

## PROGRAM INFORMATION

**EQIP: 2023 APPLICATIONS ARE BEING PRE-APPROVED AS FUNDS BECOME AVAILABLE.**

**CSP: 2023 APPLICATIONS ARE BEING PRE-APPROVED AS FUNDS BECOME AVAILABLE.**

**NSWCP: FOR IRRIGATION PRACTICES, HAVE YOUR APPLICATION COMPLETE BY AUGUST 31<sup>ST</sup> FOR FIRST CHANCE AT 2024 FUNDS. APPLICATIONS MUST BE SIGNED BY THE OWNER.**

**ENERGY EFFICIENCY GRANT: NEXT SIGN-UP DEADLINE IS SEPTEMBER 30<sup>TH</sup>. FOR MORE INFORMATION CONTACT JOLENE AT RURAL DEVELOPMENT AT THE KEARNEY USDA SERVICE CENTER AT 308-455-9840 OR AT [JOLENE.JONES@USDA.GOV](mailto:JOLENE.JONES@USDA.GOV).**

## CALENDAR OF EVENTS

- JULY 11: TBNRD BOARD MEETING**
- JULY 23-26: PHELPS COUNTY FAIR**
- JULY 27-29: GOSPER COUNTY FAIR**
- JULY 28-30: KEARNEY COUNTY FAIR**
- AUG 7: CNPPID BOARD OF DIRECTORS MEETING**

### Nitrogen – On-Farm Research Plot

The TBNRD, NRCS, and UNL are working together with Dave and Matt Grimes on an On-Farm Research Plot this year. This research project tests 3 nitrogen application rates, each replicated 4 times. The different N application rates are:

- 235 lbs N per acre
- 195 lbs N per acre
- 155 lbs N per acre

Agronomic information:

- Soil: Holdrege Silt Loam
- Previous Crop: Corn
- Tillage: Shallow Strip-Till
- Irrigation Water: 0.2 ppm nitrates = 0 nitrogen credit
- Plant emergence count: 31,833 average

Fertilizer application plan:

- 11-52-0 Starter = 15 lbs actual nitrogen
- 32% UAN at 6-leaf = different plot rates of nitrogen via sidedress application
- 32% UAN = 50 lbs total actual nitrogen through 2 fertigations.

In addition to the above nitrogen application rates, Pivot Bio was applied to one half of each plot. There are many nitrogen-fixing biological products such as Pivot Bio on the market. Even though TBNRD, NRCS, UNL, and CNPPID do not endorse any of these products, there is an interest to determine if they are effective in local field conditions.

The goal of this research project is to 1. determine the effect of lower nitrogen application rates on crop yield, and 2. determine if a nitrogen-fixing biological product such as Pivot Bio will provide a yield benefit.

See the plot layout on the attached sheet.

## CURTIS'S COLUMN



### UNL Corn Nitrogen Calculator: Realistic Yield Goal

In the last issue I talked about the UNL Corn Nitrogen Calculator. Here I will talk about Realistic Yield Goal (RYG). This is entered on Line 1 of the middle section of the Calculator. Corn nitrogen (N) recommendations start with RYG. A good honest RYG determines the total amount of N corn needs. Aah, but that is not the N recommendation. From there, N credits are deducted to determine the corn's actual N recommendation.

What is a RYG? Is it coffee shop talk, your neighbor's yields, one spot in the field that comes across the monitor, a dream yield, or what? What is your RYG?

Many variables affect yield year in and year out: weather, hybrid, population, fertilizer and irrigation mgt., pests, crop rotation, tillage, soil, etc. A year low yield, don't be quick to blame it on a shortage of nitrogen.

A RYG is a 5-year proven average yield plus 5% for hybrid and technology improvements. Treat each field individually and toss out the extreme years. A 5-year average of 250 bushels plus 5% equals a 262.5 bushel RYG.

If one wants the Calculator to justify how much N they are applying, one can increase the RYG and voila, an increased N recommendation. Just what we wanted, right? We're done. Continue as is. However, does the justified N recommendation maximize net profit? Are we spending more money than what we are getting in return? Be honest with your RYG.

Below are two tables comparing one hybrid from the UNL TAPS program in 2021. (NRCS, TBNRD, CNPPID, and UNL do not endorse any hybrids.) You will see two **UNL (N) recommendations** in yellow based on two RYG's of 252 and 262. Note the amount of N and irrigation applied with resulting yields. Increasing RYG from 252 to 262 and applied nitrogen accordingly, there was no benefit of adding the extra nitrogen. Just money down the drain.

