

PROGRAM INFORMATION

EQIP, CSP, Etc.

EQIP – YOU CAN SIGN-UP ANYTIME FOR 2016 FUNDS AT YOUR LOCAL NRCS OFFICE. A CUTOFF DEADLINE WILL BE ANNOUNCED LATER THIS SUMMER/FALL.

CSP – NEW 2015 APPLICATIONS ARE CURRENTLY BEING APPROVED AND CONTRACTS WRITTEN ACCORDINGLY.

NSWCP: NEW COST-SHARE MONEY COMES JULY 1ST.

APPLICATIONS CAN BE TAKEN AT YOUR LOCAL NRCS OFFICE.

ENERGY EFFICIENCY GRANT: APPLICATIONS FOR 2015 FUNDS CAN STILL BE TAKEN. DEADLINE IS JUNE 30TH.

CONTACT RURAL DEVELOPMENT IN KEARNEY AT 308-237-3118, EXT. 4.

CALENDAR OF EVENTS

JUNE 21: FATHER'S DAY

JULY 4: INDEPENDENCE DAY – GOV'T OFFICES CLOSED

JULY 6: CNPPID BOARD OF DIRECTORS MEETING 9 AM

JULY 14: TBNRD BOARD MEETING 1:30 PM

Tool to Determine Crop Water Use – Part 2

In the last issue, you were introduced to the 2015 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 your crops are using. The following is an example of how to use this tool.

Step 1: You need to know the crop stage of the crop in the field you are working with. There are descriptions at the bottom of page 3 to assist you. Once you know your crop stage, you can determine your crop coefficient (Kc). You can find Kc numbers on page 3. 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 2: Go to one of the two asterisked websites found on page 3 of this newsletter (under "NAWMN 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 3. In this example, evaporation will be 1.8 inches for the week.

Step 3: Calculate ET or Crop Water Use. Multiply evaporation (reference ET) by your crop stage coefficient (Kc): 1.80 inches * 0.88 Kc = 1.584 inches used by your corn for the respective week. To calculate average daily water use, divide by 7 days: 1.584 inches / 7 days = 0.226 inches used per day.

As a side note, when you go to either of these websites, there will be charts showing you weekly crop water use, thus eliminating your need to calculate the weekly use.

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.

CURTIS'S COLUMN



Early 2015 Soil Moisture Information – Follow-up from the Last Issue:

In our last issue the 1 dryland site near Holdrege had 100% moisture in the top three feet and 84% moisture at the 4th foot. On June 15th, all four feet were at 100% moisture. This dryland field is soybeans no-tilled into corn residue.

<i>Dryland (1 site near Holdrege)</i>		
Soil Depth	Sept. 25, 2014	June 15, 2015
1 foot	75%	100%
2 foot	58%	100%
3 foot	44%	100%
4 foot	46%	100%
4 ft. avg.	56%	100%

When to Start Irrigating?:

Right now with all the recent rains, this seems like a question that doesn't need asked. But we all know the rains can stop and summer can hit us hard. So with a full moisture profile, how long can we go before we need to think about irrigating? There are so many variables such as no-till versus conventional till, corn versus beans, residue amounts, soil health, irrigation system capacity, current crop stage, etc. that play a role.

Soil moisture sensors are an excellent way to know when the first irrigation should take place. They can fine tune our moisture levels and give us a really good starting point for moving forward into the irrigation season. Once we have this starting point, we can calculate water in and water used throughout the season. This is called the "Checkbook Method". Sensors can then be used as a check periodically. Or you can schedule irrigations simply based off what your sensors tell you.

But just for discussion, let's see where we are at and make some predictions. At 100% profile, Holdrege Silt Loam soils will hold 6.75 inches of Available Water Capacity (AWC). If you can apply water on the same day across the entire field, then guidance says you can use up to 50% of this moisture before irrigating. We can't do that and so we will set a target to irrigate at 65% moisture. In other words, use 35% of the moisture before irrigating.

6.75 inches AWC at 100% profile multiplied by 35% water use (0.35) equals 2.36 that can be used in a 3 foot profile. The 17 atmometers across the NRD have averaged 1.3 inches of evaporation the last couple of weeks. For corn at 2 leaf progress per week then we will be at peak use in about 4 weeks. If evaporation increases to 1.5 inches per week and average Kc is 0.88 over the next four weeks, then crop use will be 5.28 inches. That would mean irrigating in about 12 days. Again this is based off a goal of irrigating at 65% moisture when starting from a full profile. It's fun discussion. Check the NAWMN websites on Tuesday's to see what the atmometer evaporations are per week for the next couple of weeks just to see if they are near 1.5 inches per week of evaporation. These websites are on page 3 of this newsletter. Again, this is just a discussion to get you thinking about when you should first irrigate and maybe offer a tool for you to watch and help you out. There are a lot of variables that can twist all this up.

Central Allocations:

Central and its producers are continuing with a 12" allocated season, counterintuitive to a reactionary approach to improved water conditions and Platte River flooding. Several logical reasons for this exist, not the least of which is the field capacity to saturated soil conditions throughout the area.

