

Keys to Agronomy

VOL 5

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PRODUCER SPOTLIGHT



Jimmy Kelly Hale County

A round of golf, his family, and his wife of 33 years are what keeps Jimmy busy outside of farming. Farming is not only a way of life for Kelly, it runs in his blood and the family from his great uncle to his dad, himself, and his son. In his eight years of farming, Jimmy has grown corn, cotton, milo, and wheat in the Hale County area but farming isn't always easy. Jimmy says financing has been the biggest hurdle each year and he is looking for ways to generate income outside the normal. The advice he would share with a beginning farmer... "if you hate anything about it, don't start, and always look for ways to cut expenses". While mentioning money, Jimmy wants consumers to know that farmers do not set the price of goods. In fact, in a recent study in 2021 by the American Enterprise Institute, the farmer receives a record low 14.5 cents for every dollar Americans spend on food. This comes from the demand for highly processed, time-saving, consumer-friendly foods.

Fun Fact! Jimmy was the first farmer I met when I started in May 2022.

If you have a producer who you think should be highlighted in the Keys to Agronomy Producer of the Month, send me an email or text. I want to continue highlighting our awesome producers in the Hale/Lamb/Castro area.

Contact Me!

Got an idea, question, or
comment?

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TEXAS A&M
AGRI LIFE
EXTENSION

READING A SOIL ANALYSIS

PART 2: CEC

Fertility is a hot topic with crop input prices high. So management of nutrients is important. Cation Exchange Capacity (CEC) can be defined as the sum of the exchangeable cations a particular soil can absorb or how many positively charged ions can the soil hold. It can also help in determining how much clay you have in your soil, the type of clay, and the amount of organic matter.

SOIL ANALYSIS REPORT														DATE: 03/10/23		PAGE: 1	
SAMPLE ID	LAB NUMBER	ORGANIC MATTER %	RATE ENR lbs/A	PHOSPHORUS		POTASSIUM	MAGNESIUM	CALCIUM	SODIUM	pH		COMPUTED					
				P1 (Weak Bray) ppm-P RATE	P2 (Strong Bray) ppm-P RATE	K ** ppm-K RATE	Mg *** ppm-Mg RATE	Ca *** ppm-Ca RATE	Na *** ppm-Na RATE	SOIL pH	BUFFER INDEX	Cation Exchange C.E.C. meq/100g	PERCENT BASE SATURATION				
HOME HALF LEASE	11398	1.2L	55	23M	92VH	516VH	704VH	2469M		7.5		19.5	6.8	29.7	63.2	0.0	
	11399	0.8VL	46	55VH	119VH	634VH	585VH	2129M		7.6		17.1	9.5	28.1	62.1	0.0	
	11400	0.8VL	46	80VH	369VH	>700VH	680VH	3483M		7.8		26.0	12.3	21.5	66.9	0.0	

SAMPLE ID	NITRATE NO ₃ ***	SULFUR S ***	ZINC Zn ***	MANGANESE Mn ***	IRON Fe ***	COPPER Cu ***	BORON B ***	EX-CESS LIME RATE	SOLUBLE SALTS mmhos/cm RATE			CODE TO RATINGS: VL = VERY LOW M = MEDIUM VH = VERY HIGH ND = NONE DETECTED IS = INSUFFICIENT SAMPLE ENR = ESTIMATED NITROGEN RELEASE
	ppm-NO3N RATE	ppm-S RATE	ppm-Zn RATE	ppm-Mn RATE	ppm-Fe RATE	ppm-Cu RATE	ppm-B RATE	RATE	mmhos/cm RATE			
HOME HALF LEASE	2VL	8L	0.9VL	6L	5M	1.0M	1.6H					This report applies only to the sample(s) tested. Samples are retained for a maximum of thirty days after testing. A & L PLAINS AGRICULTURAL LABORATORIES, INC.
	2VL	5L	2.3L	7L	5M	0.9M	1.3M					
	5L	6L	1.2L	8L	7M	1.5H	1.5H					

In the field:

- Ion exchange reactions in soils are very important to plant nutrient availability and retention in soil.
- Increasing your organic matter could change the CEC of your field
- Higher CEC = the more lime it will take to change your pH
- Higher CEC = more nitrogen your soil will be able to hold
 - to find roughly how much nitrogen your soil can hold, multiply your CEC by 10
 - applying large quantities of fertilizer in a single application with a low CEC can create a loss of nutrients from leaching

On the analysis:

