

Project Overview

Intern: Keith Miller

Major: Biological Systems Engineering

School: University of Nebraska



Company Background

University of Nebraska-Lincoln extension offices provide assistance with a wide array of topics from animal agriculture and horticulture to entrepreneurship and youth education. Extension educators form a link between the state's researchers and those implementing the new technology or practices. Extension offices strive to make a local, relevant impact by responding to the needs expressed by each local community.

Project Description

2012 projects in Clay County, NE included installing watermark moisture sensors, along with their data loggers and other various tools to collect data for growers who have not had experience using these tools. It also included the installation of ET gauges that are read manually and mechanically. The goal of using this equipment is to make crop water use efficient. The intern also followed up with clients that had previously been assessed and tried to help them quantify results.

Pollution Prevention Benefits & Results:

There is potential for a great savings of cost, energy and reduction of GHG releases due to the implementation of watermark sensors and the recommendations for irrigation enhancements. Those benefits are summarized in Table 1 below.

Table 1. Potential Pollution Prevention Benefits

P2 Opportunities	Annual Cost Savings	P2 Reductions
Water use reduction		54.4 million gallons
Electricity use reduction	\$910	13,400 kWh
Diesel use reduction	\$7,500	3280 gallons
Natural Gas use reduction	\$3,920	5920 therms
TOTAL	\$12,330	

Additional indirect or intangible benefits include:

- Prevent contamination to groundwater
- Reduce GHG emissions by nearly 64 MTCO₂E