

Tri-Basin Irrigator

Volume 19, Issue 1

May 23, 2019

PROGRAM INFORMATION

EQIP: FUNDS FOR 2019 CONTRACTS HAVE BEEN PRE-APPROVED OR OBLIGATED. SHOULD SLIPPAGE FUNDS BECOME AVAILABLE, WE CAN POSSIBLY FUND ADDITIONAL APPLICATIONS. APPLICATIONS FOR 2020 FUNDING CAN BE TAKEN ANYTIME AT YOUR NRCS OFFICE. THE SIGN-UP CUTOFF DATE FOR 2020 FUNDS HAS NOT BEEN SET YET. IT'S USUALLY IN NOVEMBER. I RECOMMEND SIGNING UP PRIOR TO HARVEST SO AS NOT TO FORGET DURING THAT BUSY TIME. APPLICATIONS NEED TO BE IN THE NAME OF THE APPLICANT THAT WOULD RECEIVE THE EQIP FUNDS.

CSTWP: 2019 APPLICANTS ARE CURRENTLY BEING INTERVIEWED AND RANKED. RANKING DEADLINE IS JUNE 21ST. FOR 2020 FUNDS, APPLICATIONS CAN BE TAKEN AT ANYTIME. THE SIGNUP CUTOFF DATE IS USUALLY IN THE SPRING.

NSWCP: NSWCP FUNDS ARE APPROVED MONTHLY FOR FLOW METER ONLY AND SOIL MOISTURE SENSOR APPLICATIONS. ALL OTHER IRRIGATION APPLICATIONS FOR UNDERGROUND PIPE, SURGE VALVES, ETC. ARE REVIEWED FOR FUNDING 4 TIMES A YEAR, SEPTEMBER, DECEMBER, FEBRUARY, AND MAY (FOR SLIPPAGE). NEW FUNDS COME JULY 1ST SO GET YOUR IRRIGATION APPLICATIONS IN BY AUGUST 31ST IN ORDER TO HAVE FIRST CHANCE AT THE NEW FUNDS IN SEPTEMBER. APPLICATIONS MUST BE SIGNED BY THE OWNER. INSTALLATION WORK CANNOT BE STARTED UNTIL APPROVED. - AS A SIDE NOTE, ALL NON-IRRIGATION APPLICATIONS ARE APPROVED MONTHLY.

ENERGY EFFICIENCY GRANT: SIGN-UP DEADLINE FOR 2019 FUNDS HAS PASSED FOR IMPROVEMENTS TO IRRIGATION SYSTEMS SUCH AS CONVERTING GRAVITY SYSTEMS TO PIVOTS OR SDI, AND NATURAL GAS/PROPANE/DIESEL ENGINES TO ELECTRIC MOTORS, WELL REBOWLS, ETC. APPROVALS WILL TAKE PLACE THIS SUMMER. IF YOU HAVE A COMPLETED APPLICATION ON FILE AT YOUR RURAL DEVELOPMENT OFFICE, YOU CAN START YOUR PROJECT IF YOU WANT TO, YOU ARE JUST TAKING THE RISK OF NOT BEING FUNDED. IF NOT APPROVED BY SEPTEMBER 30, 2019, THEN YOU WILL NOT RECEIVE ANY FUNDING ASSISTANCE. NEXT SIGNUP DEADLINE WILL BE OCTOBER 31, 2019 FOR 2020 FUNDING. RURAL DEVELOPMENT IS ALREADY ACCEPTING APPLICATIONS FOR THIS DEADLINE. FOR MORE INFORMATION CONTACT KELLEY AT RURAL DEVELOPMENT AT THE KEARNEY USDA SERVICE CENTER AT 308-445-9837 OR KELLEY.MESSENGER@USDA.GOV.

