Tri-Basin Irrigator

Volume 16, Issue 10 *September 8, 2016*

Program Information

EQIP, CSP, and ACEP:

EQIP – Sign-up cutoff date for 2017 funds is Oct. 21, 2016.

NSWCP: Applications can be taken at your local NRCS office. The Tri-Basin NRD has suspended approval of NSWCP applications for all practices except flow meters and soil moisture sensors until January 2017, due to a shortage of cost-share funds. Flow meter and soil moisture sensor applications will continue to be funded monthly. Applications must be signed by the owner. Installation work cannot be started until approved.

ENERGY EFFICIENCY GRANT: Sign-up deadline for 2017 funds is October 31, 2016. For more information contact Kelley Messenger at the Kearney USDA Service Center at 308-237-3118, Ext. 120.

Calendar of Events

Sept 13: TBNRD Board Meeting – 7:30 PM

Sept 13-15: Husker Harvest Days – goto *http://huskerharvestdays.com/* for more information.

Oct 3: CNPPID Board of Directors Meeting – 9 am

EQIP Information!!!

*** 2017 Timeline:** Sign-up cutoff date for 2017 funds is October 21, 2016. An application signed after this date will not be reviewed for another year. Pre-approvals and contract obligations can begin as soon as all **ELIGIBLE** applications have been ranked and funds are available. Work cannot be started until a contract has been obligated. Work started prior to an obligated contract will no longer be eligible for EQIP funds.

*** Eligible Applications:** For an application to be ranked for 2017 funds, it must be eligible prior to ranking. That means the applicant must have filed an AD-1026 "HELC/WC Certification" with FSA and a CCC-941 "Adjusted Gross Income" with FSA. Legal Entities will also need to include a CCC-901 "Member's Information", obtain a DUNS Number, and be registered with SAM. Notification will be sent after October 21st notifying ineligible applicants of what's needed to becoming eligible.

*** DUNS Numbers and SAM Registrations:** If you have an entity that will be receiving EQIP, CSP, etc. payments, that entity needs to get a DUNS number and be registered with SAM. This does not include individual social security numbers. So, if you already have an EQIP application or will be signing up for 2017 EQIP funds and an entity will be paid in the contract that entity will need to get a DUNS number and SAM registration in order to be eligible for 2017 ranking. You must have a DUNS number before registering with SAM. Also, SAM must be renewed annually. For DUNS, goto *http://fedgov.dnb.com/webform/displayHomePage.do*. For SAM, goto *https://www.sam.gov/index.html/#1#1*. Or stop by your local NRCS office for more information. **NOTE: You do not need to pay for DUNS or SAM.**

Curtis's Column

NEW Cost-Share Practices under NSWCP:

The Nebraska Natural Resources Commission has approved cost-share on Variable Rate Irrigation (VRI) and Variable Frequency Drive's (VFD). VRI allows a producer to customize their water application on their sprinkler system through speed control, zone control, or nozzle control. VFD is used to vary the shaft speed of the pump to alter flow rate and/or pressure. Each NRD has different rules, so check with your local NRCS office for more information.

EQIP, AWEP, and CSP Contract Holders!!!

2016 Certification and Records need completed.

- **CSP:** This fall, all CSP contract holders will need to certify contract obligations and choose payment for 2016 or 2017. If wanting paid in 2016, all contract obligations need to be certified prior to Thanksgiving. REMINDER, if you have Pumping Plant Evaluations that need completed, get these completed prior to winterizing wells. 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 2016 irrigation records to their local NRCS office. 2013, 2014, 2015, and 2016 contract holders will get paid after complete records have been submitted. Records include crop grown, soil moisture levels, flow meter readings, crop ET's, and rainfall.
  - All CNPPID AWEP contract holders need to submit their 2016 irrigation records to CNPPID. Contact Marcia Trompke at CNPPID for more information.
- **Water Use Reports:** The NRD requires your tillage info on these reports (acres of no-till, conventional till, etc). Deadline for submitting these reports to the **Tri-Basin NRD** is November 18, 2016.
- **Nitrogen Management Reports:** See tillage info requirements under Water Use Reports above. Deadline for submitting these reports to the **Tri-Basin NRD** is December 31, 2016.

How to Calculate Total Water Pumped in 2016

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 in 2016

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

REMINDER!!!

SAM Registration Renewal

Website link located on page 4.

CNPPID NOTES

Irrigation Season End:

The 2016 season is all but complete although the Smithfield area is lagging behind Holdrege and Minden on GDD according to weather station calculations. The table below shows cumulative corn GDD and ET (crop water use) from the three stations for corn emerging May 10th and soybeans emerging May 20th and the cumulative rainfall since May 1. The root zone was holding an additional 7.5" of water in the top 3.5' on May 1.

