

Tri-Basin Irrigator

Volume 18, Issue 8

August 30, 2018

PROGRAM INFORMATION

EQIP AND CSTWP:

EQIP – SIGNUP DEADLINE FOR 2019 FUNDS WILL BE NOVEMBER 16, 2018.

CSTWP – PRODUCERS WITH COMPLETED 2018 RECORDS CAN BRING THEM TO THEIR LOCAL NRCS FOR THEIR 2018 PAYMENT.

NSWCP: FUNDS ARE AVAILABLE FOR IRRIGATION, RANGELAND, AND EROSION CONTROL PRACTICES. STOP BY YOUR LOCAL NRCS.

ENERGY EFFICIENCY GRANT: SIGNUP DEADLINE FOR 2019 FUNDS WILL BE OCTOBER 31, 2018. FOR MORE

INFORMATION CONTACT KELLEY AT RURAL DEVELOPMENT AT THE KEARNEY USDA SERVICE CENTER AT 308-237-3118, EXT. 4 OR AT 308-455-9837.

CALENDAR OF EVENTS

SEPT 3: LABOR DAY – GOV'T OFFICES CLOSED

SEPT 4: CNPPID BOARD OF DIRECTOR'S MEETING – 9 AM

SEPT 11: TBNRD BOARD MEETING – 7:30 PM

SEPT 11-13: HUSKER HARVEST DAYS – FOR MORE INFO, GOTO [HTTPS://WWW.HUSKERHARVESTDAYS.COM/EN/HOME.HTML](https://www.huskerharvestdays.com/en/home.html)

How much water did I apply in 2018?

As irrigation season comes to an end, you can read your flow meters and calculate how much water was pumped in 2018. Flow meters vary as to their unit outputs (ac-in * 0.01, gallons * 100, ac-ft * 0.001, etc.). You simply subtract your beginning year reading from the ending year reading to get gross water pumped. See chart below to convert flow meter units to inches. Gross inches pumped is what's used for allocations, irrigation reports, etc. For your own information, you can multiply gross inches pumped by an efficiency factor to calculate net water applied to the crop.

How to Calculate Gross Inches Pumped

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

How to Calculate Net Inches Applied to the Crop

4. 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

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

CURTIS'S COLUMN



Irrigate One Last Time or Not???:

As we are approaching or are at 1/2 Milk Line on corn, I hear talks of irrigating one more time to finish the year. Will we be wasting water, energy, wear on equipment etc. if we do that?

The table below shows average soil moisture levels at Black Layer. This can be lowered 10-15% to end the year at 60-65% moisture. That is lowering it another 0.9-1.35 inches. That's with no rain. You will notice in the table average rain from 1/2 Milk Line to Black Layer of 0.75 inches. Based off these numbers, that last irrigation is not needed.

Year	Average Moisture to 4 Feet at Black Layer	Average Rainfall from 1/2 Milk Line to Black Layer
2017	72%	0.21 Inches
2016	81%	1.56 Inches
2015	74%	0.53 Inches
2014	88%	1.25 Inches
2013	72%	0.73 Inches
2012	62%	0.36 Inches
2011	72%	0.64 Inches
Average	74%	0.75 Inches

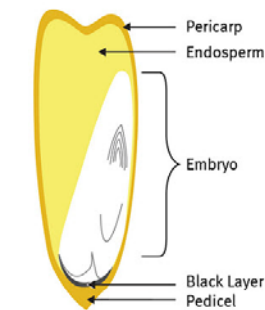
Table 1: This table shows average soil moisture levels at Black Layer for corn on silt loam soils for each of the last seven years across the Tri-Basin NRD. It also shows average rainfall from 1/2 milk line to Black Layer.

CSP and EQIP Contract Holders!!! 2018 Certification and Records need completed.

