

PROGRAM INFORMATION

EQIP AND FARM PROGRAM BENEFITS:

EQIP – EPHEMERAL GULLY CONTROL INITIATIVE

IF YOU FARM HIGHLY ERODIBLE LAND THAT MUST FOLLOW A CONSERVATION PLAN TO REMAIN IN COMPLIANCE FOR USDA PROGRAM BENEFITS, THEN YOU NEED TO KEEP READING.

IN MY FIRST ISSUE OF THIS NEWSLETTER (MAY 24, 2018), I MENTIONED THAT EPHEMERAL GULLY EROSION HAS TO BE CONTROLLED.

THIS EQIP INITIATIVE IS A PROGRAM WHERE YOU CAN RECEIVE FINANCIAL ASSISTANCE TO HELP GET YOU STARTED IN CONTROLLING THESE ERODITIVE AREAS. FINANCIAL ASSISTANCE WILL BE PROVIDED FOR SUCH THINGS AS COVER CROPS, GRASSED WATERWAYS, TERRACES, EROSION CONTROL STRUCTURES, ETC.

APPLICATION CUTOFF FOR THIS PROGRAM IS JULY 20, 2018.

CALENDAR OF EVENTS

- JULY 10: TBNRD BOARD MEETING 1:30 PM
- JULY 11: PALMER AMARANTH FIELD DAY @ CARLETON, NE – SEE EXTENSION EXTRAS SECTION ON PAGE 2
- JULY 22-26: BOTH THE KEARNEY AND PHELPS COUNTY FAIRS
- JULY 26-28: GOSPER COUNTY FAIR
- AUG 14: SOIL HEALTH FIELD DAY @ MINDEN, NE – SEE WEB FOR MORE INFO: [HTTP://WWW.NOTILL.ORG/EVENTS/GETTING-STARTED-WITH-SOIL-HEALTH-FIELD-DAY](http://www.notill.org/events/getting-started-with-soil-health-field-day)
- AUG 23: WEST CENTRAL RESEARCH FIELD DAY @ N. PLATTE, NE - SEE EXTENSION EXTRAS SECTION ON PAGE 2

ALERTS

EQIP Dryland, No-till, & Grass Field Checks!!!

The NRCS will be starting their annual field checks for dryland, no-till, and grass contract obligations for EQIP contract holders. These checks will take place over the next month or so. This past spring, EQIP contract holders received a reminder letter with a map indicating which areas needed to be dryland, no-tilled, or have grass maintained. **Failure to comply with your EQIP contract could result in termination, repayment of funds, and/or penalties.**

Leaf Tissue Samples For CStwP

- Get samples pulled prior to tassel.
- If you are a 2018 applicant and currently do not have a contract, check with your local NRCS to see if you have an early start waiver approved in case you do get a contract for the 2018 crop.

CURTIS'S COLUMN

How to Save an Irrigation or Two or Three without Sacrificing Yield (Part 1 of 2):

During the next 2 issues, I am going to show you some research and observations that show you that we can save some irrigation time, save water in doing so, and not hurt yield, ultimately saving you money.

In this issue of the Irrigator, I want to show you some research work Steve Melvin, then UNL Extension Educator, did a few years back.

From 1996-2001 Steve did research at six sites, Arapahoe, Elsie, Dickens, Benkelman, North Platte, and McCook with different soils. Over the course of 6 years the following **Table 1** shows average yield and average water applied for all six sites. Producer watered is what the producer did. Watered to meet ET was simply irrigating to meet water demand. Water Miser is less water yet and then Deficit is allowing the plant to stress some. As you can see, watering to meet water demands out-yielded the producer while saving 1.3 inches average.

| Table 1 | Producer Watered | Watered to meet ET | Water Miser | Deficit |
|------------------------|------------------|--------------------|-------------|---------|
| Water Applied (Inches) | 12 | 10.7 | 8.4 | 6.2 |
| Yield (Bushels) | 191 | 193 | 185 | 171 |

