Gri-Basin Irrigator

Volume 22, Issue 6

PROGRAM INFORMATION

EQIP: APPLICATIONS WILL CONTINUE TO BE PRE-APPROVED AS FUNDS BECOME AVAILABLE. SIGNUP ANYTIME FOR 2023 FUNDS.

CSP: RENEWAL APPLICANTS ARE BEING INTERVIEWED IN PREPARATION FOR ASSESSMENT AND RANKING. SIGN UP ANYTIME FOR 2023 FUNDS.

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

ENERGY EFFICIENCY GRANT: SIGN-UP DEADLINE FOR 2023 FUNDS IS OCT. 31, 2022. RURAL DEVELOPMENT IS ALREADY ACCEPTING APPLICATIONS FOR THIS DEADLINE. FOR MORE INFORMATION CONTACT JOLENE JONES AT RURAL DEVELOPMENT AT THE KEARNEY USDA SERVICE CENTER AT 308-455-9840.

CALENDAR OF EVENTS

JULY 24-28: PHELPS COUNTY FAIR JULY 26-30: GOSPER COUNTY FAIR JULY 29-AUG 1: KEARNEY COUNTY FAIR AUG 1: CNPPID BOARD OF DIRECTORS MEETING AUG 9: TBNRD BOARD MEETING

Charts from Article on Right Side of Page

Brown Pivot



Green Pivot



CURTIS'S COLUMN

United States Department of Agriculture

Save an Irrigation or Two without Sacrificing Yield:

I want to show you irrigation field demo information for 3years of corn in the years of 2012, 2014, and 2016 on Holdrege Silt Loam soil.

A little background on the demo is that there are two pivots side-by-side. One pivot titled Brown and the other Green. Both are farmed the same all the way through. The only difference between the two, is how they are managed for irrigation.

See Table 1 for the results of the field demo. Basically, the Green pivot out-performed the Brown pivot with less pumping, more bushels, and more soil moisture utilized to a 4-foot depth.

Table 1	Brown	Green	Green Benefit
Water Applied (Inches)	13.1	11.2	1.9 in. water less pumped
Rainfall (Inches)	11.4	11.7	0.3 in. more rain
Yield (Bushels)	254	255	1 extra bushel
Year End Moisture	79% (- 2.0 ln)	66% (- 3.2 ln)	1.2 in. more soil moisture utilized

From the results shown in Table 1, how did this get accomplished? On the left side of this page are two charts, one for the Brown pivot and the other for the Green pivot. On the charts, the black line is the average to a 4-foot depth. These numbers are based on a 4-foot depth. Sorry for the small charts, but I will try to summarize them.

Brown Pivot:

- Soil moisture utilized done to 73% moisture (-2.5") until 1 week <u>prior to</u> silking.
- From 1 week <u>prior to</u> silking, increased soil moisture levels to an average of 95% moisture (-0.5") until ³/₄ milk line.
- Started to utilize soil moisture at seasons end at ³/₄ milk line, average date of September 5th.
- Started increasing moisture levels 2 weeks prior to the Green pivot.
- 8 weeks of 95% moisture levels.
- 2 weeks of dry down at seasons end.

Green Pivot:

- Soil moisture utilized done to 65% moisture (-3.2") until 1 week <u>after</u> silking.
- From 1 week <u>after</u> silking, increased soil moisture levels to an average of 85% moisture (-1.4") until ¹/₄ milk line.
- Started to utilize soil moisture at seasons end at ¼ milk line, average date of August 22nd.
- Started increasing moisture levels 2 weeks after the Brown pivot.
- 4 weeks of 85% moisture levels.
- 4 weeks of dry down at seasons end.

July 21, 2022

CNPPID NOTES



Aquatic Weed Treatment:

Aquatic weeds, such as filamentous algae, moss, and sago pondweed, can make delivering surface water through a canal system difficult without using chemical treatments throughout the irrigation season to control the aquatic weed growth.

