Tri-Basin Irrigator

Volume 20, Issue 9 **September 3, 2020**

Program Information

EQIP: **Contracts currently being written on pre-approved applicants. As additional funds become available, additional pre-approvals may take place.**

CSP: **New 2020 pre-approved applications are currently having contracts signed and submitted for official contract obligation. – Renewal applications will be assessed and ranked after October 1st.**

- **Not official but appears that sign-up deadline for 2021 funds in both EQIP and CSP will be Nov. 13, 2020.**

NSWCP: **Irrigation applications approved 4 times a year – September December, February, and May. Approvals in May is only if there is slippage money available.**

ENERGY EFFICIENCY GRANT: **Sign-up deadline for 2021 funds is October 31, 2020. For more information contact Kelley at Rural Development at the Kearney USDA Service Center at 308-455-9837 or *kelley.messenger@usda.gov*.**

Calendar of Events

Sept 7: Labor Day – Gov't offices closed
Sept 8: CNPPID Board of Directors Meeting
Sept 8: TBNRD Board Meeting
Sept 15-17: Virtual Husker Harvest Days. For more info, go to: *https://www.huskerharvestdays.com/en/home.html*

How Much Water did I Apply in 2020?

As irrigation season comes to an end, you can read your flow meters and calculate how much water was pumped in 2020. Flow meters vary as to their unit outputs (ac-in * 0.01, gallons * 100, etc.). Simply subtract your beginning year reading from the ending year reading to get gross water pumped. See chart below to convert units to inches. Gross inches pumped is used for allocations, irrigation reports, etc. You can multiply gross inches pumped by an efficiency factor to calculate net water applied to the crop.

How to Calculate Gross Inches Pumped

- Acre-Inches / Acres = Inches Pumped
- Gallons Pumped / 27,154 / Acres = Inches Pumped
- (Acre-Feet * 12) / Acres = Inches Pumped

How to Calculate Net Inches Applied to the Crop

Inches Pumped x Efficiency Factor* = Net Inches Applied

*Efficiency Factors
Subsurface Drip Irrigation = 0.95
Pivot - low pressure drops = 0.90
- med. & low pressure impacts = 0.85
- high pressure = 0.80
Surge Valve = 0.80
Gated Pipe - with reuse = 0.7
- without reuse = 0.5

Curtis's Column

USDA United States Department of Agriculture
Natural Resources Conservation Service

** CSP Participants **

Leaf Tissue Samples did not get done.
Still time to complete Stalk Tests.

If you did not complete your required Leaf Tissue Samples in a timely manner, you can still get paid for your nutrient enhancement by completing the Stalk Test. Here are the Stalk Test requirements.

- **--- 1 sample per 40 acres**
- **--- Samples must be taken 1-3 weeks after black layer has formed on 80% of the kernels**
- **--- A sample consists of fifteen 8-inch stalk segments taken 6 inches above the ground**
- **--- Send samples to a lab for analysis**
- **--- Provide the analysis reports to your local NRCS**

CSP and EQIP REMINDERS!!!

1. **Make an appointment at your local NRCS office to turn in your fertilizer, pesticide, irrigation, etc. records.**

Predicting Last Irrigation Chart

See the last issue of the Tri-Basin Irrigator for more information.

	Growth Stage	Approx. Days to Maturity	Water Use to Maturity
Corn	Dough (R4)	34	7.5"
	Beg. Dent (R4.7)	24	5.0"
	¼ Milk Line (R5)	19	3.75"
	½ Milk Line (Full Dent)	13	2.25"
	¾ Milk Line	7	1.0"
	Maturity (R6)	0	0.0"
Soy Beans	Full Pod (R4)	37	9.0"
	Beg. Seed (R5)	29	6.5"
	Full Seed (R6)	18	3.5"
	Leaves Beg. To Yellow (R6.5)	10	1.9"
	Beg. Maturity (R7)	0	0.0"

Last Irrigation???:

Corn: 1/2 Milk Line (Full Dent) - Holdrege Silt Loam
Needs 2.25 inches - Calculations to 4 feet of depth
Goal: 65% moisture at seasons end
90% Moisture: Done
80% Moisture: Needs 0.90 Inches
70% Moisture: Needs 1.80 inches
60% Moisture: Needs 2.70 inches

Soybean: Leaves begin turning yellow - Holdrege Silt Loam
Needs 1.90 inches - Calculations to 4 feet of depth
Goal: 65% moisture at seasons end
90% Moisture: Done
80% Moisture: Needs 0.55 Inches
70% Moisture: Needs 1.45 inches
60% Moisture: Needs 2.35 inches

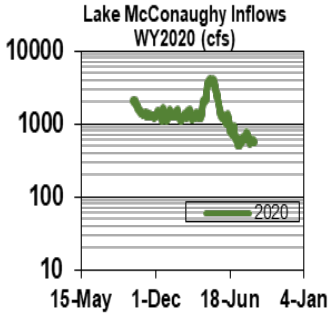
**** Recommendation is to apply part of the amount needed and reevaluate. I doubt you will need this much water. ****

