

## **Arkansas Discovery Farm**

**Submitted by Mike Daniels**

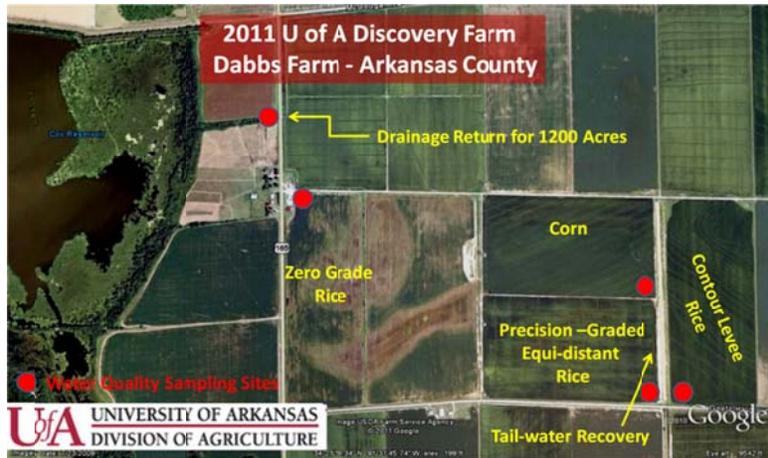
**Summary:** The Arkansas Corn and Grain Sorghum Promotion Board granted the University of Arkansas' Division of Agriculture \$5,000 in 2011 to assist with the funding a Row-Crop Discovery Farm Technician. Along with contributions from the Soybean and Rice Research Promotion Boards at \$17,000 per year has allowed us to fill the position with Pearl Daniel in mid July. The Arkansas Discovery Farm program is currently collecting data from three row crop farms, one in Arkansas County near Stuttgart and two in Cross County near Cherry Valley. Data is being collected from four rice fields, one soybean field and one corn field this year and will change next year depending on crop rotations.

### **New Technician**

The University of Arkansas' Division of Agriculture's Discovery Farm Program hired Pearl Daniel as the new row-crop Discovery Farm Technician. Pearl is a 2011 graduate of the University of Arkansas' Crop, Soil, and Environmental Science Department with a degree in Environmental, Soil, and Water Science. She began on July 11, 2011. She is maintaining and servicing our water quality monitoring equipment on our row crop Discovery Farms in Eastern Arkansas. She will also utilize her spatial technology skills to develop GIS databases for the farms. Pearl will be located in the State Extension office in Little Rock and can be reached at (501) 671-2230 or via e-mail at [pdaniel@uaex.edu](mailto:pdaniel@uaex.edu)

### **Discovery Farm Progress:**

As with many of our farmers, flooding in April and May delayed our instrumentation of several sites on our Discovery farms. But with the onset of drought, we have been able to get 13 automated water monitoring stations installed. **At Stuttgart on Terry Dabbs' farm**, we are monitoring three rice fields, one corn field and runoff from 1,200 acres of cropland. As for rice, we are monitoring water quality inputs and outputs in an unlevelled rice field, a precision-graded rice field and a zero-grade rice field. In the corn field, we have been able to monitor water in-flow and out-flow from several furrow irrigations as well as collect water quality samples. Since Terry catches all his runoff with tail-water recovery structures, we are able to monitor runoff from 1,200 acres at one central drain before it returns to his reservoir. This provides us with a unique opportunity to examine runoff at multiple scales.



Overlay of the Discovery Farm set up on Terry Dabbs Farm



Water monitoring station in rice on the Dabbs Farm.

At Cherry Valley, we are monitoring water inflow and outflow on the Clements farm in a 65-acre rice field. However, flooding delayed the planting of our soybean field on the Mike Wood farm. The soybean field is instrumented and we have collected samples from one irrigation event.



**Overview of Monitoring on the Clements Farm.**



**Overview of sampling on the Wood Farm.**

### **Addition of a Cotton / Corn Discovery Farm**

With funding from the State in 2011, we are in the process of installing a cotton and corn Discovery farm in Desha County with Steve Stevens. We have visited the farm and identified four fields where we will monitor the quality and volume of inflow and outflow of each field. Depending on crop rotations, it will most likely have two-paired cotton fields and two paired corn fields. A fifth sampling station will be installed to monitor the outflow of runoff from land currently enrolled in the Conservation Reserve Program. We will be installing equipment during the next three months so that we are ready to monitor before any extensive field and soil work begins.



A planning meeting was held in August on the Steve Stevens farms to determine water quality monitoring locations for cotton and corn. Included in the planning were Dr. Yushen Chen from UAPB, Dr. Duane Goldman of Monsanto, Dr. Tom Barber, Extension Cotton Specialist, Dr. Andrew Sharpley, Division of Agriculture Crops, Soils and Environmental Scientist, Dr. Mike Daniels, Extension Specialist Steve Stevens, Cotton and corn producer and Discovery Farm Cooperative and Andrew Wargo, Baxter Land Company and Vice-Chairman of the Arkansas Discovery Farm Stakeholder Committee.