Central's irrigation division is constantly on the lookout for these aquatic weeds to treat before they grow and hinder the delivery of surface water for irrigation. Filamentous algae and moss start as hair like strands that grow toward the water's surface, eventually forming floating mats on the water's surface.

Sago pondweed is a bottom rooted aquatic weed that grows up towards the water's surface and grows very thick, which can eventually stop the movement of water. These aquatic weeds can break off and plug the screening of the irrigation delivery point, stopping the flow of water to the irrigation system.

Treatment of these aquatic weeds is expensive; the cost of the chemicals can range from \$30 to \$80 per gallon. Chemicals are applied by gravity drippers, injection pumps, slug treatment, or surface sprayed. All of the chemicals Central uses to control aquatic weeds are state approved and labeled to be safe for irrigation, crops, environment, etc.

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Tri-Basin NRD News

Time to Take a Water Sample



If you have a field in Phase II or Phase III Groundwater Quality Management Area (map below), you are required to sample your irrigation water and test it for nitrates every year. It is important to collect the water samples once you start irrigating. Take the sample after the well has been running for a while, so you have accurate results.

The results from the samples you take this irrigation season will be used in nitrogen planning for next year's crop and reported on your 2023 Nitrogen Management Crop Report. Sample bottles are available at Tri-Basin NRD or NRCS offices.



ET Data Texts: To enroll text ETDATA to 80123

NEBRASKA EXTENSION EXTRAS

2022 Soybean Management Field Days (Aug. 9 – 12):

Nebraska Extension Soybean Management Field Days will be at four locations: Aug. 9 – Blue Hill (Toepfer Farms); Aug. 10 – Central City (Greg Greving); Aug.11 – Brownville (Daryl Obermeyer); and Aug. 12 - Decatur, NE (Method Farm). Program runs 9:30 am – 2:30 pm with complimentary lunch. This free event is sponsored by the Nebraska Soybean Board with demonstrations & focused features. Topics will include: Irrigation Management; Weed Management; Ag Economics; Precision Ag; and Biodiesel & Renewable Diesel from farm fuels. Media and registration links include:

https://twitter.com/NebraskaSMFD;

<u>https://www.facebook.com/SoybeanManagementFieldDays</u> https://extension.unl.edu/statewide/enre/2022SMFDFlyer.pdf

2022 WC Research & Extension Field Day (Aug. 25):

The Annual West Central Research & Extension Crops Field Day is scheduled for **Thur., Aug. 25** from 8:00 a.m. – 4:00 p.m. in North Platte. This free event offers participants two tracts of interest: Critical Issues in Ag OR Soil Health Please register at: <u>https://extension.unl.edu/statewide/westcentral/2022-water-andcrops-field-day-registration/</u>

Useful to Usable (U2U) – Corn Maturity Projection:

The Midwest Regional Climate Center provides several free online decision tools based on a 30-year historical data pool. Nebraska Extension is among the 11-states in the Midwest Region providing the Corn Growing Degree Day (GDD) decision tool. 30-year average and year-to-year comparison can be used to make decision regarding: climate risk; activity planning and/or marketing. To access this free online Corn GDD Tool click: <u>https://hprcc.unl.edu/agroclimate/gdd.php</u>. For county specific data, click on your Nebraska county using the MRCC state map.

Below is an illustration using a Phelps county corn field planted on May 10, 2022 with a 114 days maturity hybrid. The projected black layer full maturity (2740 GDD's) date is Sep. 21st In comparison, the same field planted on May 10 last year reached black layer on Sep. 18 and likely would have black layered in 2021 on Sep. 26.



