

PROGRAM INFORMATION

EQIP: NATIONAL PLANS TO USE REMAINING FUNDS FOR DISASTER AND WILDLIFE PROJECTS. ADDITIONAL IRRIGATION FUNDS MAY NOT HAPPEN IN 2019.

CSTWP: 2019 APPROVED APPLICATIONS ARE BEING WRITTEN INTO CONTRACTS.

NSWCP: NEW FUNDS CAME JULY 1ST. **FIRST ROUND OF IRRIGATION APPLICATIONS TO BE REVIEWED FOR APPROVAL NEEDS APPLICATIONS SIGNED BY THE OWNER BY AUG. 28TH.**

ENERGY EFFICIENCY GRANT: APPLICATIONS DUE **OCTOBER 31, 2019.** CONTACT KELLEY AT RURAL DEVELOPMENT AT 308-455-9837 OR KELLEY.MESSENGER@USDA.GOV.

CALENDAR OF EVENTS

SEPT 3: CNPPID BOARD OF DIRECTORS MEETING 9 AM

SEPT 10: TBNRD BOARD MEETING 1:30 PM

AUG 22: UNL WATER AND CROPS FIELD DAY AT NORTH PLATTE – NO COST / FREE MEAL. REGISTER BY AUG 20TH FOR MEAL COUNT. FOR AGENDA AND LINK TO ONLINE REGISTRATION FORM, GOTO [HTTPS://EXTENSION.UNL.EDU/STATEWIDE/WESTCENTRAL/WATER-CROPS-FIELD-DAY/](https://extension.unl.edu/statewide/westcentral/water-crops-field-day/)

NO-TILL ON THE PLAINS EVENTS: GOTO

[HTTP://WWW.NOTILL.ORG/UPCOMING-EVENTS](http://www.notill.org/upcoming-events) FOR MORE INFO.

- **AUG 29:** COMPANION CROP DEMO FIELD DAY @ OSAGE CITY, KS

- **SEPT 10:** SOIL HEALTH FIELD DAY @ ALMENA, KS

SEPT 10-12: HUSKER HARVEST DAYS – FOR MORE INFO, GOTO

[HTTPS://WWW.HUSKERHARVESTDAYS.COM/EN/HOME.HTML](https://www.huskerharvestdays.com/en/home.html)

TAPS Program spotlighted at the upcoming UNL Water and Crops Field Day @ WCREC in North Platte – August 22nd

TAPS is the acronym for Testing Ag Performance Solutions. TAPS is an awesome educational program that was developed by the UNL Extension Service. The program allows participating producers to compete and compare their farming operations and management decisions on a field at the West Central Research Extension Center in North Platte. This competing and comparing allows participating producers the opportunity to push the limits on irrigation, fertility, etc. where they wouldn't push these limits on their own fields at home. Thus, they can learn from the outcomes, resulting in now being able to trust irrigation sensors, maybe they don't need to irrigate as much, maybe they don't need as much fertilizer, maybe the planting population doesn't need to be as high as one thinks, etc. Others can learn as well by seeing the results of those who participated.

The Field Day will have a growers panel of participants where you can listen to their strategies. You can visit with participants, ag technology dealers, etc. The Field Day theme is Precision Technology. This is an excellent opportunity to learn ways in which you can improve your farming operation and possibly your net profit. Visit the link mentioned above under the Calendar of Events to register for meal count.

CURTIS'S COLUMN



Predicting Last Irrigation:

Needed info: **1.** Available Water Capacity (AWC) of soil, **2.** current amount of plant available water to a four foot depth (unless roots are not that deep due to compaction, too much water early, etc.), **3.** current crop stage, and **4.** normal water use from current crop stage to maturity. This prediction assumes no rainfall to crop maturity. If rainfall occurs, the process must be reevaluated.

The following is a chart for normal water use requirements from various crop stages to maturity.

	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"

You can get a copy of NebGuide G1871 "Predicting the Last Irrigation of the Season" online at <http://extensionpublications.unl.edu/assets/pdf/q1871.pdf>.

Predicting Last Irrigation Example

Crop: Corn Growth Stage: Beg. Dent Moisture: 80%
 Water Use To Maturity (see chart on left side of page: 5.0 in.
 Soil Type: Holdrege Silt Loam = an AWC of 2.25 in. per ft.
 (Soil information available at your local NRCS office)

1. AWC x root zone (4 ft. depth) = **9.0 in. Total AWC**
2. Maximum water depletion of 60% x 9.0 in. = **5.4 in. of maximum water depletion in 4 ft. root zone**
3. Current soil water already depleted (measured) = **1.80 in.**
 80% avg. soil moisture to 4 ft. (20% avg. depletion)
 0.20 x 2.25 in./ft. x 4 ft.
4. Remaining plant available water = **3.6 in.**
 (5.4 maximum water depletion minus 1.8 already depleted)
5. Irrigation requirement = **1.40 inches of irrigation water needed for plant to reach maturity.**
 (5.0 in. of water to reach maturity minus 3.6 in. of water available)

Note: This all assumes no rainfall. Should rainfall occur, the process needs to be repeated. It's also recommended to periodically check soil moisture & crop stages and repeat this process through crop maturity.

