



**COLORADO STATE UNIVERSITY
EXTENSION**

Colorado State University Extension Golden Plains Area

*Contact: Todd Ballard
Title: Extension Area Agronomy Agent
Phone: 970-474-3479
E-mail: todd.ballard@colostate.edu*

For Immediate Release

July 17, 2020

Headline

(Julesburg, Colo.)

Overcoming water shortfalls

Managing the Ogallala aquifer resource for long term use will require a multifaceted approach. Choosing crops that can maximize the ten-year profit per acre inch of water applied is a tool to advance crop rotation planning. Site specific tools such as leaf temperature measurements taken from the overhead irrigation system will help place water in the right place at the right time. While drip irrigation is more expensive to install than overhead systems the water placement results in more efficient use. Regulatory limitations exist as well. The crop loss insurance policy for fully irrigated land includes a clause requiring a minimum irrigation volume without exception for years with above average rainfall or droughts beyond irrigation management' ability to overcome.

Agronomic crop choices in Sedgwick county are concentrated within a few species. According to the 2012 census of agriculture wheat and corn occupy the most grain production land. Sunflowers, the next closest grain crop comes in at just 5.5% as much land as corn. While drought resistant corn has been promised to be coming by seed companies for ten years, it has yet to be delivered on a large scale. Grain sorghum can be grown with a smaller water input. However, the hurdle of diminished returns on water input to sorghum can limit the interest in sorghum by growers that have heavily invested in irrigation. Forage sorghum can also be used to produce silage with from a high biomass crop. CSU has hired a cowpea breeder to bring a broadleaf option to row crop producers. A broadleaf crop will allow for improved grass weed management by using grass herbicides in season. Millet has recently gained some commercial land. I am interested in exploring further alternatives as well. Daikon radish, garbanzo, and sesame are all possibilities. A joint canola improvement project at Kansas State and Oklahoma State may make canola a possibility over the next few years.

Site specific tools contribute to water use efficiency in multiple avenues. Measuring leaf temperature during an irrigation event allows for closing valves in areas where water is not in demand to the extent of other areas in the field. Identifying weeds with an infrared profile to spray an appropriate herbicide will decrease the use of water in spray applications and help manage herbicide runoff risk. Automatic steering enables consistent passes with sprayers which minimizes the area with application overlap.

Adoption of drip irrigation is more widespread in vegetable crops, viticulture and fruit crops than in grains and pulses due to the installation cost. However, the long-term cost of not focusing on water use efficiency could be the loss of land productivity. Drip irrigation has been used in agronomic crops in concert with fertigation. In southern Florida's sand soils, applications of nitrogen and potassium are split into up to four applications. The equipment cost of multiple passes per year over a field over a long-term lifespan of the irrigation system can exceed the cost difference of installing drip vs overhead irrigation.

###

Colorado State University Extension programs are available to all without discrimination.

Colorado State University Extension is your local university community connection for research-based information about natural resource management; living well through raising kids, eating right and spending smart; gardening and commercial horticulture; the latest agricultural production technologies and community development. Extension 4-H and youth development programs reach more than 90,000 young people annually, over half in urban communities.