

## Texas Soil and Water Conservation Program

Name of Project: Conservation Tillage System Evaluation and Development of BMP's

Is this a New Project or Request for Continuation? Continuation

Geographic Area of the Project: South Central Texas

Name of Principal Investigators:

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Amount of Funding Requested: \$7,700.00

### Project Description:

The funds requested will be used to help support a project already begun with some limited funding from the Sorghum PROFIT program. In cooperation with Charles Stichler, Extension Agronomist, Dr. Jim Smart, USDA-ARS (Dr. Smart resigned from ARS), and the Board of Directors of the Luling Foundation, a **five** year conservation tillage project was started in the fall of 1999 at the Luling Foundation Farm in Luling, Texas. There are four tracts of land, approximately 15 acres in each - together form a large square. Within each quadrant (crop), there were three tillage treatments, **no till, ridge-till, and conventional till**, each treatment was 16 rows wide, and replicated four times. This will change in 2002 (see below). The four tracts are planned to rotate among corn, cotton, sorghum and wheat, with the tillage treatments remaining in the same place year after year. A report of 2000 is included with the proposal.

**The Luling Foundation is providing at no cost labor, equipment, and land.**

Evaluations of cultivars, herbicides, sprayers, fertilizers, tillage equipment and economics of each system are a part of the project. Some researchers and producers indicated that "trash farming" will not work in this part of the state, especially on the Houston Black Clay soils. ***The objective of the project is to evaluate conservation tillage systems over a long period in dryland row crop agriculture in South Central Texas to determine the impact on soils, crop production and profitability as compared to conventional tillage and develop BMP's for producers.***

Since the inception of the trials, in 1999, four conservation tillage field days have already been held at the Luling Foundation with a total attendance of approximately 800. County extension agents in the four county surrounding area regularly work with the Luling Foundation Farm to plan and implement field days. The educational field days, publication of findings and demonstration of equipment and farming practices will continue as they have in the past. There is a high interest in conservation tillage in the area but producers need to see that these new technologies can and will work on local soil types before they will adopt con-till practices. We have demonstrated that con-till will work - and is more profitable than conventional tillage to lower input costs and increased net returns.

For example in 2001, we planted about 30 acres of corn **without any tillage** - at the LFF., in an old field that had become a pasture with, **it was a huge success.** (We were all surprised of the good results - and “wowed” producers.)

### **Specific Soil and Water Conservation Issues Addressed**

This project is to evaluate the different tillage systems to determine the best management practices (BMP's) for the region. (A meeting is scheduled for Aug. 28<sup>th</sup> to develop a publication on what we presently know.) The conventional system in the region is clean tillage by occasional plowing, chiseling and disking. With the rolling topography of the region, much water and soil is lost due to heavy rain events common in the region.

With low commodity prices, and the high cost of equipment, conservation tillage offers an alternative with fewer and lower horsepower tractors, with less repairs and maintenance, and reduced labor. Increased management and reliance on herbicides are needed. However, improved weed control by utilizing new technology such as hooded sprayers, herbicide resistant crops, and low drift spray nozzles can reduce weed populations that have been yield limiting problems for many years with conventional tillage methods. Many difficult to control weeds in crop land such as Johnsongrass, Hophornbeam copperleaf bermudagrass, Texas panicum, sunflowers, and smell melons can be effectively controlled by using conservation tillage techniques and equipment.

The geographic coverage of the project includes most of the dryland production acreage from Corpus Christi to Dallas. The conservation concerns covered by this project include:

- conservation tillage
- water management and conservation
- soil management
- tillage practices
- soil quality/soil health
- resource management
- cropping systems and rotations
- mulching
- land management related to soil and water conservation
- conservation practices economics

### **2002**

Beginning in 2002, we will change some of the practices at the farm. We have already determined that conservation tillage is superior to conventional practices. We plan to eliminate the conventional tillage and focus more on reduced tillage and no-till. Such issues as fertility, weed control and residue management will become more of the focus.

### **Collaborations**

The project will continue to be managed under the collaborative efforts of:  
Charles Stichler, Extension Agronomist, Texas Agricultural Extension Service  
Mike Kuck, Farm Manager, Luling Foundation Farm

Assisting will be:

Lytle Archie, Caldwell CEA  
Travis Franke, Guadalupe CEA  
Jeff Hanselka, Guadalupe CEA

Billy Kniffen, Hayes CEA  
Dwight Sexton, Gonzales CEA