Tri-Basin Irrigator

Volume 22, Issue 2 **May 26, 2022**

Program Information

EQIP: **Applications will continue to be pre-approved as funds become available. Signup anytime for 2023 funds.**

CSP: **CSP applications continue to be pre-approved as funds become available. Sign up anytime for 2023 funds.**

NSWCP: **New funds come July 1st for all conservation practices. To have first chance at irrigation practice approval, get your irrigation applications in by August 31st. Applications must be signed by the owner.**

ENERGY EFFICIENCY GRANT: **Sign-up deadline for 2023 funds is October 31, 2022. Rural Development is already accepting applications for this deadline. For more information contact Rural Development at the Kearney USDA Service Center at 308-455-9837.**

Calendar of Events

May 30: Memorial Day – Gov't offices closed
June 6: CNPPID Board of Directors Meeting
June 6: CNPPID 12 week irrigation run schedule starts
June 7: TBNRD Board Meeting
June 14: Flag Day

Tool to Determine Crop Water Use – Part 1

The **N**ebraska **A**gricultural **W**ater **M**anagement **N**etwork (**NAWMN**) is underway for the 2022 crop season across the Tri-Basin NRD. This network is a tool for participating and area producers to use when scheduling irrigations. The information gathered is used to determine how much soil moisture their crops are using. This information can be found on the website listed on page 3 under the "NAWMN Sites" portion of the section "Crop ET Information". If you get this via email, just click the links.

There are 6 weather stations within or neighboring the TBNRD where producers can get crop water use information. This NAWMN network adds 14 additional locations. See map on page 3. Having this information more localized allows producers to better determine what their crops are using for soil moisture. Unlike the weather stations, these sites allow producers to use their own crop stage of growth. Having these sites closer to a producer's fields and being able to use their own crop stages, this network serves as an excellent tool in determining crop water usage by field. Knowing your crop water use allows you to better schedule irrigations which can mean more money in the bank, water for future generations, prevent leaching of nitrates into the water supply, etc. etc.

On page 3 of each Tri-Basin Irrigator issue, information from the prior two weeks will be provided for all 14 sites. Because this newsletter is sent bi-weekly, it's highly recommended to use the websites for the most accurate and current information. The websites are updated by Tuesday of each week. Also, I will be emailing crop water use information from this network weekly to those who wish to receive it. In the next issue of this newsletter, an example of using this network will be provided.

If you have any questions, call Curtis Scheele at 308-995-6121, Ext. 3 or email to curtis.scheele@ne.usda.gov.

Curtis's Column

USDA United States Department of Agriculture
Natural Resources Conservation Service

Inflation – Dry Winter – Rains of Late
The Value of Soil Moisture Sensors?

Pivots have been running quite a bit this spring. Pivots make it so easy to do so many things. Prior to planting, they were running to develop a good seedbed for planting because it was so dry. Since then, we have had good rains. Pivots also run to activate fertilizer or chemicals. Some run to help get the crop up through a crust. Some may be filling their soil profile prepping for a predicted dry summer. In the future, they will run to apply fertilizer when the crops need it. A lot of good things can be done with pivots. On the other hand, pivots make it too easy to simply irrigate.

With pumping, fertilizer, wear, maintenance, and other costs, where does one go from here? Soil moisture sensors can play a valuable role in a year like this. With costs the way they are, I am not sure that eliminating soil moisture sensors is the answer.

There has been lots of talk this spring about how dry it is. So much so, that it's almost like treating irrigated land like dry land. One just kinda gets caught up in it. The surface was definitely dry but what about deeper into the soil profile. How much did one dry down the soil at crop seasons end last year? Do we really know how dry we were at crop maturity without sensors?

After irrigating this spring for planting, recent rains, and activating fertilizers or chemicals, do we really know where we are moisture wise? Are we full? Or has too much been added? How full is the profile now? The best way to know is with soil moisture sensors.

Soil moisture sensors will also help us this summer when we fertigate fertilizer through the irrigation system. How much water is being applied? Then catch a rain, hopefully. Will we know where we are at soil moisture wise? Can we make a good decision on if to irrigate or not? Can we wait til we fertigate again or maybe catch a rain? We use all kinds of technology to tell us what's going on above ground. Yet it seems we don't like technology to tell us what's going on below ground. I believe we can save water without hurting yield. We just need to start utilizing sensors and learn what they tell us just like we learn what other technology tells us.

To the right is a chart showing corn averages on two pivots in 2012, 2014, and 2016. All farming is equal except irrigation. 2 inches less water and equal yield.

	Pivot A	Pivot B
Water Applied (Inches)	13.1	11.2
Yield (Bushels)	254	255

Would you like daily ET Data texted to your cell phone?