The tables below also appear to indicate a maximum yield below the RYG of 252 without a 5% increase. Utilizing your own annual demos on your own fields will help you find your own maximum profit. The Calculator tool can then be your consistent format for future N recommendations.

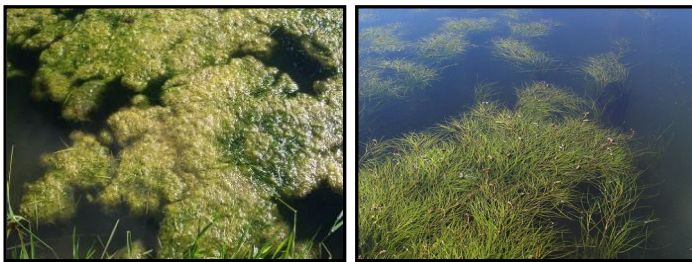
<b>UNL TAPS – PIVOT – CORN 2021</b>				
<b>Pioneer P1366AML</b>				
	<b>Population</b>	<b>Nitrogen</b> UNL=185/194	<b>Irrigation</b> Rain=14.45"	<b>Yield</b> YG=252/262
<b>Team 23</b>	34,000	283	10.3	260
<b>Team 32</b>	34,000	158	9.8	247
<b>Team 22</b>	34,000	158	12.3	244

<b>UNL TAPS – SDI – CORN 2021</b>				
<b>Pioneer P1366AML</b>				
	<b>Population</b>	<b>Nitrogen</b> UNL=165/173	<b>Irrigation</b> Rain=14.45"	<b>Yield</b> YG=252/262
<b>Team 8</b>	33,000	208	9.1	289
<b>Team 10</b>	33,000	153	7.0	275

### Aquatic Weeds

Aquatic weeds, such as filamentous algae, moss, and sago pondweed can make delivering surface water through a canal system difficult without mechanically removing or making treatments throughout the irrigation season to control the aquatic weed growth.

Filamentous algae and moss start as hair like strands that grow toward the water's surface, eventually forming floating mats on the water's surface. Sago pondweed is a bottom rooted aquatic weed that grows up towards the water's surface and grows very thick, which can eventually slow or stop the movement of water. These aquatic weeds can break off and plug the screening of the irrigation delivery point, stopping the flow of water to the irrigation system. Central's irrigation division is constantly on the lookout for these aquatic weeds to remove or treat before they grow and hinder the delivery of surface water for irrigation.



Visit [www.cnppid.com](http://www.cnppid.com) or follow @CNPPID on Facebook, Instagram and Twitter for updates throughout the year.

## TRI-BASIN NRD NEWS



### Assistance to Treat Infestation

Phragmites australis (common reed) is an invasive perennial that is found in wet areas along rivers, ponds, creeks, CRP acres, sub-irrigated ravines, and road ditches. It spreads by both seed and rhizomes, so it can spread tenfold in a single season. It has no forage value for livestock or wildlife.

Landowners are required to control phragmites on their property since it is on Nebraska's Noxious Weed list. The Twin Valley Weed Management Area (TVWMA) and Platte Valley Weed Management Area (PVWMA) have worked diligently over the past several years to combat phragmites along river channels. The TVWMA and PVWMA, with grant funding from the Nebraska Environmental Trust, can aid landowners in treating phragmites.

If you have phragmites on your property, contact your County Weed Superintendent to see if you are eligible to have it sprayed free of charge.



#### **Gosper:**

Marty Craig -  
308-324-3771

#### **Phelps:**

Bobby Hamilton -  
308-991-0139

#### **Kearney:**

Joe Anderson -  
308-832-2854

### New Variable Spraying Technology Featured:

Precision Ag Spraying Technology can reduce herbicide application amounts by 60-80% compared to broadcast applied. New 'detect and spray' systems include: Greeneye Technology™; MagGrow™; Trimble: WEEDSEEKER2™; and John Deere's 'See & Spray Ultimate'™.

During the UNL Weed Management Field Day at Clay Center, a new 'See & Spray Ultimate'™ implement was featured. This machine can detect small fingernail sized & larger weeds at travel speeds above 12 mph in corn and soybean fields.