From 2003-2007, a little closer to home, he did the same thing, minus the producer information, for Holdrege, Culbertson, Holdrege, Curtis, Arapahoe, Loomis, and Bartley with different soils. See **Table 2** below for these results. This time, the Water Miser out-yielded the ET demands while saving 0.9 inches average over the 5 year study.

| Table 2 | Producer Watered | Watered to meet ET | Water Miser | Deficit |
|------------------------|------------------|--------------------|-------------|---------|
| Water Applied (Inches) | | 8 | 7.1 | 4.9 |
| Yield (Bushels) | | 195 | 197 | 180 |

From **Table 2** (2003-2007) I averaged just the Holdrege and Loomis sites since both were on Holdrege Silt Loam soil which is what we have a lot of across the Tri-Basin NRD. See **Table 3** below. This time the yields had a slightly higher bump than the irrigation to meet water demands while saving 1.2 inches average by applying less than water demand and 2.5 inches average with deficit irrigation.

| Table 3 | Producer Watered | Watered to meet ET | Water Miser | Deficit |
|------------------------|------------------|--------------------|-------------|---------|
| Water Applied (Inches) | | 5.4 | 4.2 | 2.9 |
| Yield (Bushels) | | 222 | 223 | 223 |

In the next issue, I will show you my own observations that reiterate what is shown here.



The 2018 Corn Crop and the Central Water Supply:

A holiday windshield survey showed the majority of the corn crop (with the exception of hail damaged fields) at tassel or nearly there across the three counties. Seems we can throw the old “knee high by the 4th of July” adage out along with the yields of days gone by. The 2018 crop is as good or better than any I have seen in my years of working at Central. If the current vegetative growth is any indication of yield, we may need more grain bins.

Lake McConaughy elevation is 3256.5 ft. above mean sea level, 85.8% full; the same or nearly the same as a week ago, a month ago and a year ago. Thanks to timely spring and now early summer rains, the ramping up of water releases through Kingsley Dam for irrigation hasn’t happened yet. Inflows to the lake have been keeping up with required releases. Every day the increased demand is delayed is another day of drought protection added to the system and another day the short snowpack has been mitigated. Rain forecasts have improved somewhat for summer but the D4 exceptional drought remains to our SW in the 4-corners region.

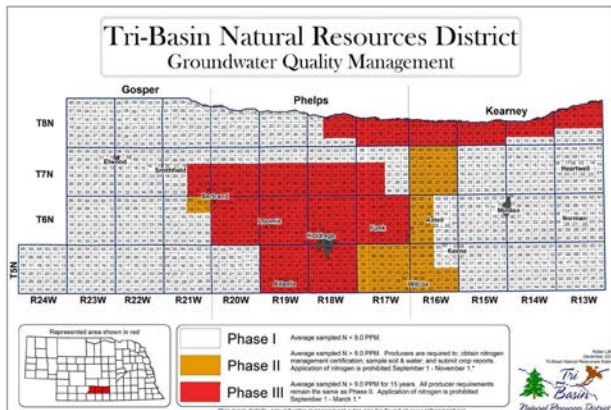
TRI-BASIN NRD NEWS



Remember to take water samples for Nitrogen Management Reports:

If you have fields in Phase 2 or Phase 3 of our Groundwater Quality Management Area (see map), you are required to sample your own irrigation water and test it for nitrates each year. With above average rains in some portions of the district causing a delayed start to the irrigation season, it’s important to remember to collect the water samples once you start irrigating. If possible, you should take samples after the well has been running for a while, to get more accurate results.

The results from the samples you take this irrigation season will be used in nitrogen planning for next year’s crop and reported on your 2019 Nitrogen Management Reports. Sample bottles are available at Tri-Basin NRD and the NRCS offices.



