

**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 10 CWA 319(h)
TSSWCB Project No. 10-90**

Quarter no. 01 From 4/1/2010 Through 6/15/2010.

I. Abstract

Activity for this quarter focused mostly on planning for the project. A cooperating poultry producer was identified to host the technology testing site, with several site visits planned in the upcoming quarters by BAEN, SFA, TSSWCB, and TWRI to meet the producer and take measurements and data associated with installation of the new technologies and monitoring systems needed for the project. Work on the Quality Assurance Project Plan (QAPP) done cooperatively by TWRI, BAEN, and SFA is nearly completed, which should be ready for submittal to TSSWCB during the next quarter. Information for the project's website and one-page fact sheet have been compiled and have been submitted for editing and review within TWRI.

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 15th 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 first QPR for this project on June 15, 2010.

12.5% 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 has been working to establish project accounts, but no invoices have been received regarding the project to date (*net expenditures on project = \$0*).

5% 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 engaged in one meeting and several telephone conversations with project partners discussing project deliverables, the content of the QAPP, and with Sanderson Farms in order to identify a cooperating producer for the project.

10% 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. Website information, including project background information, a task list, project partners, contact information, and images related to the project has been submitted to TWRI communications specialists for review.

25% 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. No activity to report this period.

0% 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. QAPP is in the process of being compiled and will be submitted to TSSWCB for review early next quarter.

45% 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. BAEN and SFA, along with TSSWCB and TWRI, worked with Sanderson Farms and were successful in identifying one of Sanderson Farm's producers located east of Mexia, Texas who was selected to host the project.

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. PIs from all involved entities plan to meet and discuss procedures for instrumentation and sampling details before the end of June, and BAEN will be visiting the study site in July to conduct fan flow rate measurements. BAEN also plans to have interested graduate students and student technicians to assist with the project identified by the end of the next quarter.

5% 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. The Sole Source letter has been approved and BAEN has submitted the PO number to the vendor.

5% 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. No activity to report this period.

0% 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. No activity to report this period.

0% 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. No activity to report this period

0% 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. No activity to report this period.

0% Complete

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

No activity to report this period.

IV. Projected Work for Next Quarter

Poultry Producer Visit and Equipment Installation

A research/reconnaissance trip to the research site was scheduled for June 2nd. Based on information provided by BAEN and Sanderson Farms, the vendor has made tentative plans to begin installation of both technologies in the middle of July when the poultry house to be treated

has been cleaned out between flocks. BAEN and SFA have also planned several more site visits to make measurements and take data related to installation of the monitoring equipment needed for the project, including monitoring systems for the weather station, exhaust fans, and the EPI/BC technologies.

Website Construction

A draft of the information that will be available on the project website has been submitted to TWRI communications specialists for editing. After the edited information has been returned and corrections approved, the website information will be forwarded to TWRI software development to be posted online, at which time it will be subject to review by project personnel and the TSSWCB project manager before it becomes publicly accessible.