Tri-Basin Irrigator

Volume 11, Issue 4 *June 23, 2011*

Program Information

EQIP, AWEP, CSP, WHIP, WRP, & many more: Applications for 2012 funds can be taken anytime at your local NRCS office. Applications must be approved prior to starting any installation work.

NSWCP: New money comes July 1st. Applications for cost-share can be taken at your local NRCS office. Applications must be approved prior to starting any installation work.

ENERGY EFFICIENCY GRANT: Application deadline is past due for 2011 funds. 2011 approvals will take place later this summer. Applications for 2012 funds will be taken after October 1, 2011. For more information contact Kelley Messenger with Rural Development at the Kearney USDA Service Center or at 308-237-3118, Ext. 4.

Calendar of Events

July 4: Independence Day – Gov't Offices Closed
July 5: CNPPID Board of Directors Meeting 9 am
July 12: TBNRD Board Meeting 1:30 pm

Tool to Determine Crop Water Use – Part 2

In the last issue, you were introduced to the 2011 NAWMN. This network is a tool for area and participating producers to use when scheduling irrigations. The information gathered is used to determine how much water their crops are using. The following is an example of how to use this tool.

Step 1: Go to one of the two websites found on page 2 of this newsletter (under the section "ET Information Sites"). Select an atmometer station nearest your field and determine the amount of evaporation (reference ET) that has taken place. A general map of atmometer locations is shown on page 2. In our example, evaporation is 1.8 inches for the week.

Step 2: Determine your crop stage for the field you are working with. Once you know your crop stage, you can easily determine your crop coefficient (Kc). You can find Kc numbers on page 2 of this newsletter. They will also be listed on the charts at the above mentioned websites. In our example, corn is at 12 leaf, so the Kc equals 0.88.

Step 3: Calculate ET or Crop Water Use. Simply multiply evaporation (reference ET) by your crop stage coefficient (Kc): 1.80 inches * 0.88 Kc = 1.584 inches was used by your corn for the respective week. To calculate average daily water use, simply divide by 7 days: 1.584 inches / 7 days = 0.226 inches used per day. NOTE: Pay attention to days as some evaporation weekly readings may be over a 6 or 8 day stretch.

As one gets used to this tool, one can tweak it to better work for their irrigation water management program. As shown above, one can calculate daily water use. Another option is by knowing the weather forecast, one can project an estimated crop water use over the next few days.

If you have any questions or need assistance getting started, call Curtis Scheele at 308-995-6121, Ext. 3.

Across the Tri-Basin NRD

A general observation of soil moisture levels.

Most of the soil moisture sensors on the NAWMN have been hooked up to dataloggers. An observation of these few sites on Monday, June 20th has shown that the majority of the NRD is at field capacity down to 4 foot depths. I do not have any data yet from Minden north and east. The only exception of being at field capacity to 4 foot depths are two sites west of Highway 283 in Gosper County. The two sites ended the 2010 crop year with an average of 70% moisture at the 3 foot depth. On June 20, 2011, the 3 foot depth was at 95% moisture between the two sites. There were not sensors at the 4 foot depth in 2010. There are 4 foot sensors in 2011 and they show an average of 90% moisture between these two sites. The rainfall amounts reflect this observation. Based off this information, I would not expect Minden and points north and east to be at a full profile to a 4 foot depth either. I would expect them to be in that 90% range at the 3 and 4 foot depths. The above observation is all based off silt loam soils. As we all know individual fields can vary. Factors include how wet the soil was when the 2010 crop year ended, rainfall locations, no-till, etc. The only way one knows for sure where they are at is with the use of soil moisture sensors.

Stage of Growth:

Corn (V4-4 leaf to V10-10 leaf stage): The growing point and tassel are above the soil surface at the 6-leaf stage. The tassel starts to develop rapidly at the 9-leaf stage.
Average daily water use from June 13-June 19 was 0.04"-0.14".
Soybeans (V1-1st Node to V4-4th Node stage): From V2-V5, the lateral roots are growing rapidly in the top 6 inches of the soil between the rows. By V5, they will completely reach across a 30" row.
Average daily water use from June 13-June 19 was 0.04"-0.13".

Irrigation:

The morningglory is running at Lake McConaughy for the first time ever. Take a weekend trip to see it before they close the gates. Producers haven't been taking CNPPID's water due to soils being at field capacity. Because of the mountain elevation of all the high snows and the cool temperatures, it's not certain just how the river flows will play out as we move through the year.

June 13-June 19 (14 of 14 NAWMN sites reporting): average weekly rainfall = 1.86" (range 0.77" to 2.72") and average weekly ET for corn = 0.67" and for soybeans = 0.60".

