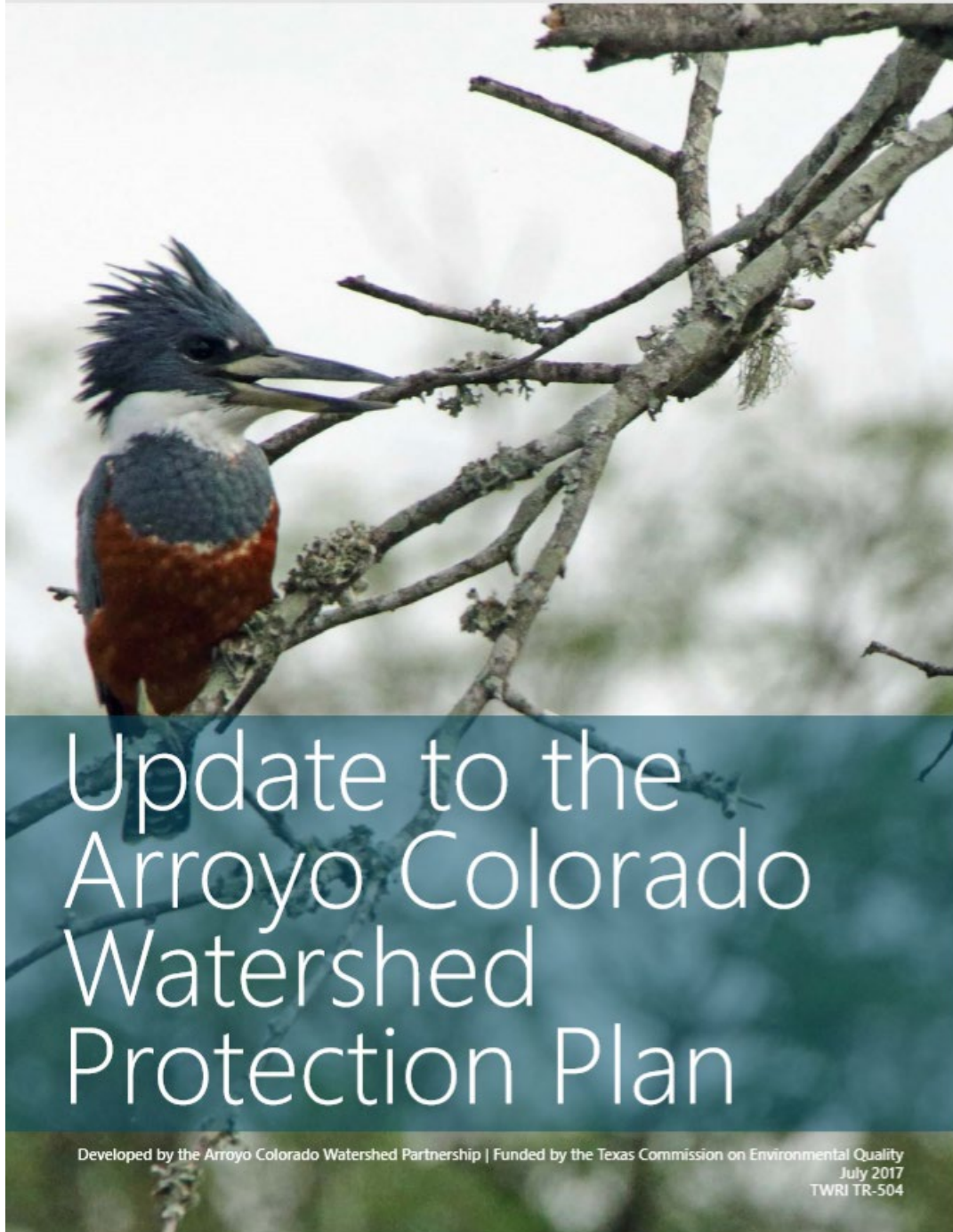
[arroyocolorado.org](http://arroyocolorado.org)

TEXAS A&M  
UNIVERSITY

## Appendix E: Agriculture Non-Point source in the Arroyo Colorado Watershed





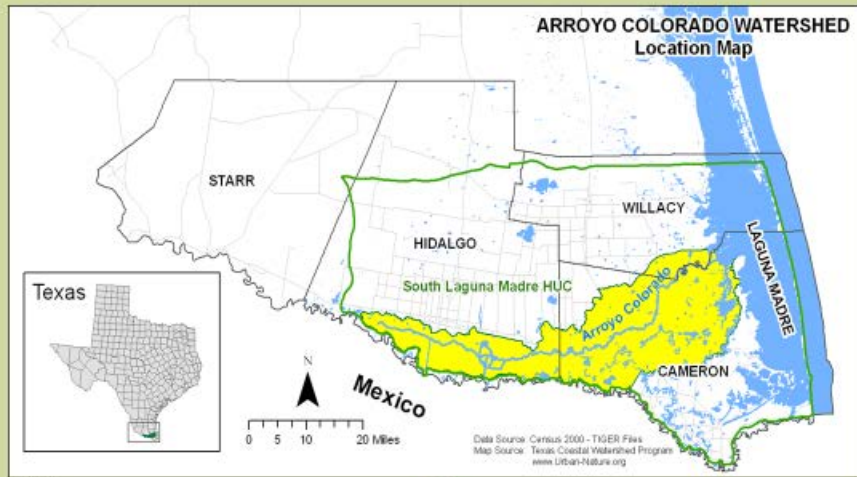


# Update to the Arroyo Colorado Watershed Protection Plan

Developed by the Arroyo Colorado Watershed Partnership | Funded by the Texas Commission on Environmental Quality  
July 2017  
TWRI TR-504