- Expressed as the number of moles of positive charge adsorbed per unit mass
- 2 methods of testing in the lab
 - most common is the estimate of CEC by summing the Ca, Mg, and K measured in the soil with an estimate of exchangeable hydrogen from the buffer pH
- If a soil has a higher CEC than another soil, it will have the ability to deliver more nutrition to that plant than the other soil
- Soils with high clay and organic matter (OM) contents have a higher CEC than sandy, low OM soil
- pH and CEC go hand-in-hand. When CEC is low, so is the pH
- Less than 10 CEC= sandy soils, 10-20 CEC = medium textured soils, over 20 CEC = heavy soil

PRESEASON IRRIGATION THOUGHTS FROM DR. DANA PORTER

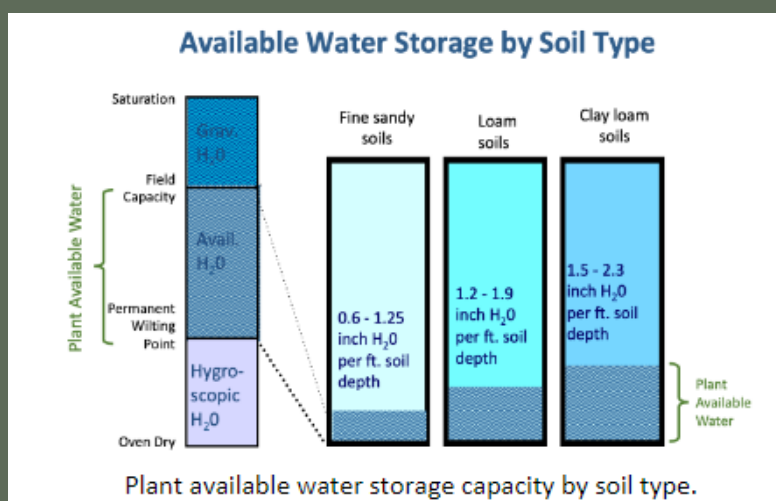
Pre-season irrigation water losses can be high, regardless of irrigation method.

- Evaporation losses can occur during and following irrigation application.
- Warm, sunny, windy conditions (as we frequently see during the spring in the South Plains) contribute to higher evaporation losses.
- Deep percolation losses (leaching of water below the root zone) are affected by soil moisture, soil texture, and soil structure. While leaching can be useful for leaching excess salts from the root zone, leaching also carries nutrients (especially highly soluble compounds, such as nitrate) below the root zone.

Even with low irrigation capacities, most irrigators can continue to build soil water storage early in the vegetative growth stages, when plant water demand is relatively low. It generally is not necessary to build full soil water profile (field capacity for the whole root zone depth) prior to planting. In fact, much of the water applied early likely will be lost through evaporation and deep percolation.

Some pre-watering may be needed to ensure crop establishment, especially if the seed zone and root zone are dry from the previous season and lack of inter-season precipitation. Be cautious about interpretations of research that advocates delay of irrigation initiation. Did they pre-water to ensure crop establishment to “mimic” inter-season precipitation? Does your soil have a higher or lower water storage capacity the soil at the research site?

It is very useful to understand the root zone and field soil conditions. How deep will the crop establish effective roots? What is the soil texture, and hence plant available water holding capacity? A sandy soil cannot generally store as much water as a clay loam soil. Is there a confining layer, such as a caliche layer?



As the crop canopy develops, crop water use tends to increase (of course); also, as the temperatures and hours of sunlight increase, atmospheric water demand increases. For many crops grown in water-limited (and irrigation capacity limited) conditions, seasonal peak crop water demand can exceed irrigation capacity. During high water demand growth periods, stored soil water can help make up the deficit. Hence, while it generally is not necessary or recommended to have the root zone soil water storage capacity “full” at planting, the early season “banking” of soil water can be useful to mitigate shortfalls in rainfall plus irrigation capacity at flowering/tasseling crop stages, which tend to be stages when yield can be most affected by drought stress.

Weed Control

The key to effective, season-long weed management is to start clean. In conventional tillage, normal land preparation practices and herbicide incorporations, followed by a rodweeder prior to planting should provide a clean start for uniform crop emergence and allow the crop to "get a head start" on the weeds. For growers in some type of reduced or no-tillage system, the use of tillage is replaced by burn-down herbicides prior to or at planting. In this semiarid region, there are plant back restrictions to be aware of to avoid crop damage after planting.

An extensive list of herbicide options is not the goal of the following, but more to focus on the commonly used herbicides in this region in cotton.