Station	Precip	ET corn	ET beans	GDD corn
Hold 4N	9.49	18.94	16.02	2486
Minden	7.35	19.01	16.27	2506
Smithfield	12.83	18.65	16.29	2374

Much of this rain came in May and June when crop water use was low as shown below. The soybean crop north of Funk received 10" of irrigation water via the sub-surface drip system this year; and because a late August rain came just after an irrigation event, the soil profile is full. If you are far from this 10" number, it is a good time to upgrade your irrigation system; it will save water and energy costs in every future season.

Station	May	June	July	Aug	Sept
Hold 4N	4.17	2.35	1.75	1.08	0.14
Minden	3.02	0.81	1.60	1.54	0.20
Smithfield	3.63	3.93	3.26	1.94	0.07

TRI-BASIN NRD NEWS

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.

Tri-Basin Staff to Inspect Meters:

With irrigation season winding down, Tri-Basin NRD staff members are beginning annual irrigation meter inspections. Each year, we take readings from meters in about one-third of the townships in the district.

This year we will be doing inspections in the following townships: Kearney County: 5N-13W, 6N-13W, 7N-13W, and 8N-13W; Phelps County: 5N-17W, 6N-17W, 7N-17W, 8N-17W; and Gosper County: 5N-22W (Union Township), 5N-21W, 6N-21W, 7N-21W, and 8N-21W.

If you have irrigation wells in these townships and you put your meters in storage for the winter, you can call the Tri-Basin NRD office at 1-877-995-6688 to schedule an inspection.

If there is no meter at the site when we come to inspect, you will receive a letter requesting access to the meter for inspection.

NEBRASKA EXTENSION EXTRAS

Last Soybean Irrigation:

Soybean maturity is dependent upon day length; also, water usage can vary depending on the year. Generally, irrigators start reducing stored soil profile moisture as crops start drying down four to six weeks before crop physiological maturity. The average target is soils dried down to 40% available water by maturity. Physiological maturity with corn and grain sorghum is defined as the time when kernels or seeds form a black layer at the kernel tip. For soybeans, beginning maturity is when one normal pod on the main stem has reached its mature pod color.

Our NebGuide G1871 "Predicting the Last Irrigation of the Season" provides end of season irrigation worksheets for corn, grain sorghum and soybeans. Usually, soybeans are only 10 days from beginning maturity when the plants reach R6.5 growth stage (leaves begin to yellow). At this point, soybeans will need 1.9 inches of water to complete dry matter production.

ETgages and soil water sensors can be helpful for timing the last soybean irrigation for the growing season. ETgages measure crop water usage while the soil water sensors record how much water remains in the soil. These tools can help irrigators calculate how much water the crop will need to finish out the year. Nebraska Extension's "cornsoywater.unl.edu" app or "crop water" app can help to determine last irrigation.

Pivot Pressure Regulator Testing @ Husker Harvest Days:

Nebraska Extension is offering free testing of center pivot irrigation pressure regulators at the IANR building all three days of Husker Harvest Days September 13-15 in Grand Island. Chuck Burr, Irrigation Extension Educator, is coordinating this free Nebraska Extension service during this annual event. Irrigators are encouraged to bring two regulators per pivot span for testing. They can be dropped off at the IANR building in the morning and picked up, along with a report, later that day.

Regulators typically work correctly for many years, but should be inspected regularly for damage or malfunction. Regulators have a flexible membrane that may rupture over time and lead to water spraying out the sides of the regulator. Spring tension also wears down over time. If the spring becomes weak, it decreases the pressure of the water going through the regulator and increases the flow rate. Irrigators may see the irrigation system pressure decrease and the gallons per minute increase on a flow meter. These issues may indicate failed regulators. For more information on pressure regulators see NebGuide G-88-888-A: http://go.unl.edu/nmcm.

Irrigated & Rainfed Winter Wheat Resources:

Cropwatch at http://cropwatch.unl.edu has many special feature topics regarding both irrigated and dryland wheat production. Topics include: Winter Wheat Varieties Test Results; 2016 Wheat Average Protein Contents; Value of Wheat in Crop Rotation; Stripe Rust Wheat Ratings; Fall Strategies for Managing Wheat Diseases; Volunteer Weed Control; and Winter Wheat Seeding Dates & Rates Recommendations.

Rex McClain hosted the Nebraska Extension Furnas County Winter Wheat Variety (Rainfed) Test Plot in 2016 just NE of Beaver City, NE. This year's plot had a plot yield average of 94 bushels per acre with 15 varieties pegging 100 to 107 bushels per acre. The top 10 dryland wheat varieties included: Freeman; Antero; Westbred 4721; Limagrain 14-71; Ruth; Monument; Byrd; Grainfield; Robidoux; and Denali.

