

Tri-Basin Irrigator

Volume 08, Issue 7

Serving Gosper, Phelps, and Kearney Counties

July 31, 2008

PROGRAM INFORMATION

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

APPLICATIONS FOR FUNDING ASSISTANCE OR ANNUAL PAYMENTS CAN BE TAKEN AT YOUR LOCAL USDA SERVICE CENTER.

NSWCP: APPLICATIONS FOR COST-SHARE ASSISTANCE CAN BE TAKEN ANYTIME AT YOUR LOCAL NRCS OFFICE. **AUGUST 26TH IS THE APPLICATION CUTOFF DATE IN ORDER TO BE REVIEWED FOR APPROVAL AT THE TBNRD'S SEPTEMBER MTG. IRRIGATION, NON-IRRIGATION, AND FLOW METER APPLICATIONS WILL BE REVIEWED IN SEPTEMBER.** THE NEXT TIME IRRIGATION APPLICATIONS WILL BE REVIEWED FOR APPROVAL WILL BE AT THE DECEMBER MTG. FLOW METER AND NON-IRRIGATION APPLICATIONS WILL CONTINUE TO BE REVIEWED MONTHLY. **FLOW METERS COST-SHARED THROUGH NSWCP ARE REQUIRED TO READ IN ACRE-INCHES AND CANNOT HAVE A RESETTABLE TOTALIZER.**

CALENDAR OF EVENTS

- JULY 30-AUGUST 2:** GOSPER COUNTY FAIR
AUG. 4: CNPPID BOARD OF DIRECTORS MEETING 9 AM
AUG. 6: SOUTH CENTRAL AG LAB FIELD DAY: [LINK TO - CROPWATCH.UNL.EDU/ARCHIVES/2008/CROP17/EVENT_SCAL.HTM](http://CROPWATCH.UNL.EDU/ARCHIVES/2008/CROP17/EVENT_SCAL.HTM).
AUG. 12: TBNRD BOARD MEETING 1:30 PM
AUG. 12-15: SOYBEAN MGT FIELD DAYS: [LINK TO - CROPWATCH.UNL.EDU/ARCHIVES/2008/CROP17/EVENT_SMFD.HTM](http://CROPWATCH.UNL.EDU/ARCHIVES/2008/CROP17/EVENT_SMFD.HTM).
SEPT. 3: IRRIG. AND ENERGY CONSERVATION FIELD DAY
[LINK TO - EVENTS.UNL.EDU/IANR/2008/9/3/](http://EVENTS.UNL.EDU/IANR/2008/9/3/).

Water to the Crops per Gravity Set???

How much water are you actually getting to the crops with one irrigation set? The answer to this question starts with your flow meter. Knowing this answer will give you more accurate information that can be used in your irrigation water management program. With crop prices where they are, one would not want to rob the crop of water. With fuel prices where they are, one would not want to pump more water than what was needed.

So with your flow meter, the first thing to be done is to determine the rate at which water is being pumped through the irrigation system. If a propeller type flow meter, you need to time the odometer to get a more accurate pumping rate.

I have worked up two examples that are shown on page two of this newsletter. One example is for a flow meter that reads in gallons and the other is for a flow meter that reads in acre-inches. In these examples we will assume no water losses to friction, leaky gates, nor leaky gaskets.

If you would like to know how much water you are applying and do not have a flow meter OR just have some questions about this, you can call Curtis Scheele at 308-995-6121, Ext. 3.

ACROSS THE TRI-BASIN NRD

Irrigation Strategies Field Tours Scheduled!!!

Too much water costs extra money, too little water reduces yields. How do you get the optimum amount of water? Attend one of the following tours to learn about irrigation strategies.

- **Aug. 5th @ 6 PM, Alma:** ¼ mile south of junction US Hwy 183 and Hwy 42A (Huntley Road). Tour starts on east side.
- **Aug. 11th @ 6 PM, Axtell:** 3 ¾ miles north of junction US Hwy 6 and 24 Road (1 mile east of Axtell). East side.
- **Aug. 14th @ 2 PM, Edison:** 1/8 mile east of intersection Road 728 & Road 432. South side.
- **Aug. 15th @ 10 AM, Edison:** Repeat of Aug. 14th. See above.
- **Aug. 19th @ 10 AM, Loomis:** ¼ mile east of intersection 733 Road and E Road. North side.
- **Aug. 28th @ 5 PM, Upland:** 6 miles east of junction Hwy 4 & Hwy 10 near 38 Road. South side of Hwy 4.

There are other tours located further from the Tri-Basin NRD. They are near Gothenburg, Ainsworth Imperial, Benkelman, and Curtis. If you want more information about any of the these tours, you can contact Steve Melvin at 308-367-4424.