The target weed sprayer uses 36 mounted cameras; processor; two independent storage chemical tanks; and carbon-fiber truss-structure boom for more efficient herbicide applications including zero chemical waste. Separate mounted spray tanks along with the spot-spray technology reduces potential in-field chemical antagonism and allows nozzle application width adjustment.

### Controlling Chemical Resistant Volunteer Corn

Grass herbicides for controlling volunteer herbicide-resistant corn in soybeans have included: Assure II™/Targa™; Poast™; Fusilade DX™; Poast™; and Select Max™. Liberty™ can be used too with LibertyLink™ soybeans provided the previous corn hybrid used in the field did not include Liberty™ resistance.



For corn-corn-soybean rotation, 'volunteer corn' control in subsequent corn years can be a challenge. UNL South Central Ag Lab – Clay Center plots are researching a possible new herbicide for controlling 'volunteer corn' in continuous corn or corn/corn/soybean rotations.

Where Liberty Link™ and/or Roundup Ready™ herbicide resistance stacked corn traits hybrids were used previously, the clethodim products such as Select Max™ can be used to control volunteer such as corn replant situations. This will work better than paraquat (Gramoxone™)+metribuzin (Tricor™).

Currently, the only POST option to control 'volunteer corn' in continuous corn (where previous stacked corn hybrids with the Liberty Link™ and Roundup Ready™ traits were used) is to plant **Enlist™** corn (tolerant to 2,4-D choline plus glyphosate) and spray **Assure II™** (quizalofop) during the second year. Note: if **Enlist™** corn hybrids are used in a previous year, then growing volunteer **Enlist™** corn will be resistant to **Assure II™** herbicide sprays the following year.

In UNL demonstration plots at Clay Center, a new AMV52330 herbicide (possibly will be named **Liberty Plus™**) is in study. Following Liberty™ application recommendations, higher spray volumes (15-20 gallons per acre) will likely be needed to get complete coverage of the volunteer corn leaves. Thus, the **Liberty Plus™ + Assure II™** spray applications will work best when applied early in the growing season.

### UNL Fall Field Day @ Clay Center, NE – Aug. 1

"Image-based Fertilization Scheduling" will be the featured topic of the UNL SC Fall Field Day - Clay Center – Tue., **Aug. 1** from 8:30 a.m. – 3:10 p.m. Other topics will include: Irrigation Scheduling Technology; Weed Suppression with Cover Crops & Planting Green; Sensor-based Fertilization; Corn & Soybean Insect Updates; Nutrient Management / Fertilization Demo., and interactive "See & Spray™" demonstration.

Lunch provided. Register at: <https://go.unl.edu/scalfieldday>.

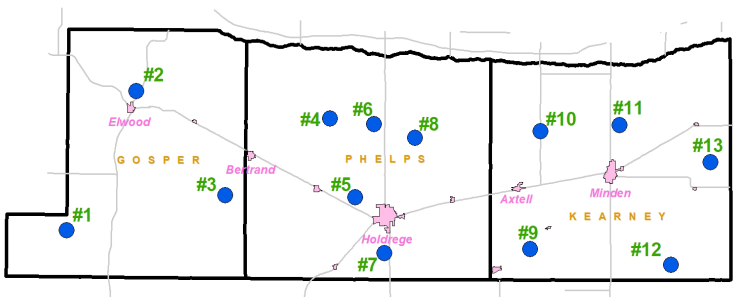
## NAWMN CROP ET INFORMATION

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

Site	June 19 – June 25		June 26 – July 3	
	Evaporation	Rain	Evaporation	Rain
1	1.60	0.32	1.70	0.96
2	1.50	0.83	1.50	1.65
3	1.60	1.10	1.50	1.22
4	NA	NA	NA	NA
5	1.40	0.48	1.50	0.91
6	1.60	0.70	1.40	0.84
7	1.50	1.11	1.50	1.00
8	1.30	0.27	1.30	0.82
9	1.50	0.42	1.30	0.85
10	1.30	0.25	1.30	1.16
11	1.40	0.33	1.40	1.32
12	1.30	0.40	1.60	1.00
13	1.30	0.89	1.40	1.50



**2023 Map of NAWMN Sites across the Tri-Basin NRD**

### 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 (V8-8 Leaf to V18-18 Leaf stage):** Number of ovules that will be fertilized is being determined at Silking. Environmental stress, especially moisture stress, needs to be avoided. Stress will usually result in a nubbin.

