

PROGRAM INFORMATION

EQIP AND CSTWP:

EQIP – FUNDS FOR 2018 CONTRACTS HAVE BEEN PRE-APPROVED OR OBLIGATED. SHOULD SLIPPAGE FUNDS BECOME AVAILABLE, WE CAN POSSIBLY FUND ADDITIONAL CONTRACTS.

CSTWP – 2018 PRE-APPROVALS COMPLETE. CONTRACTS BEING WRITTEN.

NSWCP: NEW FUNDS COME JULY 1ST SO GET YOUR IRRIGATION APPLICATIONS IN BY AUGUST 31ST IN ORDER TO HAVE FIRST DIBS.

ENERGY EFFICIENCY GRANT: SIGN-UP DEADLINE FOR 2019 FUNDS WILL BE OCTOBER 31, 2018. FOR MORE INFORMATION CONTACT KELLEY AT RURAL DEVELOPMENT AT THE KEARNEY USDA SERVICE CENTER AT 308-445-9837 OR KELLEY.MESSENGER@NE.USDA.GOV.

CALENDAR OF EVENTS

JUNE 11: CNPPID 12 WEEK IRRIGATION RUN SCHEDULE STARTS

JUNE 12: TBNRD BOARD MEETING 1:30 PM

JUNE 14: FLAG DAY

JUNE 17: FATHER'S DAY

JUNE 20: WHEAT, FIELD PEA, FORAGES TOUR – SEE PAGE 2 AND ATTACHED FLYER

JUNE 27: WEEDS AND CROPS FIELD DAY – SEE PAGE 2

Tool to Determine Crop Water Use – Part 1

The Nebraska Agricultural Water Management Network (NAWMN) is underway for the 2018 crop season across the Tri-Basin NRD. This network is a tool for participating and area producers to use when scheduling irrigations. The information gathered is used to determine how much soil moisture their crops are using. This information can be found on 2 websites listed on page 3 of this newsletter under the section "ET Information Sites". If you get this via email, just click the links.

There are only 6 weather stations within or neighboring the entire NRD where producers can get crop water use information. This network adds 16 additional locations. See map on page 3. Having this information more localized allows producers to better determine what their crops are using for soil moisture. Also, they get to use their own crop stage of growth. Having these sites closer to a producers fields and being able to use their own crop stages, this network serves as an excellent tool in determining crop water usage by field. Knowing your crop water use allows you to better schedule irrigations which can mean more money in the bank, water for future generations, prevent leaching of nitrates into the water supply, etc. etc.

On page 3 of each Tri-Basin Irrigator issue, information from the prior two weeks will be provided for all 16 sites. Because this newsletter is sent bi-weekly, it's recommended to use the websites for the most accurate and current information. The websites are updated by Tuesday of each week. In the next issue of this newsletter, an example of using this network will be provided.

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

CURTIS'S COLUMN



Full Soil Moisture Profile to 4 Feet:

10 NAWMN sites across the Tri-Basin NRD are averaging 100% moisture on June 6, 2018 down to a 4 foot depth. See Table 1 below. I know some pivots have been running for various reasons. But the one dryland site is also at 100% moisture down to 4 feet. Even at a full profile, the dryland site is not quite as wet as the irrigated sites. It's about 10-15% drier.

If irrigating to add water, you don't need to be. There is plenty of moisture this early in the season. Over watering now can lead to shallow roots which will lead to additional irrigations in late summer, thus spending money. These early waterings will keep the profile full and provide no room for rain. That could mean the leaching of nitrates which costs you money and is not good for the groundwater. In addition, lack of oxygen in the soil will lead to lower yields as well.

