

PROGRAM INFORMATION

EQIP, CSP, WHIP, WRP, CREP, & CONT. CRP:

APPLICATIONS FOR FUNDING ASSISTANCE AND/OR ANNUAL PAYMENTS CAN BE TAKEN ANYTIME AT YOUR LOCAL USDA SERVICE CENTER. **CSP: APPROVALS FOR CSP WILL BE ANNOUNCED IN THE NEAR FUTURE. AWEP: A PLATTE BASIN AWEP HAS BEEN APPROVED AND SIGN-UP WILL BE ANNOUNCED SHORTLY. ELIGIBLE PRACTICES WILL BE CONVERTING IRRIGATED LAND TO DRYLAND FOR 5 YEARS OR PERMANENTLY. CONVERSION TO DRYLAND GRASS IS ALSO ELIGIBLE.**

NSWCP: APPLICATIONS FOR COST-SHARE CAN BE TAKEN ANYTIME AT YOUR LOCAL NRCS OFFICE. FLOW METER AND NON-IRRIGATION APPLICATIONS ARE REVIEWED FOR APPROVALS MONTHLY. IRRIGATION APPLICATIONS WILL BE REVIEWED FOR APPROVAL IN SEPTEMBER.

ENERGY EFFICIENCY GRANT: APPLICATIONS FOR 2011 CAN BE TAKEN AT ANYTIME. CONTACT KELLEY MESSENGER WITH RURAL DEVELOPMENT AT 308-237-3118, EXT. 4.

CALENDAR OF EVENTS

JULY 28-31: GOSPER COUNTY FAIR

AUG 2: CNPPID BOARD OF DIRECTORS MEETING 9 AM

AUG 10: TBNRD BOARD MEETING 1:30 PM

How Much Pivot Capacity Is Needed?

Year in and year out, there is talk about falling behind. Pivots cannot keep up with crop demands. We need to irrigate now to build the soil moisture supply in order to carry the crop through the peak water use season. A question I have always had and have never really asked is, why have we fallen behind and why do we stay there? If the concern is supplying crop water use demands during peak season, then what pivot capacity is needed in order to not fall behind? The following is an example of determining how much capacity one wants their pivot to have.

- Full circle 1290 ft. pivot = 120 acres under nozzles
- Average peak crop water use (ET) for corn and soybeans in south central Nebraska is approximately 0.33 in. per day.
- A low pressure pivot is approximately 90% efficient.

0.33 in. per day / 0.90 efficiency = 0.36667 inches of water per day to apply to meet average peak ET.

- Irrigate 23.5 hours per day on average.

$$\text{GPM} = \frac{453 \text{ (given)} \times 120 \text{ ac} \times 0.36667 \text{ inches}}{23.5 \text{ hours}}$$

848 GPM is required under the nozzles to meet average peak ET for corn and soybeans.

If you wish to have an end gun on your pivot, add approximately 100 GPM. The pivot package would need to be 950 GPM to meet average peak ET with an end gun. See example on page 2 for how much water an 800 gpm pivot package can apply.

If you have questions about pivot capacities before ordering your next pivot, call Curtis Scheele at 308-995-6121, Ext. 3.

ACROSS THE TRI-BASIN NRD

Ultrasonic Flow Meter Measurements Are Available!!!

Again in 2010, you can request an ultrasonic flow meter measurement with no cost to you. That's right, no cost to you! The ultrasonic flow meter is a portable flow meter that clamps onto the outside of the pipe. It determines flow through the use of two sensors.

The ultrasonic flow meter can be used to determine how much water your well is pumping. It can tell you how much water is going into your pivot system. It can be used to determine how much water you are losing from leaky gates and gaskets. It can be used to determine the amount of water you are applying to your field. It can also be used to check your permanently installed flow meter.

If you wish to request an ultrasonic flow meter measurement, you can contact Curtis Scheele at 308-995-6121, Ext. 3 to schedule an appointment.

Stage of Growth:

Corn (R1-Silking stage to R3-Milk stage): Silking is the peak water use stage for corn. Nitrogen and Phosphorus uptake is rapid. Environmental stress at this time can greatly reduce yield. At Blister, the kernels are at 85% moisture and will start declining til harvest. Roots should be drawing moisture from 3 feet.

Average daily water use from July 19-July 25 was 0.16"-0.24".

Soybeans (R2-Full Bloom stage to R5-Beginning Seed stage): At R3, stress from moisture, light, nutrients, etc. through R6 (Full Seed), will reduce yields more than any other time. Roots should be drawing moisture from 3 feet.

Average daily water use from July 19-July 25 was 0.20"-0.22".