Use these recommendations as a guide and consult the herbicide labels (<http://www.cdms.net/>) for complete details regarding rates, rotational restrictions, use of adjuvants, recommended carrier volumes and spray tip selection, and more.

Next Month:
Post
Emergence
&
Layby
Options

2020 Weed Control Programs for Texas High Plains Cotton Growers

2/3/2020

Delaney C. Foster, Peter A. Dotray, and J. Wayne Keeling
Texas A&M AgriLife Research and Extension Service – Lubbock, TX

This publication serves as a guide to commonly used cotton herbicide options in the Texas Southern High Plains. Always carefully read and follow herbicide labels for rates and soil and plant back restrictions. Other generic brand names may exist that are not listed in these tables as well as other herbicides registered for use in cotton.

Preplant Incorporated (Conventional Tillage)/ Burndown (Conservation Tillage)

Tillage	Herbicide	Rate
Conventional	Treflan ¹ , generic trifluralin	1-2 pints/acre ²
	Prowl H ₂ O ¹ , generic pendimethalin	1-3 pints/acre ²
Conservation/No-till	Prowl H ₂ O ¹ , generic pendimethalin	2-4 pints/acre ²
	Dicamba/2,4-D	See product label for rates and planting restrictions
	Roundup, generic glyphosate	32-44 fl oz/acre
	Valor, generic flumioxazin	2 oz/acre >21 days before planting + at least 1-inch irrigation
	Gramoxone, generic paraquat (2 and 3 lb formulations)	1-2 pints/acre (2 lb/gallon) 1.7-2.7 pints/acre (3 lb/gallon)

Preemergence Herbicide Options³

Herbicide	Rate
Prowl H ₂ O ¹ , generic pendimethalin	1-3 pints/acre ²
Caparol, generic prometryn	1.6-3.2 pints/acre ² DO NOT USE on sand or loamy sand soils
Direx, generic diuron	0.8-1.2 quarts/acre ² DO NOT USE on sand or loamy sand soils
Cotoran, generic fluometuron	2 pints/acre DO NOT USE on coarse soils
Warrant	3 pints/acre
Reflex ⁴ , generic fomesafen	1 pint/acre DO NOT USE on coarse soils
Staple LX, generic pyriithobac	2 fl oz/acre DO NOT USE on coarse soils
Brake	16 fl oz/acre DO NOT USE on coarse soils

¹ For optimal weed control, a two-pass incorporation system should be utilized with the dinitroaniline herbicides.

² Rate dependent on soil type. Always consult the label prior to herbicide application.

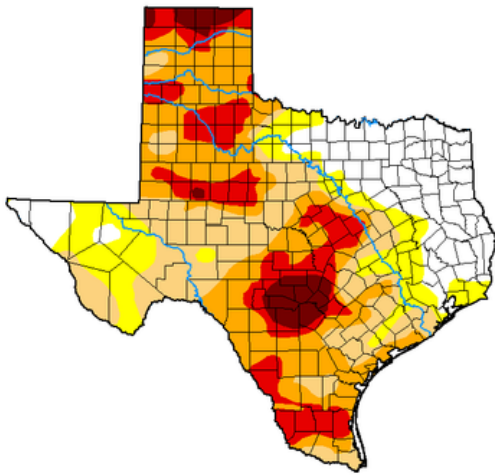
³ Preemergence herbicides will be most effective when activated by irrigation or rainfall events.

⁴ Reflex may be applied at 1 pt/acre immediately after planting of cotton provided that 0.5 inch of irrigation is applied prior to cotton cracking the soil surface. Do not apply more than 1 pt/acre of Reflex in any year.

DROUGHT COMPARISON

APRIL 4, 2023 VS. APRIL 5, 2022

U.S. Drought Monitor Texas



April 4, 2023
(Released Thursday, Apr. 6, 2023)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	19.10	80.90	66.89	45.25	18.98	4.19
Last Week 03-28-2023	19.12	80.88	67.24	46.39	17.33	3.78
3 Months Ago 01-03-2023	28.84	71.16	49.90	26.60	7.41	1.60
Start of Calendar Year 01-01-2023	28.84	71.16	49.90	26.60	7.41	1.60
Start of Water Year 09-27-2022	14.96	85.04	61.36	31.61	8.82	1.06
One Year Ago 04-05-2022	4.95	95.05	84.73	71.45	40.56	9.78