<i>Pivot Corn and Soybeans Combined</i>		
<i>All sites No-Till except 2</i>		
<i>Holdrege Silt Loam soil</i>		
Soil Depth	Sept. 18, 2017	June 6, 2018
1 foot	66%	100%
2 foot	71%	100%
3 foot	78%	100%
4 foot	77%	100%
4 ft. avg.	73%	100%
<i>Dry (1 site near Holdrege) - No-Till Corn into Beans</i>		
Soil Depth	Sept. 18, 2017	June 6, 2018
1 foot	40%	100%
2 foot	49%	100%
3 foot	56%	100%
4 foot	43%	100%
4 ft. avg.	47%	100%

Table 1: The table above shows the ending 2017 moisture levels and the beginning 2018 moisture levels for 9 pivots and 1 dryland corner. The ending 2017 moisture levels are prior to the 2 plus inches of rain that came in late September. The beginning 2018 moisture levels are affected by early irrigations to water up the crop, activate herbicides, incorporate fertilizer, etc.

Reminder: Get your soil moisture sensors installed now. It is best to get them in now, if not earlier, so the soil can gel around them and the roots can grow naturally. This will provide the best scenario for capturing soil moisture levels.

Also, CStwP and EQIP contract holders, if you committed to soil moisture sensors, you need to get these installed and start keeping records or you could be found in contract violation.

Water Conservation:

Water conservation operations have the means to obtain reliable soil moisture data on all fields and irrigate according to need. In the summer heat with no rain, irrigation decisions are easy; irrigate or lose yield. However, in this area and with good data, there is real opportunity to save an irrigation on the front or back end of the season, or both, to lower the energy input costs that reduce profit.

Many times we see multiple pivots start up on the first hot day in June when a nearly full soil water profile exists and a near-term rain event is in the forecast. The operators could safely skip those irrigations and the cost. On the back side of the season, we sometimes see a last, unnecessary irrigation when yield can no longer be affected by a water input. All of this economic loss, simply due to the lack of good data to make those better management decisions.

There are several high-tech ways to effectively track soil moisture but irrigators can also use the simple logic behind those calculations and do it at no cost; perhaps not as conveniently but the data is reliable. From a beginning balance at emergence, adding effective rainfall and net irrigation and subtracting the crop water use gives a daily soil moisture balance. Nebraska Extension publication EC709: [Irrigation Scheduling: Checkbook Method](#) explains how to arrive at a beginning balance for each field and how to use the checkbook method of irrigating quite well. Central, NRCS, Tri-Basin NRD or the local Extension Office can help get you started too.

Fields that currently have good residue to protect the soil from evaporation prior to canopy have likely saved another irrigation. Stay healthy and safe out there; your life matters.

TRI-BASIN NRD NEWS



Check Flowmeters Before Starting Irrigation:

We would like to remind producers to check the flowmeters on their wells before starting irrigation this season. It's a good idea to make note of the meter reading at the beginning of the season, to make sure it matches the reading from the end of last season. Checking the meter periodically throughout the season to make sure it is working properly benefits both Tri-Basin NRD and you, as an irrigator, so that you can keep accurate irrigation records. It is the responsibility of the producer to make sure the flowmeter is functioning properly during the irrigation season.

It has also come to our attention that producers who have Senninger brand flowmeters may want to make sure the batteries they are using are the correct size. These meters take lithium 3.6 volt batteries instead of standard 1.5 volt AA batteries. Using standard AA batteries will cause these flowmeters to not work properly.



Wheat, Field Peas & Forage Tour - June 20 (Alma / Bladen):

Nebraska Extension – Wheat, Field Peas, Forages & Cover Crops tours are now in full swing across Nebraska. Our 2018 South Central Extension field tours are scheduled for **Wed., June 20 from 9:00 a.m. – 10:00 a.m.** with the **Wheat Varieties** performance plot tour located 2 miles east of the Highway 183 & Huntley spur intersection and 3.7 miles south on “P” road on the west side. GPS: 40.15211, -99.3301

This winter wheat plot tour will begin with a free breakfast at the tour site. Participants will then have an in-depth guided tour of the 46 wheat varieties led by Robert (Bob) Klein, Emeritus WC Extension Crops Specialist and Todd Whitney, Nebraska Extension Crops Educator. Special emphasis will be shared on how wheat can still provide economic benefits in a cropping rotation despite lower commodity prices. Thanks to Terry Woollen, cooperator, for providing this Alma area site.