Again in 2022, anyone can receive daily ET Data via a daily texting service. You can sign-up to receive these daily updates by texting START to 855-743-2457 or you can call the Tri-Basin NRD (308-995-6688) with your cell number and they will get you added. Daily (D) and Future 3 Days (F3d) estimated water use will be given for Corn and Soybeans (Beans) at three locations across the district: Holdrege 5N (Hld), Axtell 5NE (Axt) and Smithfield 2E (Smfld).
For additional information, see attached flyer.

CNPPID Notes

Scheduled Irrigation and Position Changes:

The 84 day scheduled irrigation season begins June 6th and runs through August 28th for the 2022 season. Central customers are scheduled 18" of water per acre for this year's irrigation season. This scheduled water is delivered to Central customers at a rate of 1.5" weekly or 3" bi-weekly depending on how the customer set up their desired irrigation schedule. Any irrigation prior or post to the scheduled irrigation season is deducted from their 18" per acre allotment.

2022 brought a few position changes in the irrigation department at Central Nebraska Public Power & Irrigation District. Jordan Browitt was hired to take over as Irrigation Service Specialist for patrol 34, which is located from Axtell to Minden on the north side of Highway 6 & 34. Dallas Roemmich, the previous ISS on patrol 34, moved to a maintenance position in the Bertrand office. The maintenance position in the Bertrand office opened up after Jay Johnson moved to the Gothenburg office to take on the role as the new Hydro Mechanical/Electrical Specialist.

Central continues to work on the cleanup of their canals, pipeline fixes, pump site installs/fixes, etc. to ensure timely and efficient delivery of surface water for irrigation to their customers.

Visit www.cnppid.com or follow @CNPPID on Facebook, Instagram and Twitter for updates throughout the year.

Tri-Basin NRD News

Check Flowmeters Before Starting Irrigation

Producers, please check the flowmeters on your wells before starting irrigation this season. Make a note of the meter reading at the beginning of the season, to make sure it matches the reading from the end of last season. Checking the meter periodically throughout the season to make sure it is working properly benefits both Tri-Basin NRD and you, the irrigator, so that you can keep accurate irrigation records. It is the responsibility of the producer to make sure the flowmeter is functioning properly during the irrigation season.

It has also come to our attention that producers who have **Senninger brand flowmeters** may want to make sure the batteries they are using are the correct size. **These meters take lithium 3.6-volt batteries, NOT standard 1.5-volt AA batteries.** Using standard AA batteries will cause these flowmeters to not work properly.

Nebraska Extension Extras

Managing Grass, Cattle & Crops – June 2:

Two "**Managing Grass, Cattle and Crops -** post drought and wildfire recovery" (Question/Answers) sessions have been scheduled for **Thursday, June 2, 2022.** The first session will begin at **1:30 p.m.** in the Commons Area at Arapahoe High School – 610 Walnut Street, **Arapahoe, NE** (enter on the south side). Then, a second session will follow at **4:00 p.m.** in the 4-H & Community Building on the Harlan County Fair Grounds **– Orleans, NE.**

Nebraska Extension representatives available for Q&A and one-on-one consultation include: Jerry Volesky – Ext. Range & Forage Specialist; Randy Saner– Ext. Educator (Beef Systems); Brent Plugge – Ext. Educator (Beef Systems); & Todd Whitney – Ext. Educator (Cropping Systems). Info: Todd Whitney – 308-995-7272.

Keep Irrigation System Insurance Values Current:

Irrigation system owners are reminded to update irrigation insurance system replacement values, since replacement costs have over doubled compared to last year. Many irrigators were surprised after windstorms (tornadoes) and wildfires caused havoc on their center pivots what repairs & replacement parts now cost. Also, check if your pivot insurance will protect to full replacement values or pay upon current depreciated values.

UNL Weed Management Field Day – June 29:

The Nebraska Extension South Central Weed Management Field Day at Clay Center will be **Wed., June 29, 2022** from 9:00 a.m. to 1:00 p.m.

On-site demonstrations of new technology and new herbicides for corn, soybeans and sorghum will be highlighted during the morning tour. Amit Jhala, UNL Weed Specialist, says that iGrowth, INZEN sorghum, XtendFlex soybeans and Enlist corn and soybeans will be new technology features.

There is no cost to attend the field day; however, pre-registration is appreciated. http://agronomy.unl.edu/fieldday The UNL South Central Ag Lab (near Clay Center) is located 13 miles east of Hastings on Highway 6. GPS coordinates for the field day are 40.57539, -98.13776

Sulfur Needs for Soybeans and Corn:

Yellowing plant leaves (chlorosis) can indicate many different nutrient deficiencies. Nitrogen deficiency (needed in largest amounts by crops - behind hydrogen, oxygen and carbon), has been attributed with yellow leaves. However, iron, magnesium, molybdenum, zinc, manganese, copper and sulfur deficiencies can also cause varied yellowing leaves on plants.