Resistant Palmer Amaranth Field Day:

Nebraska Extension is hosting a free “Glyphosate-Resistant Palmer Amaranth Management Field Day” on Wed., July 11 at Carleton, NE. The on-site demonstration farm is located just south of Highway 4 between C St. and Renwick St in Carleton; or 14.6 miles south & 5.3 miles west of Geneva, NE. GPS: 40°18’24.7”N 97°40’29.0”W

Dr. Aaron Hager, Weed Specialist from the University of Illinois-Urbana-Champaign, will present herbicide-resistant pigweeds research. Field demonstrations will include: 15” vs. 30” row spacing and herbicide programs in Rouudup Ready 2 Xtend soybeans. Other resistant-weed herbicides such as Balance GT/Liberty Link and Enlist E3 soybeans (resistant to 2,4-D choline, glyphosate, and glufosinate) will also be highlighted.

This program will begin with 8:30 am registration (no cost) with rolls & coffee and a sponsored lunch. The educational program will run from 9:00 am – 1:00 pm. Three CCA Credits.

Pre-registration is very appreciated for meals. Register ONLINE at <http://agronomy.unl.edu/palmer> or call 402-472-5636

UNL West Central Fall Field Day – Aug. 23:

“Tackling today’s challenges & tomorrow’s opportunities” will be the theme for the 2018 UNL West Central Research & Extension Center Water & Crops Field Day at North Platte on Thursday, Aug. 23.

Featured field tour topics will include 3 interactive educational tracks: agronomy, economics and hydrology. Also, over 50 technology company representatives will be on-hand through vendor booths. The 2nd Annual TAPS (Testing Ag Performance Solutions) Farmer Panel will provide updates.

For more information, visit: <https://go.unl.edu/water-crops-field-day>. Presented by Nebraska Extension in partnership with Nebraska Water Balance Alliance & Ogallala Water Ag Project.

UNL “Hail Know” website:

Reminder regarding the last Tri-Basin newsletter, the new Nebraska Extension “Hail Know” online educational resource is now available. For many area corn fields devastated by the June 30th hail / wind storm, complete yield losses have likely occurred; since the corn plants were destroyed near the VT (tassel stage) with only stalk stubs remaining. Therefore, if previously applied herbicide labels will allow, producers may be considering replanting; alternative crops or cover crops.

Since hail crop injury varies, field-to-field evaluation is still highly recommended; and UNL hail research may assist producers with their final management decisions. For corn yield loss estimates based on defoliation, see Table III of the EC126 publication “Evaluating Hail Damage to Corn.” It indicates corn at the 13th leaf stage with 100% defoliation would lead to a 34% loss in production. Complete yield losses can occur if all leaf area is destroyed in corn at the VT (tassel stage).

Yield losses from plant stand reductions are still accounted for in corn through the 17th leaf stage. The National Corn Loss Adjustment Standards Handbook on page 81 provides corn yield loss estimates for the 11th to 17th leaf stage.

For soybean injury hail assessment, the UNL “SoyWater” decision-aid for irrigation scheduling can provide a quick way for growth staging after the storm. Estimating soybean yield losses may be evaluated based on node development as well. Every 3.7 days a new node usually develops on soybeans with a target of 18-22 nodes for optimum growing season production.