The Nebraska Extension **Field Peas Varieties** plot tour will kickoff with a free noon lunch in the Blue Hill Community Center – Blue Hill, NE on June 20. Indoor educational sessions will highlight pulse crops, wheat, forage & cover crops research.

Then, from **2:30 p.m. – 3:00 p.m.** a **Field Peas Varieties** plot tour will be conducted on Tim Engelhardt’s farm near Bladen, NE. This plot is located from Bladen: 5 miles south to intersection of 800 & T roads; and ½ mile west on south side. GPS: 40.248194, -98.603379

For more information regarding the June 20th plot tours, contact Todd Whitney, Nebraska Extension Educator based in the Phelps County office (Holdrege) at 308-995-4222 or view the attached program flyer.

Extension Weeds & Crops Field Day – June 27 (Clay Center):

New technologies and herbicides for weed control in corn, soybean, sorghum and cover crops research will be featured during the Nebraska Extension South Central Ag Lab Field tours on June 27 from 8:30 a.m. – 3:00 p.m. This free event will begin with registration at 8:00 a.m. located near Clay Center, NE; travel directions are as follows: 12.4 miles east of Hastings just south of Highway 6. GPS: 40.57539, -98.13776

This event is free; however, pre-registration is very appreciated for meal count: <http://agronomy.unl.edu/fieldday>.

Featured topics will include: comparison of herbicide programs for soybeans and corn weed control; MGI soybeans weed control and crop safety; popcorn hybrids response to glyphosate Enlist DUO or XtendiMax; volunteer corn control in row crops; weed control and crop response in INZEN sorghum; and critical timing for weed removal as influenced by soil applied herbicide. In addition, an overview of the effects of cover crops on weed suppression pests and beneficial insects will be shared.

CCA credits will be available. More information available via Roger Elmore at roger.elmore@unl.edu or (402) 472-1451.

Southcentral Wheatlage Research Highlighted:

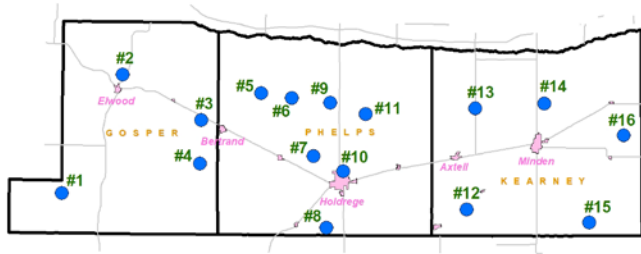
The two-year (2016 & 2017) Nebraska Extension Wheatlage study in cooperation with South Central Feeders north of Bertrand, NE was featured in a Spring “CropWatch” article. Record cold temperatures increased interest in haying & wheatlage harvest using rye, wheat, and triticale due to pasture and forage shortages across the state. This article can be viewed at: <https://cropwatch.unl.edu/2018/wheat-forage-options-and-considerations>.

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	May 21 – May 28		May 29 – June 3	
	Evaporation	Rain	Evaporation	Rain
1	1.70	1.19	1.30	0.73
2	2.50	0.70	1.70	0.88
3	2.10	0.75	1.30	1.45
4	2.40	0.83	1.60	1.15
5	NA	NA	1.50	0.80
6	NA	NA	1.30	1.70
7	2.40	0.85	1.60	1.30
8	2.20	0.80	1.40	0.55
9	NA	NA	NA	NA
10	NA	NA	1.40	0.50
11	NA	NA	1.70	1.50
12	2.40	0.71	1.50	0.90
13	2.50	2.63	1.50	1.00
14	2.20	1.12	1.00	0.72
15	2.30	1.23	1.50	0.72
16	1.80	2.23	1.70	0.71



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

Crop Coefficients (K _c)			
Corn		Soybeans	
Stage	K _c	Stage	K _c
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 (V4-4 Leaf to V8-8 Leaf stage): The growing point and tassel are above the soil surface at the 6-leaf stage. Precise fertilizer placement is less critical at 6-leaf because the nodal roots are well distributed in the soil.

