TOOLS TO USE FOR WATER MANAGEMENT

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Introduction

There are always new products on the market to improve water management or system efficiency. Sometimes we tend to focus on the newest things rather than those things that make sense for our operation. For example, most producers would prefer having a center pivot over irrigating with gated pipe, yet economics for a given enterprise may not make that change possible for a number of years. At the same time, furrow irrigation should not be considered as an inferior method to manage water any more than a center pivot considered inferior compared to subsurface drip (SDI). With each system comes opportunities to make improvements in irrigation efficiency but each system also requires different changes in management practices to achieve those improvements.

An important water management issue for any irrigation system is determining how much and when to apply water. Installing SDI offers improved system efficiency, but with that improvement comes changes the operator must use to obtain rewards from this technology. For example, SDI offers the ability to apply water on a daily basis which means knowing daily crop water requirements is important to prevent crop stress.

For center pivots, the primary differences among systems are sprinkler packages. Sprinkler packages perform differently due to crop, soil type and slope, therefore water application varies. Although daily water use is important, it's more likely water use from a series of 3 - 4 days will be summed to determine when and how much to irrigate.

Those that are using furrow irrigation will find that their scheduling practices will be much different than either SDI or center pivot irrigation. Furrow systems tend to fill a significant portion if not all of the soil profile where roots are actively growing. This difference means that scheduling irrigations will be based on matching water use over a longer period of time, perhaps a week or more.

In any case, SDI, center pivot or furrow, the same basic information was needed but used in a different way to properly manage water for irrigation. Finding the desired management information often proves to be a challenge in itself. To find information on irrigation scheduling, other irrigation topics and general crop production recommendations, visit one of the university websites listed below. These are examples of the type of information available. Browse the sites for even more information. Production information is added on a weekly basis to provide answers to your production questions.

University of Nebraska Websites:

www.ianrpubs.unl.edu/ - For irrigation related topics at this site you need to select either Irrigation Engineering or Water Management under the Browse Publications section. For information on a specific crop, click Field Crops to find information on irrigating crops such as corn and winter wheat.

www.extension.unl.edu/farm_ranch.htm - At this site is a self paced study guide on water quality(Irrigation(Managing) and Nitrogen to Protect Water Quality). There is also information on Nebraska's Irrigation Home Study Course.

www.cropwatch.unl.edu/ - Crop Watch presents timely crop production information from researchers and extension specialists.

Kansas State Websites:

www.oznet.ksu.edu/sdi - This is K-States subsurface drip irrigation website which offers an array of information from design and pictures to publications, reports and fact sheets going back to 1990.

www.oznet.ksu.edu/irrigate - This site provides answers to general questions. It includes a number of reports and also access to the faculty at K-State.

www.oznet.ksu.edu/mil - At K-States Mobile Irrigation Lab website you can find what the Mobile Irrigation Lab provides and by clicking on "MIL Tool Kit and Resources", access KSU's fact sheets. Using their quick links find a center pivot depth calculator for determining pivot application at different panel settings.

Colorado State Websites:

www.ext.colostate.edu/menuwater.html - Get answers to water resource questions, including questions concerning the drought in the High Plains.

www.colostate.edu/Depts/SoilCrop/extension/WQ/ - This site provides a number of publications related to CSU's water quality program. One of their newer publications at this site is "Best Management Practices for Colorado Corn", and includes a number of irrigation topics.

http://ccc.atmos.colostate.edu/~coagmet/extended_etr_form.php - This site provides ET (crop water use data) for irrigation scheduling. The site allows you to choose planting date, crop and the closest weather station to your farm.