Stage of Growth

Corn (Silking (R1) to Milk (R3) stage): Corn is drawing moisture from the third foot root zone. Environmental stress at silking stage causes poor pollination and seed set, especially moisture stress. Stress at the milk stage, although not as severe as at silking, can still have a profound effect on yield. As kernels mature, yield reduction from stress becomes less.

Soybeans (Beginning Bloom (R1) to Full Pod (R4) stage): Beginning pod is taking moisture from the third foot root zone. Full Pod marks the most crucial period of plant development in terms of seed yield determination. Environmental stress from R4 to shortly after R6 (Full Seed) will reduce yields more than at any other period of development. Stressful conditions from R1 through R3 generally do not reduce yields because some flowers can still be produced until about R5 (Beginning Seed).

Irrigation

We have missed some promising rains. With the peak water use season underway, irrigation is in force. Using the atmometers over the last week, corn at silking/blister/milk has been averaging about 0.22 inches per day of water use. Soybeans over the last week have been averaging about 0.18 inches per day (beginning bloom) to 0.22 inches per day (full pod).

Lake McConaughy is at 37.6% capacity versus 30.3% a year ago. Inflows to Lake McConaughy are at 564 cfs versus 429 cfs a year ago. Flows on the South Platte River @ North Platte are at 110 cfs versus 278 cfs a year ago.

Rainfall

Rainfall amounts come from NeRAIN which can be found at website <http://dnrdata.dnr.ne.gov/NeRAIN/index.asp?&>.
Rainfall totals – **July 17 thru July 30:**

Arapahoe 6.9 mi. NW	0.92"
Bertrand 6.1 mi. SE	1.34"
Funk 12.5 mi. N	1.19"
Wilcox 0.3 mi. SW	1.16"
Minden 4.4 mi. NW	1.16"

NAWMDN CROP ET INFORMATION

Additional Atmometer sites and Weather Station Data can be found on CNPPID's website at <http://www.cnppid.com/ETdata2008.htm>.

7 Days = July 14-July 20 7 days = July 21-July 27

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

- Atmometer Station: Arapahoe 8 Northwest (#8)
Evaporation: Week #1 = **2.10 inches** Week #2 = **1.60 inches**
- Atmometer Station: Elwood 1 East (#9)
Evaporation: Week #1 = **1.70 inches** Week #2 = **1.50 inches**
- Atmometer Station: Bertrand 4 Southwest (#10)
Evaporation: Week #1 = **1.80 inches** Week #2 = **1.40 inches**
- Atmometer Station: Loomis 7 North (#13)
Evaporation: Week #1 = **1.40 inches** Week #2 = **1.40 inches**
- Atmometer Station: Holdrege 1 Southeast (#11)
Evaporation: Week #1 = **1.35 inches** Week #2 = **1.30 inches**
- Atmometer Station: Odessa 5 Southeast (#4)
Evaporation: Week #1 = **1.40 inches** Week #2 = **1.25 inches**
- Atmometer Station: Minden 10 South (#2)
Evaporation: Week #1 = **1.50 inches** Week #2 = **1.50 inches**
- Atmometer Station: Heartwell 4 Southeast (#5)
Evaporation: Week #1 = **1.40 inches** Week #2 = **1.50 inches**

		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, 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:
http://www.cnppid.com/ET_Map_location_page.htm
<http://elkhorn.unl.edu/ETGage/>
 Water Use Hotline – dial 1-800-993-2507
 Central Irrigation District: www.cnppid.com
 KRVN radio broadcasts or www.krvn.com

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
- HPRCC www.hprcc.unl.edu
- Farmers Almanac www.farmersalmanac.com
- Chat 'n Chew Café <http://www.kingcorn.org/cafe>
- No-till On The Plains www.notill.org

Water to the Crops per Gravity Set??? (Examples)

36 in. rows (3 ft.), 80 gates every other row (160 rows) = 480 ft.
 480 ft. * 1300 ft. row length = 624,000 sq. ft.
 624,000 sq. ft. / 43,560 = **14.3 acres in the set**
 With a **12 hour set**, assume **50% efficiency** with no reuse.

Ex. 1 (Flow Meter reads in gallons):

Timed 12000 gallons over 10 minutes = 1200 gpm
 1200 gpm x 12.0 hour set x 60 min/hr = 864,000 gallons
 864,000 gallons / 27154 / 14.3 acres (set) = 2.22 inches
 2.22 inches x 0.50 efficiency = 1.11 inches applied to crop.

Ex. 2 (Flow Meter reads in acre-inches):

Timed 0.45 ac-in over 10 minutes = 0.045 ac-in per minute
 0.045 ac-in x 12.0 hour set x 60 min/hr = 32.4 ac-in
 32.4 ac-in / 14.3 acres (set) = 2.26 inches
 2.26 inches x 0.50 efficiency = 1.13 inches applied to crop.

Of all the crafts, to be an honest man is the master craft.

- John Ray

*** 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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