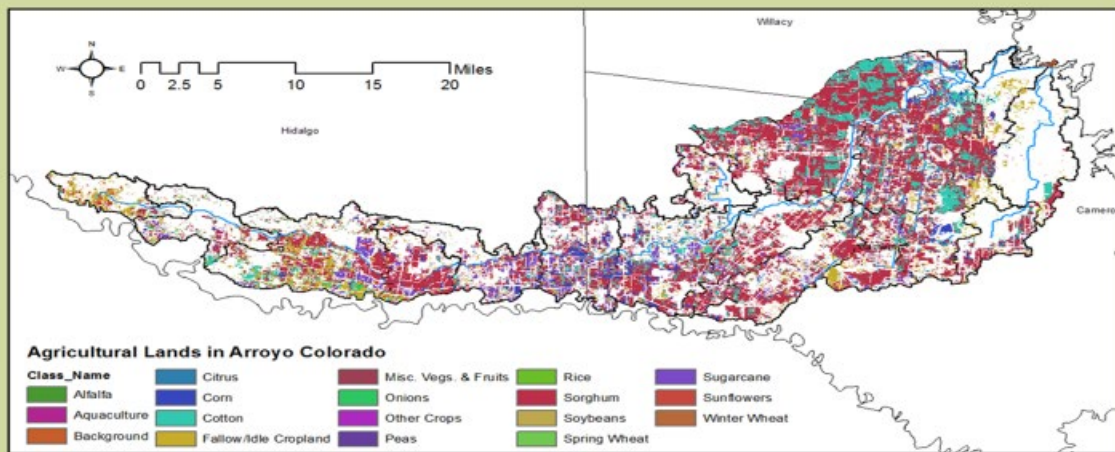
# The Arroyo Colorado Watershed



Website:  
<http://arroyocolorado.org/>



# Arroyo Watershed Ag Production Land Use



## Watershed Mission Goals

- Encourage voluntary BMP adoption on an additional 35,000 acres of cropland (i.e. 75% of cropland under a conservation plan), 10,000 acres of pastureland and 7500 acres of rangeland
- Reduce lawn fertilizer use by homeowners by 10% through E&O
- Protect and restore valuable terrestrial habitat areas throughout the watershed
- Protect and restore riparian areas, resacas and freshwater and coastal wetlands
- Continue to improve the awareness and understanding of the water quality issues associated with the Arroyo Colorado, its connection to the LLM and the value both these natural resources bring to the communities of the LRGV



## Management Measures ( Agriculture )

- Cropland is the predominant land use in the Arroyo Colorado watershed, accounting for approximately 52% of the watershed's total land use.
- To reduce pollutant loading from cropland, state and federal governments have been working with local stakeholders to focus state and federal cost share and educational programs on cropland issues.
- The programs encourage and support the voluntary adoption of resource management systems (RMS), implemented by the USDA Natural Resources Conservation Service (NRCS) and water quality management plans (WQMPs) implemented by the Texas State Soil and Water Conservation Board (TSSWCB) through local landowners.



## Management Measures ( Agriculture ) Cont.

- There are approximately 219,000 acres of cropland in the watershed, making it the dominant land use. Most cropland in the watershed is irrigated and used to grow crops like cotton, grain sorghum, corn, sugarcane, vegetables and citrus. Per the Phase I TMDL study, cropland production contributes significant amounts of biological oxygen demand (BOD), nutrients and sediment to the Arroyo Colorado via:
  - direct surface rainfall runoff from fields via drainage ditches
  - direct surface irrigation return flow from fields via drainage ditches
  - indirect irrigation return flow from fields via shallow groundwater baseflow



## Management Measures ( Agriculture ) Cont.

- The original WPP established a goal of encouraging the voluntary implementation and maintenance of conservation plans on 150,000 acres of irrigated cropland, or approximately 50% of irrigated cropland estimated in the watershed at that time, by 2015. At the end of 2015, 130,000 acres of irrigated cropland were being managed under a WQMP.
- The Partnership recommends continued focus of state and federal cost share and educational programs towards the voluntary adoption of RMS and WQMPs by local landowners.





## BMPs

**Table 8.1. Priority BMPs for Irrigated and Dry Cropland**

BMP	Code Number	BMP	Code Number
Crop Rotation	328	Pipeline*	430
No Till	329	Irrigation Land Leveling*	464
Cover Crops with No Till (329)	340	Precision Land Forming**	462
Reduced Till	345	Cropland Conversion	512/550
Filter Strip	393	Nutrient Management	590

\*Irrigated cropland only

\*\*Dry cropland only



## BMPs

**Table 8.2. Priority BMPs for Irrigated Pasture/Hay Land and Rangeland/Wildlife**

BMP	Code Number	BMP	Code Number
Brush Management*	314	Prescribed Grazing	528A
Cover Crops	340	Range Planting	550
Cross Fencing	382	Nutrient Management**	590
Pipeline**	430	Watering Facility	614
Land Leveling**	464	Wildlife Habitat Management***	645
Forage Planting**	512	Wetlands Enhancement***	657

\*For Irrigated Pasture/Hay Land in conjunction with Forage Planting (512), Nutrient Management (590) and/or Range Planting (550)

\*\*Irrigated Pasture/Hay Land only

\*\*\*Rangeland/Wildlife only