CSP Participants

1. **For those needing cover crops this fall, see your NRCS office.**
2. **Make an appointment at your local NRCS office to bring your records in early, especially if you want paid in 2018 tax year.**

Canal Treatments:

Central canals are currently being treated for algae, moss and sago pondweed. The Irrigation Division works continuously with aquatic chemical companies throughout each year to do the best possible job of keeping up on the latest research, technology and methodology to address nuisance aquatics.

Chemical drippers, as shown below, are being set up in a series of drifter stations to apply 2 chemicals in what has been an effective treatment program for algae and sago pondweed. All chemicals used are labeled safe for both water and crops.

Aquatic chemical control is quite expensive; costs are in the \$30 to \$80 per gallon range depending on the chemical needed. Sago pondweed can typically be controlled with a single treatment per season where algacide applications may be needed 2-3 times, depending on weather. Annual costs can be significantly reduced by treating the canals following a rain event or on other days when canal flows are low and less chemical is needed to meet the required chemical to flowrate ratio. The exception to use of the drifter system is use of a spray truck to treat floating moss. A copper-based product is sprayed as a 10% solution over the surface of the canal water on sunny days if moss is present and actively growing.



TBNRD Reminders Before Irrigation Season Ends:

Chemigation Inspections

Due to the weather, we still have chemigation inspections that must be completed this year in order to renew permits in 2020. Also, failed inspections must be rescheduled once you have fixed the problem to be able to renew next year. Please call the TBNRD office at 308-995-6688 to schedule.

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.

Irrigation Water Samples for Nitrogen Management Reports

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 sample results you get this year will be used in completing your 2020 Nitrogen Management reports.

Year End 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 Water Use reports.



Soybeans Now in Critical Growth Stages:

Although hail damage is difficult to receive anytime, Justin McMechan, UNL Cropping Systems specialist, says that the soybean growth R4 (full pod) to R5 (beginning seed) stages are the worst soybean growth phases to receive hail, because the plant will not produce any more nodes after R5. The beginning seed (R5) reproductive stage is attained when the seed in the pods of the four uppermost nodes on the main stem are 1/8" long.

Jim Specht, UNL Emeritus Agronomist, developed the free SoyWater website Decision-Aid for Soybean Irrigation Scheduling. Although it was originally developed for irrigation decisions, rainfed soybean producers can also use this tool for growth stage determination. The software will automatically calculate soybean plant development based on your planting or emergence date; location and soybean variety maturity group. For irrigators, rainfall can be manually recorded for each field rain event; or rain amounts can be automatically recorded using nearby weather station data. Then, current and predicted irrigation based on growth development is automatically determined.

Download the free SoyWater at: <http://cropwatch.unl.edu/soybeans> or <http://hprcc-a.unl.edu/soywater/> or UNL SoyWater. Then, record your SoyWater UserID and Password and get started.

New UNL Custom Rates Report:

Our Nebraska Extension Economics Department surveys producers and custom machinery business owners on even years with published comparison rates on odd years or every other year. As a result, the new custom rates (based on 2018 rates) are now available.

Usually there are a range of values, and some in the custom business inquire why some values are so low. Please note that the survey does not clarify if the respondent is planning to replace their custom equipment and is charging accordingly.

This new UNL Custom Rates Report is available at: <https://agecon.unl.edu/custom-rates> Also, there are other free crop and livestock budget sheets available in either .PDF format or Excel spreadsheet (worksheet) which allow you to customize the data for your farm(s). For example, the UNL Crop Budgets include 78 crop budgets with 15 different crops across the state. Download your free UNL Crop budgets: <https://cropwatch.unl.edu/budgets> OR free livestock budgets: <https://agecon.unl.edu/publications/budgets>

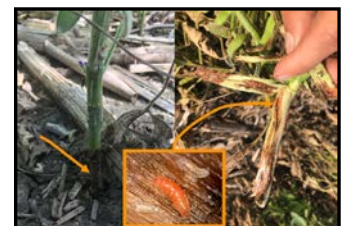
2019 Nebraska Extension Wheat Varieties Performance:

The new 2019 Nebraska Extension Winter Wheat Varieties Yield Results are now available on the UNL cropwatch website: <https://cropwatch.unl.edu/winter-wheat-variety-test-results>. Special thanks to Terry Woollen, whom served as our 2019 Nebraska Extension West Central (rainfed plot) research cooperator, north of Alma, NE in Harlan county. Other West Central locations included: Red Willow county (McCook); Lincoln county (North Platte); and Perkins county (Grant). Irrigation wheat comparison is available through the Box Butte location where both irrigated and rainfed plots were grown.