Sulfur is now receiving more focus especially when growers want higher yielding soybeans. Our Nebraska Extension EC155 publication, "Nutrient Management for Agronomic Crops of Nebraska" outlines visual deficiency symptoms for each nutrient. When comparing nitrogen and sulfur deficiency, the biggest difference is that nitrogen deficiency is most notable on the older lower leaves first. Whereas, sulfur deficiency first appears on the upper leaves (new growth).

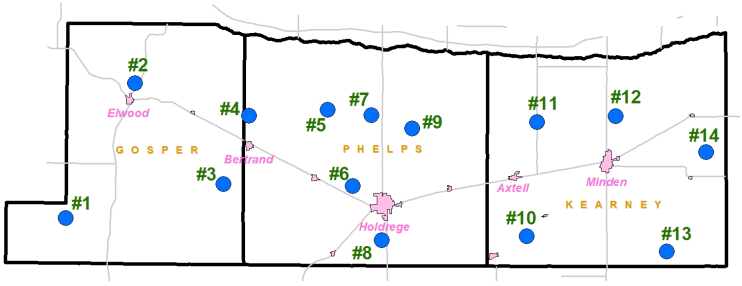
In the past, sulfur deficiency was mostly associated with lower organic matter and coarse (sandy soils). And, when sulfur soil tests values pegged 30 lbs. per acre or higher, then supplemental sulfur was not recommended. Higher yield goals for crops such as soybeans has shifted this recommendation.

NAWMN Crop ET Information

Additional Information and other ET resources can be found at websites listed under "Crop ET Information" below.

Inches of Crop Water Use (ET) = Evaporation x Kc

	May 9 – May 15		May 16 – May 22	
Site	Evaporation	Rain	Evaporation	Rain
1	NA	NA	NA	NA
2	NA	NA	NA	NA
3	NA	NA	NA	NA
4	NA	NA	NA	NA
5	NA	NA	NA	NA
6	NA	NA	NA	NA
7	NA	NA	NA	NA
8	NA	NA	NA	NA
9	NA	NA	NA	NA
10	NA	NA	NA	NA
11	NA	NA	NA	NA
12	NA	NA	NA	NA
13	NA	NA	NA	NA
14	NA	NA	NA	NA



2022 Map of NAWMN Sites across the Tri-Basin NRD.

Crop Coefficients (Kc)

Corn Stage	Kc	Soybeans Stage	Kc
2 leaf	0.10	Cotyledon (VC)	0.10
4 leaf	0.18	1st Node (V1)	0.20
6 leaf	0.35	2nd Node (V2)	0.40
8 leaf	0.51	3rd Node (V3)	0.60
10 leaf	0.69	Beg. Bloom (R1)	0.90
12 leaf	0.88	Full Bloom (R2)	1.00
14 leaf	1.01	Beg. Pod (R3)	1.10
16 leaf	1.10	Full Pod (R4)	1.10
Silk – Beg. Dent	1.10	Beg. Seed (R5)	1.10
¼ Milk Line	1.04	Full Seed (R6)	1.10
Full Dent (½ Milk)	0.98	Yellow Leaf (R6.5)	1.00
¾ Milk Line	0.79	Beg. Mat. (R7)	0.90
Black Layer	0.60	Full Mat. (R8)	0.20
Full Maturity	0.10	Mature	0.10

Crop Stage Information

Corn (Planted to V4-4 Leaf stage): Hail, wind, or frost that damages the exposed leaves at the 3-leaf stage have little or no effect on yield due to the below ground growing point.

Avg. daily water use from May 16 – May 22 was 0.00"-0.02".

Soybeans (Planted to VC-Cotyledon stage): Loss of one cotyledon has little affect on yield while loss of both can reduce yields by 8-9%.

Avg. daily water use from May 16 – May 22 was 0.00"-0.02".

May 16-May 22 (0 of 14 NAWMN sites reporting): Average weekly rainfall was NA (range NA to NA). Average weekly ET for corn was NA and for soybeans was NA.