- **CSP:** All CSP contract holders need to certify 2018 contract obligations and choose payment for calendar year 2018 or 2019. If wanting paid in 2018, all contract obligations need to be certified prior to Thanksgiving in order to have payment forms submitted by December 7th. We highly recommend getting appointments prior to harvest in order to get this done. Any obligations changed or not completed may require contract modifications prior to payment. Thus, there is no guarantee that the payment will be made in 2018 if completed records aren't submitted in a timely manner to allow this to take place. **Priority will go to those producers who have filled-out all the necessary forms for payment.** Contact your local NRCS offices for more information.
- **EQIP/AWEP Irrigation Water Management (IWM) Records:**
 - All EQIP contract holders with irrigation practices need to submit their 2018 irrigation records to their local NRCS office. Payment forms will get signed and submitted after complete records have been submitted. Records include crop grown, soil moisture levels, flow meter readings, crop ET's, and rainfall.

Irrigation Scheduled Season Nears End:

The 2018 irrigation season is all but in the books; where has this time gone? Central's 12-week irrigation schedule ends this Sunday, September 2nd. Water will be available for a short time after that if needed, however with these few cool days and rain in the forecast, the 2018 crops may finish without our help. Through Wednesday, August 29th, UNL calculations show corn GDD at 2,382 for fields emerging May 10th near Holdrege, this is ahead of 2015-2017 seasons and ahead of normal. We are adding approximately 15-25 GDD/day at this time on corn. For corn varieties needing 2,500 GDD, May 10th fields should reach black layer next week. Late season varieties will need some additional time. You can track daily GDD on our weather page at: <https://www.cnppid.com>. Once a crop black layers, the water conduit to the seed is broken; plant water cannot enter the grain kernels. This physiological mature state can be easily seen.



Source: www.pioneer.com

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.

Flow Meter Readings for Water Use Reports:

As the irrigation season winds down and you are picking up irrigation pipe or bedding down irrigation engines, remember to record the ending meter readings for your Irrigation Water Management (Water Use) Forms. We have the Water Use forms printed and ready to be filled out! You can stop in our office to pick them up or call us at 1-877-995-6688 to have them mailed to you.



Yellow Woolly Bear Caterpillar:

If the high numbers of adult moths and yellow insect egg masses laid this fall are an indication; there may be soon high numbers of yellow woolly bear caterpillars. Although woolly bear larvae may move from weedy broadleaf field edges into soybean fields, Bob Wright, Nebraska Extension Entomologist, says that defoliation is almost always overestimated. Further, soybeans have a great capacity to compensate for insect defoliation especially if soybean canopies are large. And, historically woolly bear caterpillar populations tend to crash due to insect-attacking fungi. Warm humid nights in August usually favor fungi growth which naturally kill the woolly bear invaders.



The banded woolly bear caterpillar pictured on the upper right has been portrayed as a visual indicator for predicting cold severity with the approaching winter. However, climate studies have concluded that the width of the orange or reddish brown center insect band is more linked to the previous warmth of summer or extended fall heat; rather than predicting the upcoming winter. Wider bands usually link to hotter summers.

Guidelines for control of soybean-defoliating insects are available on the Nebraska Extension CropWatch website or "Managing Soybean Defoliators," NebGuide G2259

Eastern Redcedar Invasion:

Considered one of the greatest threats to human well-being, Eastern Redcedar trees are invading grasslands at an exponential rate. In as little as 40 years, Eastern Redcedar invasive growth can convert open grassland to closed-canopy woodland.

Due to the drought-tolerant nature of cedars, these tree species have been highly recommended for windbreaks; snow barriers; and landscapes for almost a century. However, when birds and wildlife feed on cedar (blue) seeds and spread their droppings across pastures, these tree species emerge & out-compete almost every plant in the grasslands.

As a result, Nebraska Extension launched a long-term study for sustainable Eastern Redcedar control. UNL cedar control research is summarized at: "cedarliteracy.unl.edu"

Christine Bielski, UNL Cedar Research Advisor, says that effective long-term Eastern Redcedar control policies have not been implemented. This has caused agencies to under-invest when the problem was preventable and over-invest later on to attempt to restore what was lost. This research revealed no examples where late intervention control attempts have worked.