For expanded comparison, Kansas State performance plot results are also available. Locations such as Decatur county (Oberlin, KS) and Republic county (Belleville) may have value for fields in border counties. <https://www.agronomy.k-state.edu/services/crop-performance-tests/winter-wheat/index.html>

Possible new Soybean Gall Midge (Resseliella maxima Gagné):

Please help our local Extension offices document any Soybean Gall Midge insects. Look for black discolored stems as the base of soybean plants mainly on field edges with lodging similar to dextes stem borer. Darkened area at the base of a soybean plant associated with soybean gall midge. Peeling back outer layer reveals large numbers of orange colored soybean gall midge larvae. Less developed larvae appear white in color until 3rd instar when they turn to orange color.



NAWMN CROP ET INFORMATION

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

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

Site	July 29- Aug 4		Aug 5 - Aug 11	
	Evaporation	Rain	Evaporation	Rain
1	1.50	0.04	1.50	0.93
2	1.50	0.09	1.20	1.10
3	1.30	0.03	1.40	0.52
4	1.50	0.00	1.50	0.64
5	1.30	0.00	1.30	0.92
6	1.20	0.00	0.90	0.75
7	1.20	0.00	1.30	0.82
8	1.30	0.19	1.40	0.60
9	1.40	0.00	1.20	0.82
10	1.60	0.00	1.50	0.50
11	1.30	0.02	1.30	0.68
12	1.10	1.16	1.40	0.50
13	1.00	0.09	1.10	0.53
14	1.20	0.00	1.30	0.62
15	1.30	2.10	1.30	0.53
16	1.30	0.05	1.30	0.44

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

CROP STAGE INFORMATION

Corn (R2-Blister to R4-Dough stage): Not as severe as R1-Silking, stress now can still have a profound effect on yield. As the kernels mature, the potential yield loss becomes less.

Avg. daily water use from Aug 5 – Aug 11 was 0.18"-0.24".

Soybeans (R4-Full Pod to R6-Full Seed stage): Demand for water and nutrients is large throughout the rapid seed filling period. Environmental stress from now til shortly after R6 (Full Seed) needs to be avoided.

Avg. daily water use from Aug 5 – Aug 11 was 0.18"-0.24".

Aug 5-Aug 11 (16 of 16 NAWMN sites reporting): Average weekly rainfall was 0.68 (range 0.44 to 1.10). Average weekly ET for corn was 1.44 and for soybeans was 1.43.

ET INFORMATION SITES

NAWMN Sites:

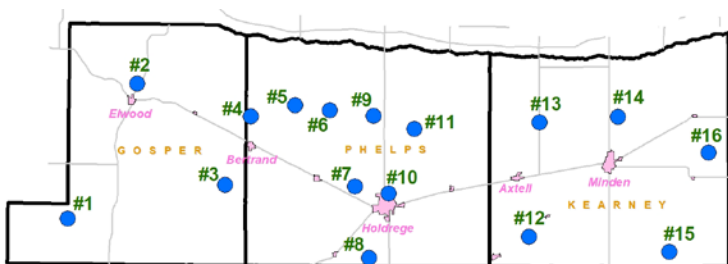
<https://www.cnppid.com/weatheret-data/nebraska-agricultural-water-management-network/>

<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



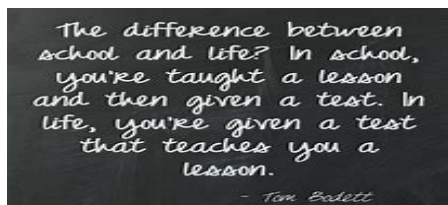
2019 Map of NAWMN Sites across the Tri-Basin NRD.

Corn Stage		DESCRIPTION
R4	Dough	Most kernels contain semi-solid, pasty material.
R4.7	Beg. Dent	Kernels at base of ear are beginning to dent.
R5	1/4 Milk Line	All or nearly all kernels are dented. Milk line or starch line appears shortly after denting as a line across the kernel when it is viewed from opposite the embryo side and will advance toward the base of the kernel (toward the cob).
Soybean Stage		DESCRIPTION
R5	Beginning Seed	At least one pod containing small seeds is present at one of the four uppermost main stem nodes that have fully developed leaves. A pod held up to the bright sky can see the small developing seeds in the pods.
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.

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 15, 2019, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	88.2%	NA
Inflows to Lake McConaughy	2601 cfs	906 cfs
Flows on the North Platte at North Platte	1044 cfs	407 cfs
Flows on the South Platte at North Platte	401 cfs	233 cfs
Flows on the Platte at Overton	2591 cfs	270 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 1 – Aug 14	May 1 – Aug 14
Arapahoe 9.8 NNE:	0.94	25.50
Bertrand 6.1 mi. SE:	0.62	23.93
Holdrege 0.99 mi. E:	0.56	22.51
Minden 7.2 mi. W:	0.48	19.14
Minden 5.8 mi. E:	0.72	20.17

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

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

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

308-995-4222

308-785-2390

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