Avg. daily water use from June 26 – July 2 was 0.09"-0.27".

**Soybeans (V6-6th Node to R1-Beg. Bloom stage):** Stress is not as critical in early stages. Soybeans can compensate by adding pods through R5. R4 is the beginning of the most crucial period to avoid stress in terms of yield.

Avg. daily water use from June 26 – July 2 was 0.14"-0.22".

June 26-July 2 (12 of 13 NAWMN sites reporting): Average weekly rainfall was 1.10 (range 0.82 to 1.65). Average weekly ET for corn was 1.35 and for soybeans was 1.18.

### CROP ET INFORMATION

**NAWMN:** <https://nawmn.unl.edu/ETdata/DataMap>

**TBNRD:** <https://www.tribasinrd.org/tbawmn>

**UNL CropWatch:** <https://cropwatch.unl.edu/qdd-etdata> NEW

**Texting (Daily):** Sasha @ TBNRD: 308-995-6688

**Email (Weekly):** Curtis @ NRCS: 308-995-6121, Ext. 3

CORN STAGE		DESCRIPTION
V16	16 Leaves	Leaf stage is defined by number of leaves with collars. The collar is a discolored line where the leaf meets the stalk. This line circles the stalk. After V6-6 Leaf, lower leaves will be lost.
R1	Silking	Begins when any silks are visible outside the husks.
R2	Blister	The kernels are white on the outside and resemble a blister. The cob should be at or near full size by R2. The silks are beginning to dry out and darken in color.

SOYBEAN STAGE		DESCRIPTION
V8	Eighth Node	V8 has 8 nodes on main stem with a trifoliate leaf with unfolded leaflets (leaflet edges are no longer touching). (Plant has 9 nodes total on main stem: 1 unifoliate + 8 trifoliate)
R1	Beginning Bloom	At least one open flower is present at any main stem node.
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.



## LAKE AND RIVER LEVELS

CNPPID Reservoir Elevation and Capacity as well as 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 6, 2023, 8:00 AM	1 Year Ago
<b>El. &amp; Cap. – Lake McConaughy</b>	<b>3234.9 ft - 56.0%</b>	<b>3234.0 ft - NA%</b>
<b>Inflows to Lake McConaughy</b>	<b>1500 cfs</b>	<b>276 cfs</b>
<b>Flows on the North Platte at North Platte</b>	<b>NA cfs</b>	<b>822 cfs</b>
<b>Flows on the South Platte at North Platte</b>	<b>3580 cfs</b>	<b>126 cfs</b>
<b>Flows on the Platte at Overton</b>	<b>5090 cfs</b>	<b>757 cfs</b>



## WEBSITES OF INTEREST

NRCS Nebraska [www.ne.nrcs.usda.gov](http://www.ne.nrcs.usda.gov)  
 Farm Service Agency [www.fsa.usda.gov](http://www.fsa.usda.gov)  
 TBNRD Home Page [www.tribasinrrd.org/](http://www.tribasinrrd.org/)  
 Central Irrigation District [www.cnppid.com/cropwatch.unl.edu](http://www.cnppid.com/cropwatch.unl.edu)  
 UNL Cropwatch [cropwatch.unl.edu](http://cropwatch.unl.edu)  
 UNL Extension [extensionpubs.unl.edu/](http://extensionpubs.unl.edu/)  
 K-State SDI Website [www.ksre.ksu.edu/sdi](http://www.ksre.ksu.edu/sdi)  
 No-till On The Plains [www.notill.org](http://www.notill.org)  
 Soil Health: [www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/](http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/)  
 NE State Irrig Assoc [www.nebraskastateirrigationassociation.org/](http://www.nebraskastateirrigationassociation.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 22 – July 5	May 1 – July 5
Elwood 1.81 mi. NW:	1.40	8.11
Loomis 0.2 mi. SW:	2.94	10.04
Holdrege 1.7 mi. W:	2.23	8.27
Minden 7.2 mi. W:	1.73	6.86
Minden 5.8 mi. E:	2.49	7.17

**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@usda.gov](mailto: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 2<sup>nd</sup> 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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**Total Nitrogen:**  
Lbs of Actual "N" to Apply per Plot

