
Tri-Basin NRD
1723 N Burlington Street
Holdrege, NE 68949



Phone: (308) 995-6688
Fax: (308) 995-6992
Email: tribasin@tribasinprd.org

Natural Resources District

NEWS RELEASE

March 24, 2009

For Immediate Release

For more information, contact: Nicole Salisbury, Information & Education Coordinator
Phone 308-995-6688 or email nsalisbury@tribasinprd.org

UNL Study Focuses on Irrigation Water Productivity in Parts of Tri-Basin NRD

A select group of irrigators in Tri-Basin Natural Resources District will soon receive an invitation in the mail to participate in an irrigation water productivity study being conducted by Dr. Ken Cassman, agronomy professor at the University of Nebraska-Lincoln. The purpose of the study is to determine optimum amounts of irrigation water and fertilizer needed to maximize corn yields in south-central Nebraska.

In many parts of Nebraska, the amount of irrigation water available for crop producers is restricted due to groundwater declines or to prevent depletions to streamflows. With the increase in demand for irrigated crops such as corn and soybean for both livestock production and biofuels, reducing crop yields is not an option. Instead, the challenge is to find ways to both raise yields and do so with a reduced amount of irrigation water.

"We believe that this approach provides a powerful tool to improve individual farm and aggregate NRD water use efficiency for irrigated crop production, and believe that results can be employed quickly, within the next two years," Dr. Cassman said.

A first step towards this goal is to benchmark the performance of current irrigated crop production in terms of irrigation "water productivity," which is the amount of yield per inch of **available water supply** from residual soil moisture at planting, rainfall during the season, and applied irrigation.

Dr. Cassman and his colleagues have developed an approach that establishes the maximum water productivity that can be expected from irrigated corn in a given region. They will use this benchmark to

evaluate how close irrigated corn producers in the Tri-Basin NRD come to this maximum water productivity function. To do this, they will use a corn simulation model, weather data from the Tri-Basin NRD region (including solar radiation, temperature, and rainfall), and data on irrigation amount and actual yields achieved by participating Tri-Basin NRD corn producers. All data and analyses will be kept confidential.

By quantifying the average water productivity value and the range of values for irrigated corn in Tri-Basin NRD, Cassman and his colleagues can then evaluate crop management options to improve it. Three options will be explored: (i) increasing yields at the same level of irrigation, (ii) maintaining current yields at a reduced level of irrigation application, and (iii) a mixture of i and ii. This analysis will be performed using the aggregated data from the study. It will be useful to the NRD for estimating the potential to improve irrigation efficiency. Cassman will provide each farmer who participates in the study with their own specific data on water productivity, how their value compares with the average NRD value and the maximum potential value, and what might be done to increase irrigation efficiency and profit.

Funding for this project comes from the Water, Energy and Agriculture initiative which is supported by the Nebraska Public Power District, the Nebraska Corn Board, the Nebraska Soybean Board, the UN-L Center for Energy Sciences Research, and the Agricultural Research Division of the Institute of Agriculture and Natural Resources at UN-L.