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

	July 4 – July 10		July 11 – July 17	
Site	Evaporation	Rain	Evaporation	Rain
1	2.40	0.30	2.60	0.45
2	1.80	1.25	2.10	0.05
3	1.40	0.98	2.10	0.18
4	1.90	1.44	2.00	0.00
5	1.25	1.40	1.85	0.02
6	1.80	1.34	2.00	0.58
7	1.80	1.76	2.00	0.45
8	1.80	0.80	2.10	0.47
9	1.60	1.04	1.80	0.94
10	1.70	0.98	1.60	0.48
11	1.60	0.74	2.20	0.45
12	2.00	0.71	2.10	0.12
13	1.40	1.80	2.20	0.20
14	1.60	1.35	2.30	0.32



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

Beginnin

R4

Crop Coefficients (Kc)			
Corn		Soybeans	
Stage	Kc	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
1/4 Milk Line	1.04	Full Seed (R6)	1.10
Full Dent (½ Milk)	0.98	Yellow Leaf (R6.5) 1.00
³ / ₄ 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 (V16-16 Leaf to R1-Silking stage): These stages do not reflect replants. Silking is the peak water use stage for corn. Environmental stress at this time needs to be avoided. Avg. daily water use from July 11 - July 17 was 0.28"-0.41".

Soybeans (R2-Full Bloom to R3-Beginning Pod stage): These stages do not reflect replants. Environmental stress from R3 through R6 (Full Seed) will reduce yield more than any other time.

Avg. daily water use from July 11 - July 17 was 0.26"-0.41".

July 11-July 17 (14 of 14 NAWMN sites reporting): Average weekly rainfall was 0.34 (range 0,00 to 0.94). Average weekly ET for corn was 2.24 and for soybeans was 2.17.

CROP ET INFORMATION

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

COI	RN STAGE	DESCRIPTION	
R1	Silking	Begins when any silks are visible outside the husks.	
R2	Blister	The kernels are white on the outside and resemble a blister in shape. The cob should be close to, if not, at full size by R2. The silks are beginning to dry out and darken in color.	
R3	Milk	The kernels display a yellow color on the outside. Inner fluid is milky white. Silks are brown and dry or becoming dry.	
SOYE	BEAN STAGE	DESCRIPTION	
R2	Full Bloom	At least one open flower is present at any one of the two uppermost main stem nodes that have fully developed leaves.	
R3	Beginning Pod	At least one pod of 3/16" length is present at any one of the four upper most main stem nodes that	

ginning Pod	have a fully developed leaf. It is not uncommon to see longer pods at the lower nodes.
Full Pod	At least one pod of 3/4" length is present at one of the four upper most main stem nodes that have

fully developed leaves.

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 <u>http://cnppid.com/wp-</u>

content/uploads/2016/06/lakeRiverData.html.

	July 21, 2022, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	51.0%	NA
Inflows to Lake McConaughy	188 cfs	381 cfs
Flows on the North Platte at North Platte	1320 cfs	250 cfs
Flows on the South Platte at North Platte	71 cfs	155 cfs
Flows on the Platte at Overton	206 cfs	497 cfs

I'm glad it's finally hot enough to complain about how hot it is. - Anonymous

WEBSITES OF INTEREST

NRCS Nebraska
Farm Service Agency
TBNRD Home Page
Central Irrigation District
UNL Cropwatch
UNL Extension
K-State SDI Website
No-till On The Plains
Soil Health:

www.ne.nrcs.usda.gov www.fsa.usda.gov www.tribasinnrd.org/ www.cnppid.com/ cropwatch.unl.edu extensionpubs.unl.edu/ www.ksre.ksu.edu/sdi www.notill.org

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:	July <u>7 – July 20</u>	<u> May 1 – July 20</u>
Elwood 0.26 mi. S:	0.12	7.81
Bertrand 6.1 mi. SE:	0.36	8.68
Holdrege 0.99 mi. E:	1.25	8.77
Minden 7.2 mi. W:	0.26	7.85
Minden 5.8 mi. E:	0.27	7.55

Average Rain for May-July in Holdrege = 11.32 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. ***



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