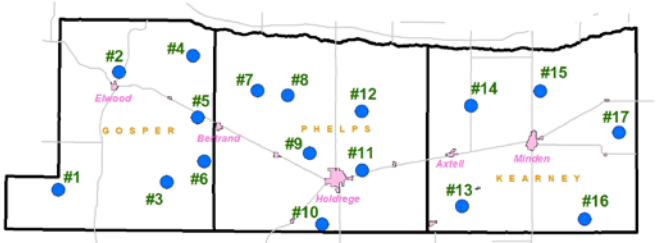
Top West Central Irrigated winter wheat varieties include: Brawl; Cedar; Limagrain T158; Wolf; Denali; Antero; Byrd; Settler; Wesley; and Robidoux.

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

	Aug 22 – Aug 28		Aug 29 – Sept 4	
Site	Evaporation	Rain	Evaporation	Rain
1	1.30	1.05	1.00	0.25
2	1.20	0.32	1.10	1.15
3	1.30	1.64	1.00	0.45
4	1.10	0.60	1.00	0.83
5	1.00	1.42	0.90	0.15
6	0.70	1.95	1.00	0.27
7	0.90	1.38	0.80	0.12
8	1.10	1.30	0.80	0.20
9	1.20	0.90	0.90	0.33
10	1.30	0.75	1.20	0.30
11	1.20	0.70	1.00	0.12
12	1.00	1.06	1.00	0.07
13	1.20	0.25	1.10	0.82
14	1.20	0.32	1.20	0.23
15	1.20	0.12	1.00	0.39
16	1.40	1.30	1.20	0.83
17	1.20	0.25	1.00	0.48



2016 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 (R5.5-Full Dent to R6-Black Layer) stage): Black Layer signals the end of kernel growth for the season. Many husks and leaves are no longer green although the stalks may be. Average kernel moisture at R6 is 30-35%. This can vary depending on hybrids and environmental conditions.
Avg. daily water use from Aug 29 – Sept 4 was 0.07"-0.17".

Soybeans (R6-Full Seed to R7-Beginning Maturity stage): R8, Full Maturity is when 95% of the pods have reached their mature pod color. 5-10 days are required after R8 before soybeans have less than 15% moisture.
Avg. daily water use from Aug 29 – Sept 4 was 0.10"-0.19".

Aug 29 – Sept 4 *(17 of 17 NAWMN sites reporting): Average weekly rainfall was 0.41 (range 0.07 to 1.15). Average weekly ET for corn was 0.87 and for soybeans was 1.07.*

ET Information Sites

NAWMN Sites:
http://www.cnppid.com/news-info/weatheret-data/nebraska-agricultural-water-management-network/
https://nawmn.unl.edu/ETdata/DataMap
CropWatch: http://cropwatch.unl.edu/gdd-etdata
CNPPID: http://www.cnppid.com/news-info/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, 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, 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%. 0.0 inches needed for yield.

Soybean Stage		DESCRIPTION
R6.5	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.
R8	Full Maturity	95% of the pods have reached their mature pod color.

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://www.cnppid.com/wp-content/uploads/2016/05/WPelevation_flows.html.

	Sept. 8, 2016, 8:00 AM	1 Year Ago
Capacity of Lake McConaughy	87.4%	NA%
Inflows to Lake McConaughy	1771 cfs	1202 cfs
Flows on the North Platte at North Platte	1952 cfs	1444 cfs
Flows on the South Platte at North Platte	262 cfs	275 cfs
Flows on the Platte at Overton	2396 cfs	688 cfs

If there is anything better than to be loved, it is loving.

- Unknown

Websites of Interest

SAM Registration	www.sam.gov
Climate	agclimatenebraska.weebly.com
NRCS Nebraska	www.ne.nrcs.usda.gov
Central Irrigation District	www.cnppid.com
TBNRD Home Page	tribasinnrd.org
Farm Service Agency	www.fsa.usda.gov
UNL Cropwatch	cropwatch.unl.edu
UNL Extension	http://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 http://nerain.dnr.ne.gov/NeRAIN/docs/report.asp.

Location:	Aug 25 – Sept 7	May 1 – Sept 7
Arapahoe 6.9 NW:	0.22	11.07
Bertrand 6.1 mi. SE:	0.38	12.99
Funk 4.1 mi. NNE:	0.56	8.27
Minden 0.855 mi. W:	1.34	7.98
Minden 8.8 mi. ESE:	1.50	7.64

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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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

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308-785-2390

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