NAWMN CROP ET INFORMATION

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

Inches of Crop Water Use (ET) =

Evaporation x Kc

| Site | June 18 – June 24 | | June 25 – July 1 | |
|------|-------------------|------|------------------|------|
| | Evaporation | Rain | Evaporation | Rain |
| 1 | 1.20 | 2.05 | 1.80 | 1.90 |
| 2 | 1.40 | 1.60 | 1.80 | 1.25 |
| 3 | 1.10 | 2.77 | 1.40 | 1.20 |
| 4 | 1.20 | 2.00 | 1.80 | 3.30 |
| 5 | 1.30 | 2.41 | 1.50 | 1.95 |
| 6 | 1.10 | 2.05 | 1.30 | 2.40 |
| 7 | 1.30 | 2.60 | 1.70 | 2.20 |
| 8 | 1.30 | 2.54 | 1.85 | 2.28 |
| 9 | 1.30 | 1.65 | 1.60 | 2.66 |
| 10 | 1.30 | 2.75 | 1.70 | 1.85 |
| 11 | 1.20 | 1.84 | 1.60 | 2.50 |
| 12 | 1.10 | 1.67 | 1.70 | 0.99 |
| 13 | 1.10 | 1.45 | 1.40 | 1.46 |
| 14 | 0.90 | 1.73 | 1.00 | 2.17 |
| 15 | 1.30 | 2.50 | 1.70 | 1.00 |
| 16 | 1.20 | 1.49 | 1.50 | 1.08 |

| 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

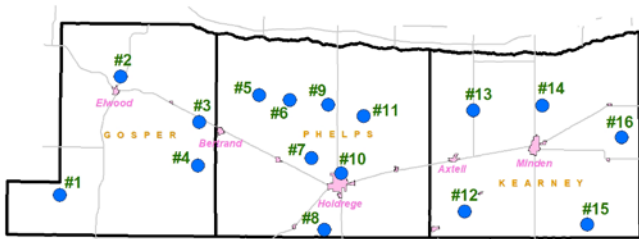
Corn (V12-12 Leaf to R1-Silking stage): Silking is the peak water use period for corn. Moisture stress at silking causes poor pollination and seed set. The result will usually be a nubbin.

Avg. daily water use from June 25 – July 1 was 0.16"-0.28".

Soybeans (V4-4th Node to R2-Full Bloom stage): Vertical root growth increases sharply at R1. Secondary roots and root hairs proliferate after R1 in the top 9 inches.

Avg. daily water use from June 25 – July 1 was 0.13"-0.26".

June 25-July 1 (16 of 16 NAWMN sites reporting): Average weekly rainfall was 1.88 (range 0.99 to 3.30). Average weekly ET for corn was 1.57 and for soybeans was 1.63.



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 |
|----------------------|---------------|--|
| V16 | 16 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. |
| R1 | Silking | Begins when any silks are visible outside the husks. |
| R2 | Blister | The kernels are white on the outside and resemble a blister in shape. The cob should be close to, if not, at full size by R2. The silks begin to dry out and darken in color. |
| Soybean Stage | | DESCRIPTION |
| R2 | Full Bloom | At least one open flower is present at any one of the two uppermost main stem nodes that have fully developed leaves. |
| R3 | Beginning Pod | At least one pod of 3/16" length is present at any one of the four upper most main stem nodes that have a fully developed leaf. It is not uncommon to see pods of greater length at the lower nodes. |

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>.

| | July 5, 2018, 8:00 AM | 1 Year Ago |
|---|--------------------------|------------|
| Capacity of Lake McConaughy | 85.8% | NA |
| Inflows to Lake McConaughy | 1114 cfs | 698 cfs |
| Flows on the North Platte at North Platte | 376 cfs | 1061 cfs |
| Flows on the South Platte at North Platte | 361 cfs | 233 cfs |
| Flows on the Platte at Overton | 963 cfs | 847 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: | June 21 – July 4 | May 1 – July 4 |
|----------------------|------------------|----------------|
| Arapahoe 9.8 NNE: | 1.51 | 9.18 |
| Bertrand 6.1 mi. SE: | 4.77 | 10.09 |
| Funk 4.1 mi. NNE: | 2.29 | 8.80 |
| Minden 0.855 mi. W: | 3.20 | 8.87 |
| Minden 8.8 mi. ESE: | 2.20 | 6.78 |

Average Rain for May–June in Holdrege = 8.04 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
 308-955-6688

Nebraska Extension



1308 2nd Street
 Holdrege, NE 68949
 308-995-4222

PO Box 146
 Elwood, NE 68937
 308-785-2390

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

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