Irrigation:

Rains have picked their locations. Some locations are not as fortunate as others. There was some hail a couple of weeks ago. Not sure of the damage. Dryland is looking good. It would be nice to finish it on a strong note with some good rains. I've heard that some dryland may even look better than the irrigated. In an area with lesser rain, the dryland is starting to show some stress. *July 19-July 25 (13 of 13 NAWMDN sites reporting): average weekly rainfall was 0.76" (range 0.13" to 1.42") and average weekly ET for corn was 1.37" and for soybeans was 1.43".*

Lake McConaughy is at 91.0% capacity versus 52.5% a year ago. Inflows to Lake McConaughy are at 1985 cfs versus 802 cfs a year ago. Flows on the South Platte River @ North Platte are at 406 cfs versus 140 cfs a year ago.

Rainfall:

Rainfall amounts come from NeRAIN which can be found at website <http://dnrdata.dnr.ne.gov/NeRAIN/index.asp?&>.

<u>Location:</u>	<u>July 1 – July 14</u>	<u>May 1 – July 14</u>
Arapahoe 6.9 mi. NW:	0.00"	11.35"
Bertrand 6.1 mi. SE:	0.88"	14.39"
Funk 12.5 mi. N:	3.39"	14.31"
Wilcox 0.3 mi. SW:	2.18"	17.90"
Minden 0.855 mi. W:	0.99"	17.63"

NAWMDN CROP ET INFORMATION

Additional Atmometer sites and Weather Station Data can be found at websites listed under "ET Information Sites" below.

7 Days = July 12-July 18 7 days = July 19-July 25

Inches of Crop Water Use (ET) = Evaporation x Kc

Atmometer Station: Arapahoe 7 Northwest (#6)
Evaporation: Week #1 = 1.65 inches Week #2 = 1.50 inches

Atmometer Station: Elwood 1 East (#7)
Evaporation: Week #1 = 1.65 inches Week #2 = 1.30 inches

Atmometer Station: Bertrand 4 Southwest (#8)
Evaporation: Week #1 = 1.50 inches Week #2 = 1.20 inches

Atmometer Station: Bertrand 6 Northeast (#12)
Evaporation: Week #1 = 1.30 inches Week #2 = 1.30 inches

Atmometer Station: Holdrege 5 Southeast (#9)
Evaporation: Week #1 = 1.50 inches Week #2 = 1.40 inches

Atmometer Station: Axtell 5 Northeast (#5)
Evaporation: Week #1 = 1.50 inches Week #2 = 1.20 inches

Atmometer Station: Minden 11 Southeast (#2)
Evaporation: Week #1 = 1.60 inches Week #2 = 1.00 inches

Atmometer Station: Heartwell 4 Southeast (#4)
Evaporation: Week #1 = 1.45 inches Week #2 = 1.00 inches

		<u>Crop Coefficients (Kc)</u>	
		<u>Corn</u>	<u>Soybeans</u>
<u>Stage</u>	<u>Kc</u>	<u>Stage</u>	<u>Kc</u>
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, Bl., Dough	1.10	Beg. Seed (R5)	1.10
Beg. Dent	1.10	Full Seed (R6)	1.10
Full Dent	0.98	Beg. Mat. (R7)	0.90
Black Layer	0.60	Full Mat. (R8)	0.20
Full Maturity	0.10	Mature	0.10

ET Information Sites

NAWMDN Sites:
www.cnppid.com/ET_Map_location_page2010.htm
elkhorn.unl.edu/ETGage/index.jsp
 Water Use Hotline: 1-800-993-2507
 Central Irrigation District: www.cnppid.com/ETdata2009.htm
 Cropwatch: www.ianr.unl.edu/cropwatch/weather/gdd-et.html

Websites of Interest

NRCS Nebraska www.ne.nrcs.usda.gov
 Central Irrigation District www.cnppid.com
 TBNRD Home Page tribasinprd.org
 Farm Service Agency www.fsa.usda.gov
 UNL Cropwatch cropwatch.unl.edu
 UNL Extension www.extension.unl.edu/home
 UNL Water extension-water.unl.edu
 K-State SDI Website www.oznet.ksu.edu/sdi
 No-till On The Plains www.notill.org
 No-till Notes www.npnrd.org/notill.htm

Example from article on Page #1. How Much Water Can An 800 GPM Pivot Package Apply?

- Full circle 1290 ft. pivot = 120 acres under nozzles
- A low pressure pivot is approximately 90% efficient.
- Irrigate 23.5 hours per day on average.
- 800 GPM minus 100 GPM for an end gun = 700 GPM under the nozzles.

$$700 \text{ GPM} = \frac{453 \text{ (given)} \times 120 \text{ ac} \times X \text{ inches}}{23.5 \text{ hours}}$$

$$X \text{ inches} = 0.30 \text{ inches per day}$$

$$0.30 \text{ inches per day} \times 0.90 \text{ efficiency} =$$

**0.27 inches of water can be applied per day
with an 800 GPM Pivot Package**

Under the new SCS, conservation practices were being applied on demonstration farms but some felt there wasn't enough local grass roots support. From a recommendation by M.L. Wilson came the birth of local Soil Conservation Districts.

*** 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. ***

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