

Texas Water Resources Institute

Bacteria Runoff BMPs for Intensive Beef Cattle Operations Agreement No. 68-7442-7-482

Quarter no. 9 From 10/1/09 Through 12/31/09

I. Abstract

Year two of water quality data collection was initiated this quarter. Work this quarter focused on collection of samples representing 11 separate runoff events. Prior to this quarter, only 7 runoff events had occurred. Good rains also provided good grazing. The moderately grazed site received 89.81 AUD and the heavily grazed site received 179.62 AUD. An additional grazing treatment and collection of runoff will be conducted next quarter as conditions allow.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: Preparation of progress reports.

The following actions have been completed during this reporting period:

- a. The Year 2, Quarter 4 Progress Report was submitted on October 15, 2009.

76% Complete

Subtask 1.2: Coordination of meetings as appropriate with project participants to discuss project activities, project schedule, lines of responsibility, communication needs, and other requirements.

The following actions have been completed during this reporting period:

- a. On October 2, October 19, and November 12, AgriLife Extension and TWRI met to discuss the project contract, budget, deliverables, activities, and schedule.

76% Complete

Subtask 1.3: Submission of required financial forms every quarter (SF-272 and SF-269).

The following actions have been completed during this reporting period:

- a. As of December 31, 2009, \$36,738 or 49% of federal project funds had been expended.
- b. Progress of Allocations to each Department is as follows:
 - TWRI has expended 60% of their funds
 - SCSC has expended 18% of their funds

49% Complete

Subtask 1.4: Development of the final project report within 90 days of project completion.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

TASK 2: Assess Bacteria Runoff from Intensively Managed Beef Cattle Operations

Subtask 2.1: Install three (3) watershed sites at the Texas A&M University Farm in Brazos County to evaluate un-grazed, moderately stocked, and heavily stocked irrigated pasture conditions.

The following actions have been completed during this reporting period:

- a. Equipment installation has been completed and monitoring initiated on September 15, 2008.

100% Complete

Subtask 2.2: Maintain the three watershed sites and assess bacteria concentrations, runoff volume, and precipitation from each of the three (3) sites for a period of two (2) years.

The following actions have been completed during this reporting period:

- a. Maintenance was conducted on each watershed site on October 27, November 19, and December 2.
- b. A grazing treatment was conducted November 12-17. The moderately grazed site received 89.81 AUD and the heavily grazed site received 179.62 AUD.
- c. During year 1, the average stocking rate for site BB2 was 6.1 acres per animal unit while site BB3 was 2.9 acres per animal unit. Due to the drought conditions and early level of establishment of the Tifton 85, stocking rates were considerably lower than the target levels of 2 acres per animal unit for the moderately grazed site BB2 and 1 acre per animal unit for the heavy grazed BB3.

65% Complete

Subtask 2.3: Evaluate the water quality data collected throughout the project in order to develop timely and up-to-date information for presentation to producers.

The following actions have been completed during this reporting period:

- a. A total of 29 runoff samples were collected this quarter representing 11 separate runoff events. This quarter, *E. coli* levels at the ungrazed site BB1 averaged 71,256 cfu/100 ml, 77,207 cfu/100 ml at the moderately grazed site BB2, and 122,051 cfu/100 ml at the heavy grazed site BB3.

65% Complete

TASK 3: Technical Transfer

Subtask 3.1: Develop and deliver educational materials regarding bacteria runoff and BMPs for reducing it to agricultural producers.

The following actions have been completed during this reporting period:

- a. In September 2007, TWRI developed the website titled “Improving Water Quality of Grazing Lands.” This website displays the efforts of this project and two related projects evaluating BMPs and developing education programs to address bacteria.
 - It can be found at the following web address: <http://grazinglands-wq.tamu.edu/index.php>.
 - The website was viewed by:
 - 14 unique visitors in October 2009
 - 12 unique visitors in November 2009
 - 10 unique visitors in December 2009
 - A grand total of 944 unique visitors since September 2007
 - The website will be updated as new data and information are obtained.
- b. Texas AgriLife Extension Service (Extension) continued work on a PowerPoint presentation and resource manual for dissemination to the public.

76% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

- N/A

IV. Projected Work for Next Quarter

- Prepare and submit Year 3, Quarter 1 Progress Report.
- Submit an invoice for the billing period of 10/1/09-12/31/09.
- Conduct additional grazing treatments when conditions are favorable.
- Continue monitoring runoff.
- Finalize development of educational materials regarding bacteria runoff and BMPs.