Intensity

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

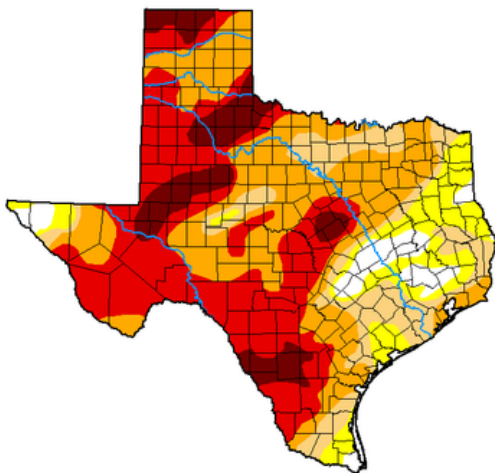
Author:
David Simerai
Western Regional Climate Center



droughtmonitor.unl.edu

There is no doubt we are in a drought. On my travels across the county, chatting with producers about the upcoming planting season and their plans, there is one thing in common... **we need rain!** To give a little glimpse of hope as you are making your decisions for this season, I pulled this drought data to see just how dry we are compared to last year and according to the map, we are better now than 1 year ago.

U.S. Drought Monitor Texas



April 5, 2022
(Released Thursday, Apr. 7, 2022)
Valid 8 a.m. EDT

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	4.95	95.05	84.73	71.45	40.56	9.78
Last Week 03-29-2022	4.90	95.10	88.22	70.79	42.10	7.03
3 Months Ago 01-04-2022	7.58	92.42	79.83	54.25	16.69	0.00
Start of Calendar Year 01-01-2022	7.58	92.42	79.83	54.25	16.69	0.00
Start of Water Year 09-26-2021	45.57	54.43	7.26	0.27	0.00	0.00
One Year Ago 04-06-2021	8.55	91.45	74.45	38.46	23.57	8.53

Intensity

None	D2 Severe Drought
D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to <https://droughtmonitor.unl.edu/About.aspx>

Author:
Deborah Bathke
National Drought Mitigation Center



droughtmonitor.unl.edu

HOW CAN I HELP YOU?

I field some calls every week on a variety of topics. This allows me to stay engaged with what's going on and I am able to learn something new every day. Is there something I can help you with? Please give me a call, send me a text, leave me a message, or catch me at the office.

NEED CEU'S?

Follow me on Facebook to see upcoming opportunities to gain CEU's.



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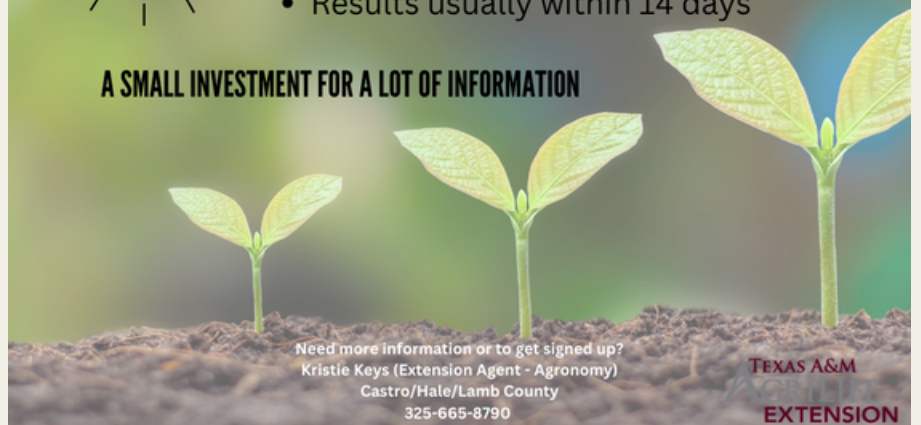


Need Soil Testing?



- Hydraulic sampling rig
- 0-6 & 6+ up to 24in
- Composite or individual samples
- Local soil lab (no shipping fees)
- Results usually within 14 days

A SMALL INVESTMENT FOR A LOT OF INFORMATION



Need more information or to get signed up?
Kristie Keys (Extension Agent - Agronomy)
Castro/Hale/Lamb County
325-665-8790

TEXAS A&M
EXTENSION



Last Chance!

Quick & Anonymous Survey

Copy and paste the link below.

<https://forms.gle/6JFkPC3RFmXodRZk9>

Find the link on the Facebook page or in your email if you are a subscriber!



<https://castro.agrilife.org/agronomy/>



<https://www.facebook.com/castrohalelambagronomy/>

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