Avg. daily water use from May 29 – June 3 was 0.06"-0.10".

Soybeans (Planted to V3-3rd Node stage): Active nitrogen-fixation begins at about the V2-V3 stages and will increase with time up to the Beg. Seed to Full Seed stage. After V1, photosynthesis by the developing leaves is adequate for the plant to sustain itself.

Avg. daily water use from May 29 – June 3 was 0.04"-0.11".

May 29-June 3 (15 of 16 NAWMN sites reporting): Average weekly rainfall was 0.97 (range 0.50 to 1.70). Average weekly ET for corn was 0.46 and for soybeans was 0.35.

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
V6	6 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.
V8	8 Leaves	
V10	10 Leaves	
Soybean Stage		DESCRIPTION
V2	2nd Node	V2 has 2 nodes on main stem, each with a trifoliolate leaf with unfolded leaflets (leaflet edges not touching). Plant has 3 nodes total: 1 unifoliolate and 2 trifoliate.
V(n)	Nth Node	Additional nodes on main stem continue to grow as plants develop. Need to interpolate the K_c value when determining water use.

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 24, 2018, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	86.6%	NA
Inflows to Lake McConaughy	961 cfs	4162 cfs
Flows on the North Platte at North Platte	374 cfs	457 cfs
Flows on the South Platte at North Platte	766 cfs	1989 cfs
Flows on the Platte at Overton	2130 cfs	3468 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:	May 24 – June 6	May 1 – June 6
Arapahoe 9.8 NNE:	2.24	4.65
Bertrand 6.1 mi. SE:	1.25	2.86
Funk 4.1 mi. NNE:	1.53	4.41
Minden 0.855 mi. W:	2.10	4.26
Minden 8.8 mi. ESE:	2.52	4.32

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@ne.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
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Nebraska Extension



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Wheat, Field Peas & Cover Crop Tours

Jun. 20 – 2018— Alma / Bladen, NE
Wheat, Field peas, Spring Forages, Cover Crops

FIELD DAY AGENDA

<u>9:00 - 10:00 am:</u>	<u>Winter wheat varieties plot tour @ Terry Woollen's farm</u>
<u>11:30 - noon:</u>	<u>Welcome and registration at Blue Hill Community Center</u>
<u>Noon - 1:30 pm</u>	<u>Lunch break</u> <ul style="list-style-type: none">• Free lunch and refreshments• 90 sec Rapid-Fire Industry Talks• Networking session 30 min
<u>1:30 - 2:30 pm:</u>	<u>Indoor Session - UNL Research Update</u> <ul style="list-style-type: none">• Brief 10 min presentations on wheat, pulse crops, forages and cover crop management
<u>2:30 - 3:30 pm:</u>	<u>Field peas variety PLOT TOUR @ Engelhardt's farm</u> <ul style="list-style-type: none">• Field peas• spring forages• cover crops

DIRECTIONS

Winter wheat variety plot at Terry Woollen's farm—Alma
From Alma, north 7 miles on Highway 183 Huntley spur. Turn right on Hwy 42A blacktop & go 2 miles east to "P" road; then turn right & go 3.7 miles south. Plot on west side.
From Holdrege, travel south 15 miles on Highway 183 to Huntley spur. Turn left on Hwy 42A blacktop & go 2 miles east to "P"; then turn right & go 3.7 miles south. Plot on west side.

GPS: 40.15211, -99.3301

Blue Hill Community Senior Center - 555 W Gage St, Blue Hill, NE 68930

Field pea variety plot at Tim Engelhardt's farm near Bladen
From Bladen, 5 miles south to intersection of 800 and T road, then ½ mile west, and the plot is on the south side of the road. GPS: 40.248194, -98.603379

FREE TO ATTEND!

Pre-registration appreciated meals count.

Call: Nebraska Extension—Harlan County
308-928-2119

Email: Todd Whitney - twhitney3@unl.edu



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