CALENDAR OF EVENTS

MAY 27: MEMORIAL DAY - GOV'T OFFICES CLOSED
JUNE 3: CNPPID BOARD OF DIRECTORS MEETING 9 AM
JUNE 10: CNPPID 12 WEEK IRRIGATION RUN SCHEDULE STARTS
JUNE 18: TBNRD BOARD MEETING 1:30 PM - **NOTE: THIS IS A WEEK LATER THAN THE REGULAR MONTHLY SCHEDULE OF THE 2ND TUESDAY OF THE MONTH.**

REMINDER: Soil Moisture Sensors!

Get your soil moisture sensors installed early especially if they are required for an EQIP or CSP contract.

CURTIS'S COLUMN



Tri-Basin Irrigator: Going Strong in its 15th Year!!!:

The Tri-Basin Irrigator has been a staple across the Tri-Basin NRD since 2005. It has even trickled into areas neighboring the NRD as well as further places. Now starting its 15th season, there is no sense in changing a good thing. At least, that's the feedback I get. Numerous comments have been received over the years that have been very supportive and positive for this newsletter. I have tweaked it along the way but try to stay with my main goal. That is to provide you with irrigation and other related information across the NRD that is short and to the point. Hopefully, you will benefit from the information provided.



Hello. My name is Curtis Scheele. I am the Water Management Specialist with the NRCS covering Gosper, Phelps, and Kearney counties. My office is located in Holdrege. See page 4 for my contact information. I would like to welcome those of you who will be receiving the Irrigator for your first year as well as those who have received it in the past. Again, it will be sent bi-weekly during the course of the crop season.

Archived copies from 2016 to present are available on the Tri-Basin NRD's website at http://www.tribasinnrd.org/tb_irrigator.html.

Tri-Basin Irrigator via EMAIL
saves paper, postage, & time AND it
provides you with links to valuable
websites!

If you would like to receive this newsletter via email,
please provide me with your email address. Call me
at 308-995-6121, Ext. 3, call your local NRCS office
(see contact info. on page 4), or you can email me at
curtis.scheele@usda.gov.

Tillage destroys Soil Structure:

Soil structure is basically the arrangement of the solid soil parts and the pore spaces that make up the soil profile. This arrangement defines a healthy soil structure or a poor soil structure. Tillage removes the pore spaces and destroys the soil aggregates that make for a strong soil structure. Tillage results in a weak pile of soil that I call mush.

This mush has the following characteristics:

- No habitat for microorganisms and earthworms, thus the loss of the many benefits they provide
- Rapid decay of valuable organic matter
- Compaction preventing root depth and water infiltration
- Increased erosion losing valuable nutrients
- Crusting causing poor crop emergence, water infiltration, and runoff
- More time to get into a wet soggy field

Practices such as no-till, cover crops, and crop rotation can improve soil structure. Goto <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/> for additional soil health information.

Spring 2019:

Who ordered this weather?

Lake McConaughy is 7.8' from full pool and has 228,300 AF of storage remaining. Currently, Central is running water for irrigation canal fill and power out of McConaughy; inflows and outflows nearly match. The retained storage space in the lake can hold a potential spill from the WY Reclamation reservoirs as snowmelt comes off the mountains or potential rainfall events downstream of Pathfinder Reservoir while the Glendo and Guernsey Reservoirs are full. This makes best use of the basin water and also provides incidental flood protection for Nebraska. Another word about basin flood protection; a very significant but sometimes forgotten flood benefit for Nebraska is due to the design of the outflow structure at Lake McConaughy. Releases from the lake are always water; never ice, as the outflow comes from the bottom of the lake. Ice flow in the Niobrara basin this spring was a terrible reminder of how fortunate we are to have Lake McConaughy cutting off the ice flow out of WY and the NE Panhandle in the Platte Basin.

In the Tri-County area, completing and dressing remaining winter construction projects and work to clean and shape the canals has been hampered by a cold, snowy winter and now a wet spring, but all off-season work will be completed before irrigation begins. We have two new Irrigation Service Specialists (ISS) on the Phelps Canal for 2019. ISS Niles Buettner is replacing Shon Anderson on Patrol 26 and ISS Corey Ellis is replacing Paul Eberle on Patrol 32. Paul has taken a new position as an equipment operator; you will see him in a machine this summer.


