Investigator: **Haishun Yang**

Position Title: Associate Professor

Department: Agronomy & Horticulture

Email: hyang2@unl.edu

Telephone: (402) 472-6372

Web page: http://agronomy.unl.edu/yang

Project Title.
Developing CornSoyWater: A Web-based Decision Aid for Corn and Soybeans in Nebraska

Abstract.
The most critical step in irrigation decision making is to know, in a real-time and forecasting mode, (a) crop development and stages that are most sensitive to water stress and yield loss; (b) the amount of available water in the soil; (c) the severity of water stress; and (d) the weather outlook. The project will develop *CornSoyWater,* which is an integrated, web-based irrigation decision support tool. It will provide such information, in a real-time and forecast mode, to Nebraska irrigators.

CornSoyWater will be built upon the success of *SoyWater* (http://hprcc3.unl.edu/soywater/), a web-based irrigation aid tool for soybeans that was developed with funding from the *Water, Energy and Agriculture Initiative – Phase 1.* Similar to the *SoyWater* online tool, *CornSoyWater* will track daily water depletion and provide information about corn development, the amount of available water in soil, the forecast of crop stages that are sensitive to water stress and yield loss, the number of days until the water available in the soil will drop below thresholds for irrigation, and the weather outlook.

The University of Nebraska–Lincoln (UNL) Hybrid-Maize model (http://hybridmaize.unl.edu/) will be built into the program to predict corn stages, water consumption, soil water balance at different depths, crop water stress and irrigation water requirements for meeting different irrigation targets. Real time weather data for a given field will be estimated by interpolation of the nearest weather stations available through UNL's High Plains Regional Climate Center (HPRCC), and the National Oceanic and Atmospheric Administration (NOAA) 10-day weather outlook, which is available at http://www.nwrfc.noaa.gov/weather/10_day.cgi.

CornSoyWater will provide Nebraska irrigators with real time assessments of crop development, soil water status, crop water stress and the crop outlook. This online resource will also help Nebraska irrigators to save irrigation water and energy, improve crop water use efficiency and increase farm profitability.

Co-Investigators.
· Greg Kruger, Assistant Professor – Agronomy and Horticulture; North Platte, Nebraska; gkruger2@unl.edu; (308)696-6715
· Jenny Rees, Associate Extension Educator –Southeast Research and Extension Center; Clay Center, Nebraska; jenny.rees@unl.edu; (402) 762-3644