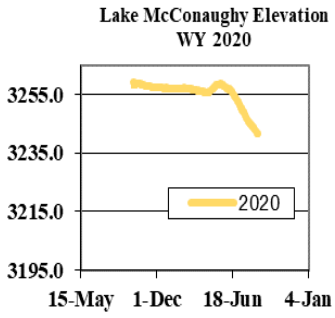
CNPPID Notes

Scheduled Irrigation Ending:

The scheduled irrigation season at Central Nebraska Public Power & Irrigation officially ends this week. Irrigation will continue with the drain down water as long as it lasts. The 2020 irrigation season seemed long compared to the last few years with the lack of rainfall. The 20-year average rainfall during the growing season (April 1st to September 30th) at the Holdrege rain gauge is 18.71". The 2020 irrigation season is currently at 9.74" of rainfall. We are still waiting for the remaining numbers to come in to figure water usage for this year, but we are anticipating it will be much higher than recent years, with 2018 using an average of 4.68" per acre and 2019 using an average of 3.80" per acre.

Lake McConaughy began the irrigation season on April 1st at 84.3% full and currently is at 62.5% full. The dry season with higher irrigation, lower inflows into the lake, and the environmental account using more of their water than the past few years, all factor into the lake drawing down. However, upstream reservoirs along the North Platte River in Wyoming are in good condition.





Find us at www.cnppid.com or @CNPPID on Facebook, Instagram, Twitter and LinkedIn.

Tri-Basin NRD News

Reminders Before Irrigation Season Ends:

Drain Your Chemigation Check Valve:
When you are preparing your irrigation systems for colder weather, remember to drain your main line check valve to prevent freezing. This will extend the life of the check valve and may help prevent check valve failure.

Water Samples:
If you have crop ground in Phase 2 or Phase 3 of Tri-Basin NRD's Groundwater Quality Management Area, remember to take irrigation water samples. The results you get this year will be used in completing your 2021 Nitrogen Management reports.

Reports due December 31, 2020, should record the results taken during 2019 irrigation season.

Year End Flow Meter Readings:
As the irrigation season winds down and you are picking up irrigation pipe or bedding down irrigation engines, it is time to record the ending meter readings for your Water Use reports.

Nebraska Extension Extras

Extension Land Management Webinar – Sept. 10:

"2021 Farmland Trends and Lease Considerations" will be the theme of a ***virtual*** Nebraska Extension Land Management webinar on **Thursday, Sept. 10,** from **Noon to 1:30 p.m.** This workshop will focus on new cash rental rate; USDA programs; land/tenant communication; flexible leasing & farm succession.

Featured Nebraska Extension Ag. Economist speakers will include: Jim Jansen; Austin Duerfeldt; and Allan Vyhnalek. Sub-topics will involve: Innovative strategies for establishing fair cash rental rates; equitable lease; and market price volatility.

This educational Zoom program is part of a **free** online weekly series by the Nebraska Extension Farm and Ranch Management / Ag. Economics team. Registration can be completed at: *https://farm.unl.edu/webinars*. For more information, contact Jim Jansen, Extension Ag Economist @ 402-472-2560 or *jjanse3@unl.edu*.

2020 Virtual West Central Extension Field Day:

The 2020 UNL West Central Research, Extension & Education Center's Annual Water & Crops Field Day was conducted *virtually* on Aug. 27. Topics included: Digital Farming/Robotics/Futurist Agriculture; Drones & Crop Scouting; Nitrogen & Water Management; On-Farm Research; Cash Flow; Eastern Red Cedar Control; Soybean Management; Crop Sensors; and Insect Control.

Each recorded educational session is now available for free viewing. Please use this link for more in-depth agenda topic descriptions and video playing: *https://extension.unl.edu/statewide/westcentral/2020-virtual-water-and-crops-field-day/*

FREE Soybean Cyst Nematode Analysis:

Now may be the time to get your bags ready to collect soil samples soon after harvest. The Nebraska Soybean Board & Nebraska Extension are again providing free "Soybean Cyst Nematode Analysis." Contact your local Extension office or stop by the office to secure your sample bags; and submit to: UNL Plant & Pest Diagnostic Clinic; 448 Plant Science Hall; Lincoln, NE 68583. Bags and analysis are available free-of-charge. For more soybean cyst nematode management information: *https://cropwatch.unl.edu/plantdisease/soybean/soybean-cyst-nematode*.

Pre-harvest Stalk Health Assessment:

Corn field harvest order prioritization should be adjusted if stalk lodging risk is higher. Tamra Jackson-Ziems, Nebraska Extension Plant Disease specialist, encourages producers to scout each field using the PUSH test technique. This stalk health test involves pushing the plant tops to your body approximately 30 degrees from vertical and assess stalk strength. If plants do not snap back to vertical, then the stalks may have been compromised by stalk rot disease(s). An alternative method is to PINCH the internodes of the lower stalk. If more than 10% of the stalks crush easily, then these fields likely should be first priority for harvesting.