 TRI-BASIN NRD NEWS
**Chemigation Permit Renewals Due June 1:**

Chemigation, the practice of applying agricultural products such as fertilizers, herbicides, and insecticides through a pivot irrigation system, can be a highly effective means of chemical or fertilizer application.

By state law, anyone who wants to apply fertilizer or ag chemicals through their irrigation system needs to apply for a chemigation permit for the 2019 season. Chemigation renewal forms have been sent to producers and are due, along with payment, in the Tri-Basin NRD office by June 1, 2019. Renewal permits are \$15 each.

Landowners and operators should contact Tri-Basin NRD toll-free at 1-877-995-6688 regarding new chemigation permits. New permits are \$50 each. All newly permitted chemigation systems must be inspected before use. A person who is certified as a chemigation applicator must supervise injection of fertilizer and ag chemicals in irrigation water. If a chemigation system crosses an open waterway, such as an irrigation canal, an additional form must be completed before the permit can be approved.

NRD staff do routine inspections on chemigation systems from June until August. Routine inspections are required every three years. If your system is due for an inspection, you will receive a postcard this summer. Routine inspections must be completed for permits to be eligible for renewal the following year.

A more detailed explanation of the chemigation permitting process is available on our website at www.tribasinnrdr.org, under the Programs & Services tab.

Water Use Hotline Available:

The Nebraska Extension – Phelps-Gosper “Water Use Hotline” will again be available for irrigators from June 3 through Sep. 9, 2019 as a “free” service. Through the High Plains Regional Climate Center, Tri-Basin NRD and CNPPID; Extension will provide updated crop growth and water use calculations for corn, soybeans, wheat, grain sorghum and alfalfa from automated data collection sites.

Producers can assess this information by calling either: locally (308-995-2255) OR toll-free (1-800-993-2507).

Information can also be accessed through the web:

<http://www.cnppid.com>.

Five local Nebraska State Climate Office weather stations are included in the daily business day updates. Automated data stations will be as follows: Ragan 5W; Holdrege 5N; Lexington 4S; Axtell; and Smithfield 2E.

2019 Water Use Hotline corn growth stage water use values are based a May 16th emergence date; while soybean growth staging water use is based on a May 25th emergence date. Updated data includes: crop water use averages for 3-day; 1 week crop ET values; & accumulated Growing Degree Days (GDD's).

Hybrid Maturity Decisions:

Planting progress varies greatly among crop producers this season, and those needing to plant many corn acres may be considering switching hybrid maturities. Roger Elmore, Nebraska Extension Cropping Systems specialist, advises growers to still not switch from full-season hybrids unless corn planting dates extend beyond late May or very early June.

Although UNL research has pegged the highest yields with full-season maturities planted in mid-May, corn hybrids may slightly adjust their relative maturity (growing degree day (GDD) needs based on planting dates. In Nebraska maturity yield studies, the medium season corn (97-105 days) hybrids did not yield more than full-season hybrids until planting dates shifted to early June. Short season corn maturity (80-86 days) hybrids pegged the lowest yields of all tested maturities when planted either mid-May or early June.

So, if corn yields will usually not increase by switching to earlier-maturing corn hybrids, what are some possible reasons why corn growers might consider changing hybrids? The primary reason for switching to medium maturity hybrids in late-May to early June might be to reduce risk for wetter grain moisture content in the fall. If producers lack grain drying capabilities or have contracted grain for earlier fall delivery, they may be willing to accept potentially lower yields versus staying with their original full-season hybrids.

Another consideration might be possible insect pressure from later European corn borer, corn earworm and fall armyworms. Therefore, corn hybrids with Bt (*Bacillus thuringiensis*) bred resistance may be recommended for later planted corn fields.