Researchers examined three grassland Nebraska regions, including the Sandhills; and analyzed Eastern Redcedar ground cover as well as the land management policies in place. This long-term study found that Eastern Redcedar control measures were not put into place until the trees had rapidly expanded into grassland environments where the cedars were absent or rare. Also, when "one-time prescribed pasture burns" were used to control invading Eastern Redcedar trees; cedar seedlings began re-occurring in the previously pasture burned area 3-4 years after the controlled burn. So, effective long-term "fire" control of Eastern Redcedar requires re-burning pastures every 7-8 years.

Similar recommendations are advised for cutting volunteer cedars out of pastures; where repeated control practices are needed for long-term success. Herbicides labeled for cedar control include: Spike 20P®; Tordon 22K®; Grazon P+D®; Velpar L® & Surmount®.

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	Aug 13 – Aug 19		Aug 20 – Aug 26	
	Evaporation	Rain	Evaporation	Rain
1	1.20	0.90	1.20	0.12
2	1.10	1.30	1.20	0.12
3	0.60	1.27	0.70	0.11
4	1.20	1.86	1.10	0.09
5	1.00	1.87	0.90	0.18
6	0.90	1.25	0.60	0.15
7	1.00	1.95	1.00	0.11
8	1.00	1.75	1.00	0.20
9	0.90	2.22	0.90	0.06
10	1.00	2.30	1.00	0.20
11	0.90	1.70	0.80	0.10
12	1.00	1.86	1.10	0.22
13	1.00	1.12	0.95	0.05
14	0.60	1.17	0.75	0.08
15	1.00	1.45	0.90	0.65
16	0.90	2.54	0.90	0.36

CROP STAGE INFORMATION

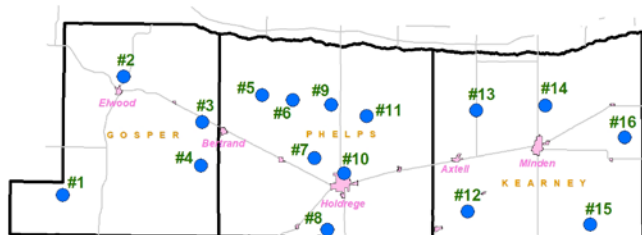
Corn (R5-1/4 Milk Line to R5.5-1/2 Milk Line (Full Dent) stage): At R5, ¼ Milk Line, you need 3.75 inches to maturity. Average moisture to 4 feet is 84% (all Silt Loam) at 6 sensor sites across the NRD. If your field matches this, you are done irrigating based on depleting to 40% moisture.

Avg. daily water use from Aug 20 – Aug 26 was 0.10"-0.18".

Soybeans (R6-Full Seed to R6.5-Full Seed/Yellow Leaf stage): At R6, Full Seed, you need 3.5 inches to maturity. Average moisture to 4 feet is 82% (all Silt Loam) at 4 sensor sites across the NRD. If your field matches this, you are done irrigating based on depleting to 40% moisture.

Avg. daily water use from Aug 20 – Aug 26 was 0.11"-0.19".

Aug 20-Aug 26 (16 of 16 NAWMN sites reporting): Average weekly rainfall was 0.17 (range 0.05 to 0.65). Average weekly ET for corn was 0.95 and for soybeans was 1.02.



2018 Map of NAWMN Sites across the Tri-Basin NRD.

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

Corn Stage		DESCRIPTION
R5.5	Full Dent - 1/2 Milk Line	The starch line is 1/2 the way down the kernel. Top 1/2 is hard and 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 (from outside moving towards 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, 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>.

	August 30, 2018, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	80.2%	NA
Inflows to Lake McConaughy	971 cfs	1220 cfs
Flows on the North Platte at North Platte	479 cfs	480 cfs
Flows on the South Platte at North Platte	190 cfs	111 cfs
Flows on the Platte at Overton	250 cfs	251 cfs



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:	Aug 16 – Aug 29	May 1 – Aug 29
Arapahoe 9.8 NNE:	1.22	14.06
Bertrand 6.1 mi. SE:	1.01	16.85
Funk 4.1 mi. NNE:	1.15	13.58
Minden 0.855 mi. W:	0.96	13.90
Minden 8.8 mi. ESE:	1.67	14.90

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@ne.usda.gov. ***

USDA - Natural Resources Conservation Service



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 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
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424 North Colorado
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308-995-4222

308-785-2390

308-832-0645

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