

**Texas AgriLife Research  
Texas Water Resources Institute**

**Evaluation of Electrostatic Particle Ionization and BioCurtain Technologies to Reduce Dust, Odor  
and other Pollutants from Broiler Houses  
FY 2010 – Poultry Program  
TSSWCB Project No. 10-90**

Quarter no. 5 From 3/1/2011 Through 5/31/2011.

**I. Abstract**

With the two monitoring campaigns completed, actions for this period mainly focused on finishing and submitting the interim report covering costs and management that a producer is expected to encounter should they choose to install the EPI and Bio Curtain BMPs. This was submitted to TSSWCB on March 4<sup>th</sup>. In the time since, focus has shifted towards analyzing the data for inclusion in a report to ASABE which will eventually be used as the basis for the project's own final technical report.

**II. Overall Progress and Results by Task**

**TASK 1: Project Administration**

Subtask 1.1: *TWRI will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15<sup>th</sup> of March, June, September, and December. QPRs shall be distributed to all project partners.*

The following actions have been completed during this reporting period:

A. TWRI submitted the fifth QPR for this project on May 15, 2011.

**63% Complete**

Subtask 1.2: *TWRI will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly.*

The following actions have been completed during this reporting period:

A. TWRI received no invoices to be paid for the quarter.

B. As of November 15, 2010, a total of \$150,524.51, or about 89% of total project funds have been expended.

**89% Complete**

Subtask 1.3: *TWRI will participate in meetings as appropriate in order to efficiently and*

*effectively achieve project goals, coordinate monitoring efforts and summarize activities and achievements made throughout the course of this project.*

The following actions have been completed during this reporting period:

- A. TWRI, BAEN, Sanderson Farms, and TSSWCB participated in several calls regarding project funding and the future of the project's 2<sup>nd</sup> phase.

**63% Complete**

*Subtask 1.4: TWRI will develop, host and maintain a project website that will be used as a means to disseminate educational materials, project updates and notify readers about educational opportunities.*

The following actions have been completed during this reporting period:

- A. The Poultry Odors BMPs website is currently active. It can be found at <http://poultrybmps.tamu.edu/>. Since the website went online, it has been viewed by a grand total of 46 unique visitors.
- B. This quarter, the website was viewed by:
- 8 unique visitors in March 2011
  - 2 unique visitors in April 2011
  - 5 unique visitors in May 2011

**80% Complete**

*Subtask 1.5: TWRI will work with project personnel from BAEN and SFA to support the preparation of technical reports as required by project Tasks into published technical reports. These reports will be housed in the TWRI online Reports Database indefinitely.*

The following actions have been completed during this reporting period:

- A. TWRI, BAEN, SFASU, and WTAMU prepared and TWRI submitted an interim report detailing the costs and management needs of installing the BMPs to TSSWCB on March 4<sup>th</sup>.
- B. Data collection and statistical analysis for the September 2010 and Dec 2010 campaigns at the Mexia project site have been completed and results are being compiled for the Phase I final report.

**75% Complete**

**TASK 2: Quality Assurance**

*Subtask 2.1: TWRI, with assistance from BAEN and SFA, will develop a QAPP for activities in Tasks 3 and 4 consistent with EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan.*

*All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in method specific, peer reviewed or widely accepted documents or SOPs*

*describing the specific methods used. These documents will be detailed in the project QAPP when developed.*

The following actions have been completed during this reporting period:

A. This task is complete.

**100% Complete**

Subtask 2.2: *TWRI will submit revisions and necessary amendments to the QAPP as needed.*

The following actions have been completed during this reporting period:

A. No activity to report this period.

**0% Complete**

### **TASK 3: Poultry Farm Selection and Equipment Installation**

Subtask 3.1: *BAEN and SFA will coordinate with TSSWCB to identify and select a poultry operation as a cooperator.*

The following actions have been completed during this reporting period:

A. This task is complete.

**100% Complete**

Subtask 3.2: *BAEN and SFA will instrument the control and treatment houses with monitoring equipment. This includes air samplers; temperature, humidity, static pressures sensors; and a Fan Assessment Numeration System. Associated data loggers will also be installed.*

The following actions have been completed during this reporting period:

A. This task is complete.

**100% Complete**

Subtask 3.3: *BAEN and SFA will coordinate with the manufacturer/distributor of the EPI and BioCurtain systems to install both treatment systems in the treatment barn.*

The following actions have been completed during this reporting period:

A. This task is complete.

**100% Complete**

Subtask 3.4: *BAEN will track the costs associated with the procurement of the EPI and BioCutain systems, the delivery, installation as well as any retrofitting that is needed to make the systems operational. This information will be compiled into a brief, yet all inclusive summary of costs that a producer could expect if this dust and odor mitigation system was purchased and*

*installed.*

The following actions have been completed during this reporting period:

- A. TWRI, BAEN, SFASU, and WTAMU prepared and TWRI submitted an interim report detailing the costs and management needs of installing the BMPs to TSSWCB on March 4<sup>th</sup>.

**100% Complete**

#### **TASK 4: BMP and Monitoring Systems Verification**

*Subtask 4.1: BAEN and SFA will test the BioCurtain and EPI systems independently to ensure the proper operation of each system. Testing will occur during two independent one-day trials for each system; one in the summer and one in the winter.*

The following actions have been completed during this reporting period:

- A. This task is complete.

**100% Complete**

*Subtask 4.2: BAEN and SFA will operate and evaluate the EPI and BioCurtain system concurrently to ensure the proper operation of this dual-technology system. Testing of this technology will occur over a three-day period and will be repeated once during the summer and once during the winter.*

The following actions have been completed during this reporting period:

- A. This task is complete.

**100% Complete**

*Subtask 4.3: BAEN and SFA will operate and maintain monitoring equipment in the control barn during all BMP tests to verify that adequate comparisons will be able to be made between treated and un-treated air during a long-term demonstration.*

The following actions have been completed during this reporting period:

- A. This task is complete.

**100% Complete**

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

### **IV. Projected Work for Next Quarter**

- Submit the sixth quarterly progress report

- Participate in project coordination and update meetings
- Submit a report to ASABE on June 22 covering the results of both monitoring campaigns which will be the basis for this project's final report