Later planted fields also run the risk of heat and drought stress during critical pollination, silking and grain fill periods. Other factors to consider may be timely weed control and fertilizer applications.

NAWMN CROP ET INFORMATION

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

$$\text{Inches of Crop Water Use (ET)} = \text{Evaporation} \times K_c$$

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
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

Site	Not Available		May 13 – May 19	
	Evaporation	Rain	Evaporation	Rain
1	NA	NA	NA	0.06
2	NA	NA	NA	0.14
3	NA	NA	NA	0.10
4	NA	NA	NA	NA
5	NA	NA	NA	NA
6	NA	NA	NA	NA
7	NA	NA	NA	0.07
8	NA	NA	NA	0.17
9	NA	NA	NA	NA
10	NA	NA	NA	NA
11	NA	NA	NA	NA
12	NA	NA	NA	0.36
13	NA	NA	NA	0.12
14	NA	NA	NA	0.15
15	NA	NA	NA	0.39
16	NA	NA	NA	0.50

CROP STAGE INFORMATION

Corn (Not Planted to V2-2Leaf 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 13 – May 19 was 0.00"-0.02".

Soybeans (Not 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 13 – May 19 was 0.00"-0.00".

May 13-May 19 (10 of 16 NAWMN sites reporting): Average weekly rainfall was 0.21 (range 0.06 to 0.50). Average weekly ET for corn was 0.05 and for soybeans was 0.00.

ET INFORMATION SITES

NAWMN Sites:

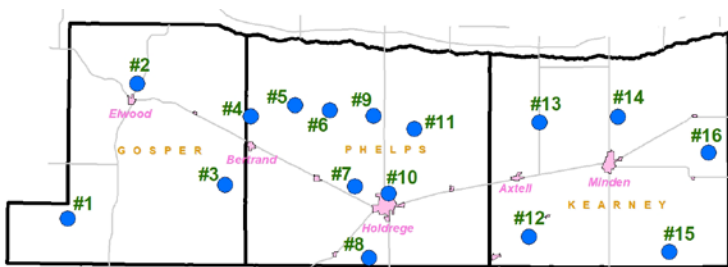
<https://www.cnppid.com/weatheret-data/nebraska-agricultural-water-management-network/>

<https://nawmn.unl.edu/ETdata/DataMap>

CropWatch: <https://cropwatch.unl.edu/gdd-etdata>

CNPPID: <https://www.cnppid.com/weatheret-data/>

Water Use Hotline: 1-800-993-2507



2019 Map of NAWMN Sites across the Tri-Basin NRD.

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)

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 23, 2019, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	87.2%	NA
Inflows to Lake McConaughy	1552 cfs	2575 cfs
Flows on the North Platte at North Platte	675 cfs	380 cfs
Flows on the South Platte at North Platte	554 cfs	499 cfs
Flows on the Platte at Overton	2487 cfs	2634 cfs

MEMORIAL DAY: Pay tribute to those who paid the price of freedom so you can live the life of freedom. A SALUTE to all who paid!



WEBSITES OF INTEREST

Soil Health:

www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/

Climate aqclimatenebraska.weebly.com
 NRCS Nebraska www.ne.nrcs.usda.gov
 Central Irrigation District www.cnppid.com/
 TBNRD Home Page www.tribasinrrd.org/
 Farm Service Agency www.fsa.usda.gov
 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

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 9 – May 22	May 1 – May 22
Arapahoe 9.8 NNE:	2.67	2.78
Bertrand 6.1 mi. SE:	1.90	2.18
Holdrege 0.99 mi. E:	2.32	2.67
Minden 7.2 mi. W:	0.99	2.12
Minden 5.8 mi. E:	1.91	2.75

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

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

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



Tri-Basin Natural Resources District

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



Nebraska Extension

1308 2nd Street
 Holdrege, NE 68949



PO Box 146
 Elwood, NE 68937

308-995-4222

308-785-2390

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

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