**PROGRAM INFORMATION**

**EQIP:** Contracts currently being written on pre-approved applicants. As additional funds become available, additional pre-approvals may take place.

**CSP:** New 2020 pre-approved applications are currently having contracts signed and submitted for official contract obligation. – Renewal applications will be assessed and ranked after October 1st.

**NSWCP:** New funds have arrived. Get your irrigation applications in by August 31st for first chance approvals.

**ENERGY EFFICIENCY GRANT:** Sign-up deadline for 2021 funds is October 31, 2020. For more information contact Kelley at Rural Development at the Kearney USDA Service Center at 308-455-9837 or kelley.messenger@usda.gov.

**CALENDAR OF EVENTS**

Aug 11: TBNRD Board Meeting
Aug 27: Virtual WC Water and Crops Field Day.
More information forthcoming
Sept 7: Labor Day – Gov’t offices closed
Sept 8: CNPPID Board of Directors Meeting

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**Soil Moisture Sensor Charts**

**Chart 1 (Data View):** Individual Sensors representing 4, 16, 28, 36, and 48 Inch Depths.

1. In this chart, you can see the 4” sensor really move up and down. Up spikes are rains and irrigations. Downward, stair-stepping (day/night effect) is the crop using moisture. The deeper the depth, the ups and downs are more subtle.

2. Since sensor installation (left side of chart), the 48” sensor has stayed level. The crop isn’t using moisture at that depth. Roots are not there. – At the 36” depth, the roots just started taking moisture around July 1st. The irrigations and rains since have kept the crop from using moisture at this depth. Level lines mean moisture not being used due to dryness, no roots, or an input/output equilibrium.

3. The numbers on the left of the chart are representative numbers only and need to be treated solely for each sensor. Notice how each sensor never starts on the same scale. Treat them individually.

4. The trend in the summary line is moving upward. This is adding moisture to the profile and thus a sign of overirrigation, rains on top of irrigations, or too much rain.

5. Keeping the black line in the bottom half of the green and irrigating when at the bottom edge is good. During peak use on this chart, the bottom of the green is at 82% moisture. Plenty good. Save the top half for rain.

6. End the year at the orange line (70-72%) or below. We can get below that at 60-65%. Across the TBNRD, we end the year at 76% moisture on average at crop maturity. It will take some getting used to and trust in sensors to get there.

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**Chart 2 (Season View):** Summary Chart based off root depth. This chart represents 11 out of 12 sensors to a 44 inch depth.

**Curtis’s Column**

**CSP and EQIP REMINDERS!!!**

1. For those needing to plant cover crops, contact your local NRCS office.
2. Make an appointment at your local NRCS office to turn in your fertilizer, pesticide, irrigation, etc. records.

**Soil Moisture Sensor Charts:**

This article is referring to the two sensor charts shown on the left side of this page. Both charts represent the same field as of August 4th. This is only one type of sensor. There are multiple types in the field that have their own way of presenting the information. Depending upon the sensor you have, hopefully this article will help you understand what you are seeing and possibly stir up some thinking while providing you with questions that you can ask your dealer.

**Chart 1 – Shows the individual sensor depths individually:**

1. This chart, you can see the 4” sensor really move up and down. Up spikes are rains and irrigations. Downward, stair-stepping (day/night effect) is the crop using moisture. The deeper the depth, the ups and downs are more subtle.

2. Since sensor installation (left side of chart), the 48” sensor has stayed level. The crop isn’t using moisture at that depth. Roots are not there. – At the 36” depth, the roots just started taking moisture around July 1st. The irrigations and rains since have kept the crop from using moisture at this depth. Level lines mean moisture not being used due to dryness, no roots, or an input/output equilibrium.

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Soil moisture sensors do a really good job of telling you what’s going on in the soil. You need to understand what they are saying and what is going on around them. This gives you a starting point. You will need to communicate with your dealers and others who use them. Remember the learning curve with your cell phone? Same thing. You may need to leave your comfort zone to develop a trust in the sensors. You are investing in soil moisture sensors to help you in your irrigation scheduling. Patience and trust is a part of that investment.
In February, the ISS create 1 week or 2 week schedules (depending on what the customer wants) for the customers to follow during the irrigation season.

During the off season, these ISS join the 10 Equipment Operators Central employs in the irrigated area to help repair and improve Centrals delivery systems for the next irrigation season. Along with the repairs and improvements during the winter months, Central’s ISS also deliver water to different Waterfowl Production Areas groundwater recharge projects throughout the irrigated area, which is a whole new challenge with cold weather and ice.

Find us at www.cnppid.com or @CNPPID on Facebook, Instagram, Twitter and LinkedIn.

