

# Keys to Agronomy

VOL 10

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## Hale County Ag Fair

Being a former ag teacher, I enjoy teaching youth about agriculture. During October, the Hale County AgriLife Extension and Hale County Farm Bureau Board hosted an event for 4th-grade students to learn about agriculture that is happening right around them. This year, 368 students attended! With 15 minutes per rotation, presenters work to capture these students and provide insight into why agriculture is an important industry. During my rotation, I discussed the importance of healthy soils using the #soilyourundies challenge developed by USDA -NRCS Oregon in 2018. This is a visual and fun way to show the importance of microbes beneath our feet. I “plant” these undies at each elementary school playground in July and “harvest” them in early October. I display these with the school name to see who had the healthier soil in that particular location. This year, I brought an earthworm bin for these students to dig in and find the worms after we discussed the importance of soil health to agriculture and even their home yards.

In the coming months, I will continue to introduce the awesome producers around the area but I will also be introducing Extension specialists and ag businesses! If you have an ag business you want to see in the upcoming newsletters, send me (email, text, or call) their name and address and I will make that connection!

NEW

Contact Me!

Got an idea, question, or  
comment?

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# NEW IRRIGATION TECHNOLOGIES: SOIL MOISTURE SENSORS

Have you driven a car with a broken gas gauge not knowing when you were about to run out of gas or when you needed to fill up? Soil moisture monitors can be like that gas gauge, telling you when the soil is running low on moisture or how much of a recent rainfall your soil captured and held onto. Understanding crop water demand throughout the growing season can help producers increase their water-use efficiency. There is a lot of research being done on using soil moisture monitors, their effectiveness, and the ease of use of the programs for producers. Dr. David Parker at West Texas A&M University, in collaboration with Dr. Jourdan Bell (Texas A&M AgriLife) and Dr. Robert Schwartz (USDA-ARS) have been comparing moisture monitoring systems for several years. Despite differences among different brands and types, he says that all sensors provide some value. Knowing the amount of moisture in the soil before planting can make the difference between success and failure. The biggest decisions a farmer has to make are what crops to plant, and how many acres to irrigate. Parker says that during the growing season, soil moisture data is only valuable if you have additional irrigation water to apply to the crop. If you are already applying every drop of available groundwater to your field, then knowing how dry the soil is does not help, if there's nothing you can do about it (except pray for rain, he says).

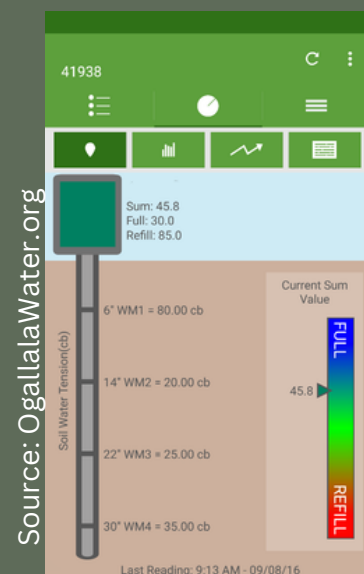
## How do they work?

There are a few different types of moisture monitoring systems. Typically, these are divided into two categories depending on the technology they use; measuring volumetric water content or measuring soil tension once placed in the soil. You also have permanent and portable within those categories. More recently, there are aerial and satellite moisture monitors available as well. In a nutshell, the probes will ESTIMATE the amount of water in the soil based on the electric properties of the soil. According to the University of Minnesota Extension and their extensive work with moisture monitoring systems, the soil particles, water, and air have different dielectric constants, their ability to store or dissipate electrical energy is different and that is how the data can be correlated to soil water content. Thankfully all that data gets translated onto a platform accessed by phone or computer in some type of graph or chart (some systems). Talking with producers and Extension professionals, the data provided can sometimes be difficult to convert from raw data to usable information quickly.

## Choosing soil moisture sensors

You have options! When shopping around for soil moisture sensors you need to be sure to compare the advantages, disadvantages, and features. According to OgallalaWater.org, the following factors should also be considered:

- convenience of installation and maintenance
- cost
- remote access capability
- product support
- number of sensors required
- sensor spacing, volume, and response time
- integration with weather-based and plant-based moisture sensors and data



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# COVER CROPS: SELECTION GOALS

Last month I introduced the new series for this AgriLife year newsletter, cover crops (and soil-water relations), and discussed some of the benefits of planting cover crops in your operation.

- controlling erosion
- suppressing weeds
- reducing soil compaction
- increasing moisture and nutrient content of the soil
- improving yield potential
- providing habitat for beneficial insects and wildlife



While I would like to think all cover crops will give you every benefit listed above, I know that there is not a “one cover crop fits all” approach in the area we live in, therefore we have to narrow our goals and keep in mind our climate to determine which cover crop to plant. According to SARE (Sustainable Agriculture Research and Education), it’s important to keep the end result in mind during the selection process especially not choosing plants that will attract or be host for pests for the following cash crop. Other characteristics to consider are:

- ease of establishment
- early growth rate
- rooting depth
- biomass yield
- ease of termination
- cost
- nitrogen fixation (upcoming topic in this series)



There are three main groups of cover crops; grasses, legumes, and forbs.

## Grasses

- provide biomass for organic matter
- grazing potential
- topsoil protection after termination

## Forbs

- grow rapidly
- suppress weeds by shading soil
- roots penetrate and loosen soil hardpans
- provide wildlife with nutrients
- increase water filtration after termination

## Legumes

- provide nitrogen by atmospheric fixation (15-200 lbs.N/ac)
- source of protein for livestock
- provide nectar for pollinating insects
- provide mycorrhizae with a protein to increase soil aggregates
- residue after termination degrades rapidly

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# AG MASTERMINDS

## SOIL HEALTH PRINCIPLES PRESENTED BY: SOIL HEALTH INSTITUTE

11.14.23

8am

Texas Producers Cooperative  
222 N. Main St.  
Sudan, Tx 79371



# AG MASTERMINDS

RSVP not required but encouraged! Contact Kristie Keys at 325-665-8790.



Breakfast Sponsored by:



**SOIL HEALTH  
INSTITUTE**

Enriching Soil, Enhancing Life

Please note time change to 8am for this months program!

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# Save the Date



November 14- Ag Mastermind @ Sudan (Soil Health Institute)

November 28-30- Amarillo Farm Show

December 5- Hale/Floyd BQA Training

December 19- Lamb County Crops Conference

December 21- Regional Crops Conference @ Castro County  
Extension Office (Virtual Program)

January 9- Castro County Crops Conference

January 18- Mid Plains Ag Expo (Hale/Swisher)

March 20- Castro County Crops Conference

**\*\*Stay tuned to social media and newsletters for more events\*\***

**Now is the time to check your accumulated CEUs for the year and  
see how many and which ones you still need!**



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