Lake McConaughy is at 97.6% capacity versus 83.0% a year ago. Inflows to Lake McConaughy are at 8949 cfs versus 6287 cfs a year ago. Flows on the South Platte River @ North Platte are at 1230 cfs versus 6885 cfs a year ago.

Rainfall:

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

Location:	June 9 – June 22	May 1 – June 22
Arapahoe 6.9 mi. NW:	4.18	8.61
Bertrand 6.1 mi. SE:	2.74	11.89
Funk 6.7 mi. NNW:	1.56	10.10
Minden 0.855 mi. W:	1.94	7.84
Minden 8.8 mi. ESE:	1.41	7.76

NAWMN Crop ET Information

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

7 Days = June 6-June 12 7 days = June 13-June 19

Atmometer Station: Arapahoe 7 Northwest (#1)
Evaporation: **Week #1 = 1.70 inches** **Week #2 = 1.50 inches**

Atmometer Station: Elwood 1 North (#2)
Evaporation: **Week #1 = 1.70 inches** **Week #2 = 1.50 inches**

Atmometer Station: Bertrand 4 Southwest (#4)
Evaporation: **Week #1 = 1.10 inches** **Week #2 = 1.00 inches**

Atmometer Station: Bertrand 6 Northeast (#5)
Evaporation: **Week #1 = 1.60 inches** **Week #2 = 1.40 inches**

Atmometer Station: Holdrege 5 Southeast (#8)
Evaporation: **Week #1 = 1.70 inches** **Week #2 = 1.50 inches**

Atmometer Station: Funk 7 Northeast (#10)
Evaporation: **Week #1 = 1.90 inches** **Week #2 = 1.50 inches**

Atmometer Station: Minden 5 North (#12)
Evaporation: **Week #1 = 1.70 inches** **Week #2 = 2.00 inches**

Atmometer Station: Minden 11 Southeast (#13)
Evaporation: **Week #1 = 1.70 inches** **Week #2 = 1.50 inches**

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

Crop Coefficients (Kc)

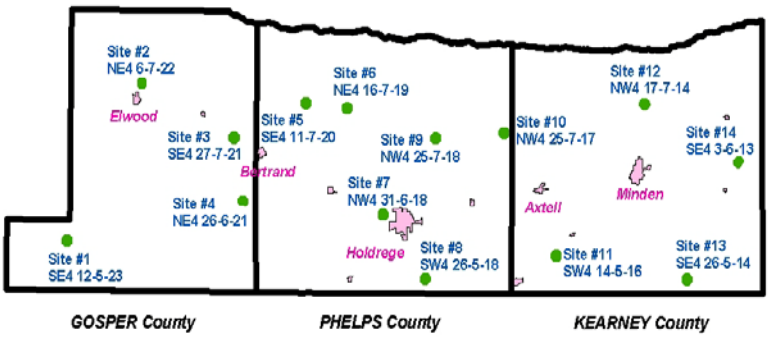
Corn		Soybeans	
Stage	Kc	Stage	Kc
2 leaf	0.10	Cotyledon (VC)	0.10
4 leaf	0.18	1st Node (V1)	0.20
6 leaf	0.35	2nd Node (V2)	0.40
8 leaf	0.51	3rd Node (V3)	0.60
10 leaf	0.69	Beg. Bloom (R1)	0.90
12 leaf	0.88	Full Bloom (R2)	1.00
14 leaf	1.01	Beg. Pod (R3)	1.10
16 leaf	1.10	Full Pod (R4)	1.10
Silk – Beg. 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

ET Information Sites

NAWMN Sites:
www.cnppid.com/ET_Map_location_page2011.htm
elkhorn.unl.edu/ETGage/
Water Use Hotline: dial 1-800-993-2507
CropWatch: *cropwatch.unl.edu*
Central Irrigation District: *www.cnppid.com*

Websites of Interest

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	*www.extension.unl.edu/home*
UNL Water	*extension-water.unl.edu*
K-State SDI Website	*www.ksre.ksu.edu/sdi*
No-till On The Plains	*www.notill.org*
No-till Notes	*www.npnrd.org/notill.htm*



2011 NAWMN Sites

Invest in children. They are the one thing you can take to heaven.
- ?????

**** 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-NRCS
1609 Burlington Street
PO Box 798
Holdrege, NE 68949-0798
308-995-6121, Ext. 3

USDA-NRCS
309 Smith Street
PO Box 41
Elwood, NE 68937-0041
308-785-3307, Ext. 3

USDA-NRCS
1005 South Brown Street
Minden, NE 68959-2601
308-832-1895, Ext. 3