Irrigation Season Reminders:

Chemigation: Our staff has been busy with new and routine chemigation inspections. If your systems are due for a routine inspection, you will receive a call from our office to schedule those. New permit inspections must be conducted prior to use and routine inspections due this year must be completed by the end of this irrigation season.

Water Samples: Our staff are also taking samples from irrigation wells for our Water Quality testing program. If you have crop reports due each year, do not forget to take water samples from your irrigation wells for those reports.

Irrigation Meters: You should periodically check your irrigation flowmeters to make sure they are working correctly. If you do not think your meter is working correctly, our staff or Curtis Scheele at NRCS office can check flow rates using an ultrasonic flowmeter. If you have a meter repaired during the irrigation season, please contact the NRD and note the meter reading before removing. Doing so will make it easier to reconcile any movement of the propeller while the meter was being repaired. If you have questions about reinstalling your flowmeter or about your meter readings, contact our office at 1-877-995-6688.

2020 Nebraska Extension Winter Wheat Plot Results:

The new 2020 Nebraska Extension Winter Wheat Varieties Performance Test Results are now on our CropWatch website: https://cropwatch.unl.edu/winter-wheat-variety-test-results.

Terry Woollen again hosted a replicated South Central rainfed test plot on his wheat field NW of Alma, NE. The 2020 wheat plot average was 66 bu./A compared to 100.50 bu./A the previous year. This year’s plot featured 33 different wheat varieties with yields ranging from 38 to 94 bu/A, with the top 12 varieties including: Westbred-WB4699; Westbred-Grainfield; Limagrain-LCS Link; Limagrain-LCS Chrome: UNL NW15443; Westbred-WB4269; UNL-NHH144913-3; Agri-Pro Syngenta-SY Monument; AgriMaxx-AM Cartwright; CROPLAN Winfield United-CP7869; and Kansas Wheat Alliance-Zenda.

Irrigated wheat comparison is also available through the Box Butte Panhandle location which includes both irrigated and rainfed plot results. Other locations include: Red Willow County –Cook; Lincoln County-North Platte; & Perkins County-Grant.

Nebraska Extension Cover Crop Selector Tool:

A free Cover Crop Selector Tool was released in 2019 and now includes cover crop mixes. This tool compliments the Midwest Cover Crops Field Guide: ID-433 http://mccc.msu.edu/covercrops tool/covercrops tool.php and also links the Midwest Cover Crops Council: http://mccc.msu.edu.

Users can prioritize inputs such as: nitrogen source, nitrogen scavenger, soil building, erosion fighter, weed fighter, good grazing, quick growth, lasting residue, and winter survivability. The user can then click on the individual cover crop description and learn specific information, such as planting rates and timing, termination methods and timing, and benefits & disadvantages of growing cover crops.

These resources will guide new growers through cover crop planning and preparation, fall work, spring work, and adjustments needed for cropping rotations with cover crops to improve soil health.
NAWMN CROP ET INFORMATION

Additional Information and other ET resources can be found at websites listed under “Crop ET Information” below.

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

### Crop Coefficients (Kc)

#### Corn

<table>
<thead>
<tr>
<th>Stage</th>
<th>Kc</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 leaf</td>
<td>0.10</td>
</tr>
<tr>
<td>4 leaf</td>
<td>0.18</td>
</tr>
<tr>
<td>6 leaf</td>
<td>0.35</td>
</tr>
<tr>
<td>8 leaf</td>
<td>0.51</td>
</tr>
<tr>
<td>10 leaf</td>
<td>0.69</td>
</tr>
<tr>
<td>12 leaf</td>
<td>0.88</td>
</tr>
<tr>
<td>14 leaf</td>
<td>1.01</td>
</tr>
<tr>
<td>16 leaf</td>
<td>1.10</td>
</tr>
<tr>
<td>¼ Milk Line</td>
<td>1.04</td>
</tr>
<tr>
<td>Full Milk Line</td>
<td>0.98</td>
</tr>
<tr>
<td>Full Dent</td>
<td>0.79</td>
</tr>
<tr>
<td>Black Layer</td>
<td>0.60</td>
</tr>
<tr>
<td>Full Maturity</td>
<td>0.10</td>
</tr>
</tbody>
</table>