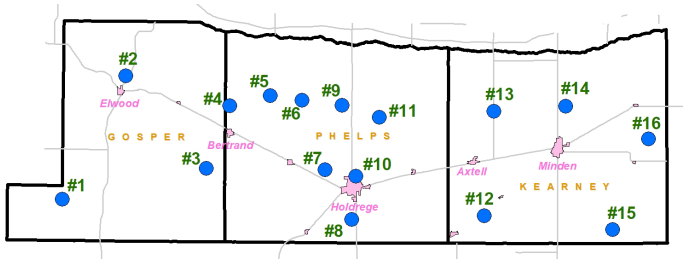
The three main fungi stalk rot diseases include: 1) Charcoal rot – usually more common during drought conditions with a gray or black stalk appearance; 2) Fusarium stalk rot – common during damp conditions & appears as white fungus growth on the outside of stalk nodes & pink on inside of stalks; and 3) Anthracnose stalk rot – top rots in corn down to black lesions.

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

	Aug 17 – Aug 23		Aug 24 – Aug 30	
Site	Evaporation	Rain	Evaporation	Rain
1	2.10	0.00	2.20	0.00
2	1.70	0.00	1.90	0.00
3	1.90	0.00	1.90	0.00
4	1.80	0.00	1.80	0.00
5	NA	NA	NA	NA
6	1.50	0.10	1.70	0.00
7	1.70	0.00	1.70	0.00
8	1.60	0.00	1.70	0.00
9	1.40	0.08	1.65	0.00
10	NA	NA	NA	NA
11	1.50	0.00	1.50	0.00
12	1.30	0.06	1.50	0.00
13	1.80	0.00	1.80	0.00
14	1.50	0.00	1.90	0.00
15	1.50	0.00	1.60	0.00
16	1.60	0.06	1.70	0.00



2020 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 (R5-1/4 Milk Line to R6-Black Layer stage): Stress at R5 will reduce yield by kernel weight, not kernel number. At the beginning of R5, kernels have about 55% moisture.

Avg. daily water use from Aug 24 – Aug 30 was 0.17"-0.33".

Soybeans (R5-Beginning Seed to R7-Beginning Maturity stage): Rapid leaf yellowing over the plant begins shortly after R6. Root growth is complete after R6.5. Stress from R6 to R6.5 may cause large yield reductions.

Avg. daily water use from Aug 24 – Aug 30 was 0.19"-0.35".

Aug 24-Aug 30 (14 of 16 NAWMN sites reporting): Average weekly rainfall was 0.00 (range 0.00 to 0.00). Average weekly ET for corn was 1.74 and for soybeans was 1.85.

Crop ET Information

NAWMN Sites:
https://www.cnppid.com/weatheret-data/nebraska-agricultural-water-management-network/
https://nawmn.unl.edu/ETdata/DataMap
Email: NRCS: 308-995-6121, Ext. 3
CropWatch: https://cropwatch.unl.edu/gdd-etdata
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
R5.5	Full Dent / 1/2 Milk Line	The starch line is 1/2 way down the kernel. Top 1/2 is hard, bottom 1/2 is softer near the cob.
R5.8	3/4 Milk Line	The starch line is 3/4 the way down the kernel working towards the finish line, the cob.
R-6	Black Layer	The starch line has advanced to the cob. Physiological Maturity. Black layer formed, kernel moisture is between 25%-35% moisture. 0.0 inches needed for yield.

Soybean Stage		DESCRIPTION
R6	Full Seed	At least one pod whose cavities are completely filled with green seeds is present at one of the four uppermost main stem nodes that have fully developed leaves.
R6.5	Full Seed / Yellow Leaf	Leaves begin to yellow rapidly, beginning in the lower canopy and progressing upwards.
R7	Beginning Maturity	At least one (normal) pod that has attained its final mature color (tan or brown, depending on variety) is present on any main stem node. 0.0 inches needed for yield.

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*.

	Sept. 3, 2020, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	62.1%	NA
Inflows to Lake McConaughy	648 cfs	2430 cfs
Flows on the North Platte at North Platte	802 cfs	597 cfs
Flows on the South Platte at North Platte	130 cfs	323 cfs
Flows on the Platte at Overton	301 cfs	2110 cfs

Thank you to all who labored in the past and in the present to make this land great. Thank You!

Farmers, Policemen, Military, Doctors, Mother's, Father's, Miners, Business Owners, Ranchers, Foresters, Firefighters, Nurses, Leaders, Church Workers, Employees, Teachers, Entertainers, Volunteers, and Many Others

HAPPY LABOR DAY!

Websites of Interest

Soil Health: *www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/*

Climate	*agclimatenebraska.weebly.com*
NRCS Nebraska	*www.ne.nrcs.usda.gov*
Central Irrigation District	*www.cnppid.com/*
TBNRD Home Page	*www.tribasinnrd.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:	Aug 20 – Sept 2	May 1 – Sept 2
Elwood 0.26 mi. S:	0.00	11.37
Bertrand 6.1 mi. SE:	0.00	11.23
Holdrege 0.99 mi. E:	0.00	9.18
Minden 7.2 mi. W:	0.00	9.08
Minden 5.8 mi. E:	0.00	11.06

Average Rain for May-August in Holdrege = 14.21 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

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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

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