Standard planning for an irrigation season begins in July and August of the prior year. Staff recommendations of water delivery options are voted on by the Central Directors at their September meeting so our producers have a known water supply and can plan and purchase inputs accordingly in the fall.

In allocated seasons, producers can give up their water to a pool, transfer water between fields within their operation or pick up water from the pool in November through January. With transfers in place, water scheduling begins in February and producers can request water delivery days and flow rates for specific fields, sometimes doing so to take advantage of electric power interruptible rates. Irrigation Service Specialists (ISS) schedule every canal to match all requests possible and keep canal flows steady in order to run at peak efficiency.

Reversing these transfer arrangements can be done but the rescheduling takes time. Conditions ahead of the 2009 and 2010 seasons allowed us to move to a higher allocation and a full supply respectively; but conditions had changed prior to December. This year, the shift from a dry to a wet North Platte River came one week prior to our irrigation season; too late for an effective reschedule. Rains provided excess water through the first week of the 2015 season. We are moving forward with complete confidence that a full profile, a 12" allocation and more rain in the forecast will meet crop water needs.



Chemigation Inspections Delayed by Rain:

Large amounts of rain in some portions of Tri-Basin NRD have made it difficult to schedule routine chemigation inspections. Once conditions are more favorable, our staff will be extremely busy. You can help by making sure all your chemigation equipment is functioning properly before our staff arrives for inspections. If routine inspections are not completed on systems that are due this year, those permits will not be renewable next year.

If you have new chemigation permits that need to be inspected, please contact our office to schedule those appointments as soon as your equipment is ready. New systems must be inspected before they can be used.

Periodic Flowmeter Checks Suggested:

Check flowmeters on your wells periodically throughout the irrigation season. Making sure that your flowmeters are working properly benefits both Tri-Basin NRD and you, as an irrigator, so that you can keep accurate irrigation records. It is the responsibility of producers to make sure flowmeters function properly during the irrigation season.

It has also come to our attention that producers who have Senninger brand flowmeters may want to make sure the batteries they are using are the correct size. These meters take lithium 3.6 volt batteries instead of standard 1.5 volt AA batteries. Using standard AA batteries will cause these flowmeters to not work properly.

Climate Outlook:

Temperatures finally warmed up for the area over the last couple weeks. The average highs were in the low 80s and average lows were in the upper 50s. The second week of June brought some hot weather as a ridge moved over the area. Temperatures reached the mid to upper 90s with dewpoints in the 60s, which made for some uncomfortable conditions. Precipitation amounts were above normal and came in a few events 4 to 5 days apart, which is positive for infiltration rates and crop water use. With this recent precipitation, soil moisture levels are adequate and should easily provide enough moisture to get crops through the hot and dry conditions predicted for the next week.

Table: Precipitation and Temperature Summary for June 1-16

Station	Precipitation (in)		Temperature (°F)		
	Total	% of Normal	Avg Max	Avg Min	Dep. From Normal
Smithfield	2.61	127%	80.1	58.7	+1.1
Holdrege	2.27	112%	81.3	58.8	+1.4
Holdrege 4N	4.37	212%	80.8	58.8	+1.2
Minden	6.19	299%	80.6	59.1	+0.8

The models are currently predicting a slow, but consistent, decrease in soil moisture for the Tri Basin area through the middle of next week with above normal temperatures expected. This is being driven by a west-to-east upper level pattern and a northward movement of the jet stream. This will take the bulk of the moisture north of Nebraska and allow temperatures to climb into the 90s. Small precipitation chances remain over the weekend and into next week, but are primarily accounting for the enhanced surface moisture and isolated thunderstorms that tend to easily pop up in June.

The models are showing some precipitation chances by the end of next week with an upper level pattern shift. This may cause a few disturbances over our area, but the confidence remains low in the location and timing of any of these potential disturbances. Take this for what it's worth, but the current GFS model is predicting 0.10-0.50" of precip through June 25th and 1.0-1.5" through July 3rd for the area.

It looks like we may head back into a more variable weather pattern next weekend, so enjoy a few days of warm, dry weather, which should allow field operations to resume.
-Tyler Williams, Nebraska Extension Educator

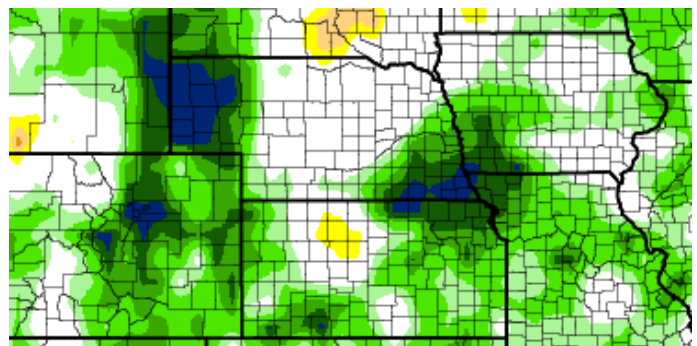


Figure: Percent of normal soil moisture as of June 16.