Crop ET Information

NAWMN Sites: https://nawmn.unl.edu/ETdata/DataMap
CropWatch: https://cropwatch.unl.edu/gdd-etdata
TBNRD: https://www.tribasinnrd.org/waterwater-quantity/irrigation-water-management
CNPPID: https://www.cnppid.com/weatheret-data/
Texting: TBNRD: 308-995-6688 or UNL: 308-995-4222
Email: CNPPID: 308-995-3555

CORN STAGE		DESCRIPTION
V2	2 Leaves	Leaf stage is defined by number of leaves with visible collars. The collar is a discolored line where the leaf meets the stalk. This line circles the stalk. TIP: Mark the 6th leaf or a higher leaf by cutting a notch in it or some other way so as to know that leaf number. Reason is the lower leaves will be lost as the plant develops. Flag or somehow mark the plant in the field as a reference plant when determining later leaf (vegetative) stages.
V4	4 Leaves	
V6	6 Leaves	

SOYBEAN STAGE		DESCRIPTION
VC	Cotyledon	Shortly after emergence. Cotyledons and unifoliate leaves are unfolded. (1 node)
V1	First Node	One trifoliate leaf has 3 leaflets. V1 is the first trifoliate leaf with unrolled or unfolded leaflets. Leaflet edges are no longer touching. (2 nodes = 1 unifoliate + 1 trifoliate)
V2	Second Node	V2 has 2 nodes on main stem, each with a trifoliate leaf with unfolded leaflets. Plant as 3 nodes total: 1 unifoliate + 2 trifoliates

Lake and River Levels

CNPPID Reservoir Elevation and Platte River Flow data listed below and other locations can be found on CNPPID's website at *http://cnppid.com/wp-content/uploads/2016/06/lakeRiverData.html*.

	May 26, 2022, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	66.8%	NA
Inflows to Lake McConaughy	507 cfs	1170 cfs
Flows on the North Platte at North Platte	429 cfs	433 cfs
Flows on the South Platte at North Platte	151 cfs	995 cfs
Flows on the Platte at Overton	1170 cfs	1620 cfs

Happy Memorial Day!

Websites of Interest

NRCS Nebraska	*www.ne.nrcs.usda.gov*
Farm Service Agency	*www.fsa.usda.gov*
TBNRD Home Page	*www.tribasinnrd.org/*
Central Irrigation District	*www.cnppid.com/*
UNL Cropwatch	*cropwatch.unl.edu*
UNL Extension	*extensionpubs.unl.edu/*
K-State SDI Website	*www.ksre.ksu.edu/sdi*
No-till On The Plains	*www.notill.org*
Soil Health:	*www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/*
NE State Irrig Assoc	www.nebraskastateirrigationassociation.org/

Rainfall

Rainfall amounts listed below and other locations come from NeRAIN which can be found at website *https://nednr.nebraska.gov/NeRain/Maps/maps*.

Location:	May 12 – May 25	May 1 – May 25
Elwood 0.26 mi. S:	0.98	3.41
Bertrand 6.1 mi. SE:	1.25	4.51
Holdrege 0.99 mi. E:	1.33	3.21
Minden 7.2 mi. W:	1.55	2.97
Minden 5.8 mi. E:	1.33	2.93

Average Rain for May in Holdrege = 4.06 Inches

**** If you wish to receive this newsletter via e-mail, or have any questions, comments or ideas, feel free to contact Curtis Scheele at the NRCS office in Holdrege or you can email him at curtis.scheele@usda.gov. ****

USDA - Natural Resources Conservation Service

USDA United States Department of Agriculture
Natural Resources Conservation Service

1609 Burlington Street
PO Box 798
Holdrege, NE 68949-0798
308-995-6121, Ext. 3

309 Smith Street
PO Box 41
Elwood, NE 68937-0041
308-785-3307, Ext. 3

1005 South Brown Street
Minden, NE 68959-2601
308-832-1895, Ext. 3

Central Nebraska Public Power & Irrigation District

CENTRAL Nebraska Public Power and Irrigation District

415 Lincoln Street
PO Box 740
Holdrege, NE 68949
308-995-8601

Tri-Basin Natural Resources District

Tri Basin Natural Resources District

1723 Burlington Street
Holdrege, NE 68949
308-955-6688

Nebraska Extension

N EXTENSION

1308 2nd Street
Holdrege, NE 68949

308-995-4222

PO Box 146
Elwood, NE 68937

308-785-2390

424 North Colorado
PO Box 31
Minden, NE 68959
308-832-0645

Free

ET Data

Texting Service

A texting service for ET Data is replacing the Water Use Hotline.

You can opt-in to receive updates by texting **START** to **855-743-2457**. You can also call the Tri-Basin NRD (308-995-6688) to request to be added to the ET Data texting.

ET Data (Evapotranspiration Data) can be useful in making decisions about your irrigation, fertilizer and chemical application schedule. Texts are sent Monday through Friday during irrigation season. The texts contain:

Daily (D) and Future 3 Days (F3d) estimated water use for both Corn and Soybeans (Beans) at three locations across the district: Holdrege 5N (Hld), Axtell 5NE (Axt) and Smithfield 2E (Smfld).

Text: START

To: 855-743-2457

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EXTENSION

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