#### Soybeans

<table>
<thead>
<tr>
<th>Stage</th>
<th>Kc</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cotyledon (VC)</td>
<td>0.10</td>
</tr>
<tr>
<td>1st Node (V1)</td>
<td>0.20</td>
</tr>
<tr>
<td>2nd Node (V2)</td>
<td>0.40</td>
</tr>
<tr>
<td>3rd Node (V3)</td>
<td>0.60</td>
</tr>
<tr>
<td>Beg. Bloom (R1)</td>
<td>0.90</td>
</tr>
<tr>
<td>Full Bloom (R2)</td>
<td>1.00</td>
</tr>
<tr>
<td>Beg. Pod (R3)</td>
<td>1.10</td>
</tr>
<tr>
<td>Full Pod (R4)</td>
<td>1.10</td>
</tr>
<tr>
<td>Beg. Seed (R5)</td>
<td>1.10</td>
</tr>
<tr>
<td>Full Seed (R6)</td>
<td>1.10</td>
</tr>
<tr>
<td>Full Seed (R6.5)</td>
<td>1.00</td>
</tr>
<tr>
<td>Beg. Mat. (R7)</td>
<td>0.90</td>
</tr>
<tr>
<td>Full Mat. (R8)</td>
<td>0.20</td>
</tr>
<tr>
<td>Mature</td>
<td>0.10</td>
</tr>
</tbody>
</table>

### Crop Stage Information

**Corn (R2-Blister to R4-Dough stage):** Stress at milk stage, although not as severe as at silking, can still have a profound effect on yield. However, one can start taking advantage of subsoil moisture in the 3rd and 4th foot.

Avg. daily water use from July 27 – Aug 2 was 0.17”-0.27”.

**Soybeans (R3-Beginning Pod to R5-Beginning Seed stage):** Environmental stress from now til shortly after R6 (Full Seed) needs to be avoided. However, one can slowly start utilizing moisture from the 3rd and 4th foot.

Avg. daily water use from July 27 – Aug 2 was 0.17”-0.27”.

July 27-Aug 2 (14 of 16 NAWMN sites reporting): Average weekly rainfall was 0.72 (range 0.08 to 1.52). Average weekly ET for corn was 1.48 and for soybeans was 1.40.

### NAWMN Sites:

- [https://nawmn.unl.edu/ETdata/DataMap](https://nawmn.unl.edu/ETdata/DataMap)
- Email: NRCS: 308-995-6121, Ext. 3
- CropWatch: [https://cropwatch.unl.edu/gdd-etdata](https://cropwatch.unl.edu/gdd-etdata)
- CNPPID: [https://www.cnppid.com/weatheret-data/](https://www.cnppid.com/weatheret-data/)
- Texting: TBNRD: 308-995-6688 or UNL: 308-995-4222
- Email: CNPPID: 308-995-3555

### 2020 Map of NAWMN Sites across the Tri-Basin NRD.
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://cnppid.com/wp-content/uploads/2016/06/lakeRiverData.html.

<table>
<thead>
<tr>
<th>August 6, 2020, 8:00 AM</th>
<th>1 Year Ago</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity of Lake McConaughy</td>
<td>68.5%</td>
</tr>
<tr>
<td>Inflows to Lake McConaughy</td>
<td>NA cfs</td>
</tr>
<tr>
<td>Flows on the North Platte at North Platte</td>
<td>NA cfs</td>
</tr>
<tr>
<td>Flows on the South Platte at North Platte</td>
<td>NA cfs</td>
</tr>
<tr>
<td>Flows on the Platte at Overton</td>
<td>NA cfs</td>
</tr>
</tbody>
</table>

BLESSED are they who see beautiful things in humble places where other people see nothing.
- Camille Pissarro

Rainfall

Rainfall amounts listed below and other locations come from NeRAIN which can be found at website https://nednr.nebraska.gov/NeRain/Maps/maps.

<table>
<thead>
<tr>
<th>Location:</th>
<th>July 23 – Aug 5</th>
<th>May 1 – Aug 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elwood 0.26 mi. S:</td>
<td>3.47</td>
<td>11.37</td>
</tr>
<tr>
<td>Bertrand 6.1 mi. SE:</td>
<td>1.09</td>
<td>10.75</td>
</tr>
<tr>
<td>Holdrege 0.99 mi. E:</td>
<td>1.52</td>
<td>9.18</td>
</tr>
<tr>
<td>Minden 7.2 mi. W:</td>
<td>0.28</td>
<td>9.08</td>
</tr>
<tr>
<td>Minden 5.8 mi. E:</td>
<td>0.27</td>
<td>11.06</td>
</tr>
</tbody>
</table>

Average Rain for May-July in Holdrege = 11.32 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@usda.gov. ***

USDA - Natural Resources Conservation Service

1609 Burlington Street
PO Box 798
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

PO Box 146
Elwood, NE  68937
308-785-2390

1308 2nd Street
Holdrege, NE  68949
308-995-4222

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