

On-Farm Research to Evaluate Irrigation Scheduling Tools to Increase Yield and Control Diseases.

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Project Dates: March 2005 – December 2005

Project goal: The primary goal of this research is to reduce production cost of crops grown in the Rio Grande region by improving irrigation efficiency in stress environment while controlling diseases (aflatoxin, common root rot, etc.) and identify farm management tools leading to cost savings and consequently increase profit. In order to achieve this goal, several crops grown under conventional and no-tillage management, will be studied on farmers fields and at the Uvalde Experiment Station to address the following objectives: 1) to identify threshold limited irrigation for crops grown under minimum and no tillage farming practice; 2) to identify best management practices targeted to avoid water stress in critical period of plant development more conducive to disease problems; 3) to evaluate and adapt water management technologies to optimize limited irrigation and production of corn in the presence of different types of stresses (drought, disease and insect).

Key words: PET, aflatoxin, common root rot, irrigation scheduling support tools, conservation tillage, limited irrigation.

Impact Statement: This research will educate growers in using irrigation scheduling support tools to best manage corn crop. This will allow growers to decrease cost of production by cutting water costs and at the same time escape situation of plant water stress leading to yield losses and aflatoxin.

Deliverables: This research will be carried on in part on corn grower's fields. Presentation of research results will be distributed to the agricultural community and the general public of the Winter Garden region of Texas through: 1) Field days and crop tours on farmers fields, 2) Production meetings with local growers, 3) Newspaper articles, 3) Radio programs, 4) AG Newsletters and publication in professional journals (i.e.: Agronomy Journal, Crop Science or Plant Disease), 5) Individual meetings with producers.

2005 TWRI Budget Request:	\$ 10,000
2005 San Antonio Water System (SAWS) and Edwards Aquifer Authority (EAA) matching funds:	<u>\$ 10,000</u>
2005 Total Project Cost:	\$ 20,000