

# **WATER MANAGEMENT A KANSAS FARMER'S VIEWPOINT**

**Craig A. Meyer  
Irrigation Manager  
Great Plains Cattle  
Pratt, Kansas  
Voice: 316-672-9431 Fax: 316-672-7785**

## **HISTORY**

Great Plains Cattle began operations in 1972 in Pratt County in south central Kansas. Commonly known as the Pratt Sandhills area, the region was just beginning to be broken out and "leveled" for center pivot irrigation.

Currently we are farming 77 irrigated quarters (all center pivot irrigation.) Our primary cropping practices are alfalfa, corn, wheat, and smooth brome grass. The irrigated brome grass is used for spring through fall cattle grazing program and the wheat is utilized over the winter months.

I began working for GPC in 1976 and have seen many changes in irrigation practices and water management over the last 23 years. As more research and education has become available for the farmer who irrigates, these changes have made great strides in conserving water, one of our most precious natural resources.

## **WATER MANAGEMENT**

Wayne Clyma, professor at Colorado State University, once wrote, "Irrigation water management is the process of accomplishing the application of water to support the farm's objectives for production." I would like to discuss the three major players I think are the keys to good water management, along with acceptable crop production.

### **The System**

A center pivot, or any other type of system used for irrigation, should be in top shape mechanically and with all the latest water disbursement methods the industry has to offer. Drops and low pressure nozzles have been around a long time, yet I still see center pivots with high impact sprinklers and high water

pressure at the discharge. Lowering pressure and bringing the nozzles down out of the wind just above your crop canopy is probably the largest single factor in saving water and energy, and the biggest step toward good water management. It has only been in recent years that computer technology has become available for irrigation. Farmers using the "Pivot Alert" computer program in crop production save not only time and expense, but, their most valuable commodity; water resources.

## The Soil

When to irrigate and how much to irrigate are two key questions in water management. Knowing your soil type and its water holding capacity helps answer the "how much to irrigate" question. On our farm in south central Kansas, most of the soil holds, on an average, about 1.2" water per foot. Over-watering is wasteful of both water and nutrients below the root zone, while under-watering can be detrimental to crop production. The soil is the "bank" the crops can withdraw water from. Knowing how much the root zone will hold can greatly reduce over-watering and is another step toward good water management. Here, again, the low pressure system comes into play using less and wasting less water.

## The Crop

The "when to irrigate" question is largely answered by the crop growing on the irrigated land. Plants use different amounts of water during their growing season. Knowing when to irrigate is probably the most difficult of the two questions, and requires some sort of scheduling by the farmer or a crop consultant.

At Great Plains Cattle, we are currently using "ET Scheduling" (Evapo-transpiration Scheduling) on all of our corn acres. Computerized weather stations giving fundamental data such as temperature, moisture, barometric pressure, etc., give the farmer vital information necessary for making practical decisions on farming, in a particular area, at the touch of a phone or computer. Utilizing a crop consulting firm and these weather stations the local groundwater management district has installed, "when to irrigate" has become a much simpler question to answer.

Evapo-transpiration scheduling begins with the crop consultant recommending an accumulative ET value to begin an irrigation. The daily ET rate is then collected from the weather station and the circle begins when it reaches their total ET to start. This scheduling format is most advantageous during early and late cropping stages of corn. Our records show that we have used 10 - 15% less water per circle / per year, over the last three seasons, yet we have maintained comparable yield averages.

## SUMMARY

Irrigation water management is an issue that has been around for many years, but has been studied much more intensely the past three decades. Universities and researchers are doing an excellent job of coming up with answers to good water management practices. We, as farmers, need to incorporate these practices into our irrigation program in order to preserve and protect our fresh water resources for future generations.