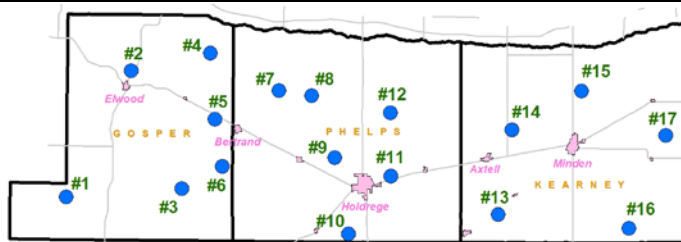
NAWMN CROP ET INFORMATION

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

Site	June 1 - June 7		June 8 - June 14	
	Evaporation	Rain	Evaporation	Rain
1	1.20	0.90	1.30	1.80
2	1.30	1.00	1.20	1.43
3	1.50	1.50	1.10	1.92
4	1.20	1.14	1.40	1.10
5	1.10	1.00	1.20	1.22
6	1.40	1.45	1.10	2.35
7	1.10	1.85	1.30	0.95
8	1.10	1.84	1.50	1.08
9	1.10	1.52	1.30	3.17
10	1.20	0.89	1.40	1.22
11	1.10	2.00	1.30	1.80
12	0.70	2.34	1.20	1.15
13	1.20	1.95	1.30	0.98
14	1.20	2.42	1.30	4.95
15	0.90	4.86	1.50	2.82
16	0.80	1.40	2.00	2.10
17	0.80	2.80	1.40	1.22



2015 Map of NAWMN Sites Across the Tri-Basin NRD.

Corn Stage		DESCRIPTION
V6	6 Leaves	Leaf stage is defined by number of leaves with visible collars. The collar is a discolored line where the leaf meets the stalk. This line circles the stalk. TIP: Mark the 6th leaf or a higher leaf by cutting a notch in it or some other way so as to know that leaf number. Reason is the lower leaves will be lost as the plant develops. Flag or somehow mark the plant in the field as a reference plant when determining later leaf (vegetative) stages.
V10	10 Leaves	
V14	14 Leaves	
Soybean Stage		DESCRIPTION
V2	Second Node	Two trifoliate leaves with unrolled or unfolded leaflets. (3 nodes: 1 unifoliate + 2 trifoliates)
V(n)	Nth Node	Additional nodes continue to grow as plants develop.
R1	Beginning Bloom	At least one open flower is present at any main stem node.

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 (V5-5 Leaf to V11-11 Leaf stage): At 6-leaf, the growing point and tassel are above the soil surface and the stalk is beginning a period of increased elongation. At 9-leaf, the tassel begins to develop.

Avg. daily water use from June 8 – June 14 was 0.05"-0.15".

Soybeans (V1-First Node to V4-Fourth Node stage): At V2, lateral roots are growing rapidly between the rows in the top 6 inches. Nitrogen-fixation begins at the V2-V3 stage and will increase until the R5-R6 stage.

Avg. daily water use from June 8 – June 14 was 0.08"-0.12".

June 8-June 14 (17 of 17 NAWMN sites reporting): Average weekly rainfall was 1.84 (range 0.95 to 4.95). Average weekly ET for corn was 0.55 and for soybeans was 0.68.

ET INFORMATION SITES

NAWMN Sites:

- * <http://www.cnppid.com/news-info/weatheret-data/nebraska-agricultural-water-management-network/>
- * http://elkhorn.unl.edu/ETGage/xml/NE_counties_2.jsp

CropWatch: <http://cropwatch.unl.edu/gdd-etdata>

CNPPID: <http://www.cnppid.com/news-info/weatheret-data/>

Water Use Hotline: 1-800-993-2507

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/news-info/reservoirriver-data/>.

	June 18, 2015, 7:00 AM	1 Year Ago
Capacity of Lake McConaughy	92.6%	65.5%
Inflows to Lake McConaughy	5,181 cfs	778 cfs
Flows on the North Platte River at North Platte	488 cfs	238 cfs
Flows on the South Platte River at North Platte	7,270 cfs	3,157 cfs

A clear and innocent conscience fears nothing.

- Queen Elizabeth I

WEBSITES OF INTEREST

NRCS Nebraska www.ne.nrcs.usda.gov
 Central Irrigation District www.cnppid.com
 TBNRD Home Page tribasinrnr.org
 Farm Service Agency www.fsa.usda.gov
 UNL Cropwatch cropwatch.unl.edu
 UNL Extension www.extension.unl.edu/home
 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:	June 4 – June 17	May 1 – June 17
Arapahoe 6.9 NW:	2.82	6.55
Bertrand 6.1 mi. SE:	4.66	9.82
Funk 4.1 mi. NNE:	4.70	7.36
Minden 0.855 mi. W:	3.59	7.29
Minden 8.8 mi. ESE:	4.31	10.43

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@ne.usda.gov. ***

USDA - Natural Resources Conservation Service

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 South Brown Street
 PO Box 798
 Holdrege, NE 68949-0798
 308-995-6121, Ext. 3

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



Street 1005
 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
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Nebraska Extension

1308 2nd Street
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