Irrigation Scheduling: Start Preparing Now

During the growing season, scheduling irrigations is an important aspect of irrigation water management. Weather variability, differences in soil water-holding capacities and the change in crop water use with growth combine to determine when irrigation is needed. We have developed the following three irrigation-scheduling tools for your use. They can be found online at www.ag.ndsu.edu/irrigation/irrigation-scheduling.

- An Extension publication that explains the basics of the Checkbook Method of irrigation scheduling
- An electronic downloadable copy of an Excel spreadsheet version of the Checkbook Method, along with a users manual, and, if you are interested in the details, a copy of a technical article that was published in Applied Engineering in Agriculture
- A site-specific Web-based irrigation scheduling program that is part of the North Dakota Agricultural Weather Network website: http://ndawn.ndsu.nodak.edu/ (look under the “Applications” menu on the left side). A copy of the users manual also is available at www.ag.ndsu.edu/irrigation/irrigation-scheduling.

Tom Scherer, (701) 231-7239
NDSU Extension Agricultural Engineer
Thomas.Scherer@ndsu.edu

Irrigation Tour – North Dakota Water Education Foundation

Central North Dakota Irrigation – July 17

The abundant irrigation in central North Dakota is a significant asset to the agricultural industry in the area, where many industries are thriving as a result of irrigation. Tour stops will include the Van Bedaf dairy, Carrington Research Extension Center, Garrison Diversion Conservancy District and an irrigated farm near Carrington. Discussions during the tour will include new developments in irrigation technology, as well as the state’s newest irrigation project, the Mile Marker 7.5 irrigation project. The tour, which begins and ends in Carrington, will include drive-by and discussion of other enterprises in the area, including the Dakota Growers Pasta Plant, Crossroads golf course and other facilities.
Additional Tours:
- Red River of the North – July 10
- Northwest Oil Impact – Aug. 6
- Missouri River Expedition – Aug. 20

These tours provide a firsthand look at North Dakota’s critical water issues. Registration is $20 per person and includes tour transportation, meals, refreshments, informational materials and a one-year subscription to North Dakota Water magazine.

To register for one or more of these tours, go to www.ndwater.com/programs and click on “Summer Water Tours” on the left-hand menu or send a check to NDWEF, P.O. Box 2254, Bismarck, ND 58502. Please indicate which tour or tours you want to attend and include the number of people. For more information, give us a call or send an email.

North Dakota Water Education Foundation
(701) 223-8332, Fax (701) 223-4645
ndwaterusers@btinet.net

NDSU Potato Blightline

The Plant Pathology Department at North Dakota State University will be providing the potato Blightline service at no charge to the potato industry of North Dakota and western Minnesota.

Even though late blight was not present in 2013 in our area, it could be present this year if conditions are favorable.

The NDSU Blightline has the most recent blight updates and management information. This will be the 20th year this service has been provided by NDSU and sponsored by Syngenta Crop Protection. Forecasting information also is provided for the development of early blight of potato.

The forecast information is used by plant pathologists Gary Secor and Neil Gudmestad, and Extension potato specialist Andy Robinson, to make late blight management and fungicide recommendations and notify the industry of the status of late blight and other pertinent potato information. Recommendations are made initially on a weekly basis but will be updated more frequently as severity values increase or late blight is found.

The Blightline began Monday, June 2, and will continue through mid-September, depending on disease pressure. The Blightline also will be used to confirm reported late blight sightings and serve as clearinghouse for national late blight information.

In addition to late blight forecasting, the hotline also provides cumulative P-values for early blight disease forecasting and management recommendations. Finally, it serves to alert growers of other disease and insect issues, as well as posting messages of general interest, such as potato field day dates.

Here is some information about the Blightline:
- The hotline recommendations can be accessed by phone toll free at (888) 482-7286.
- The NDAWN website, http://ndawn.ndsu.nodak.edu/, includes potato disease forecasting. The site contains colored maps of North Dakota to pictorially illustrate the late blight severity values (two-day and seasonal), favorable day values and P-day values for early blight. Go to Applications and then click the potatoes drop-down box.
- Current and archival information on late blight and other potato diseases, and research trial data, also can be found on the NDSU Potato Pathology website at www.ndsu.edu/potato_pathology.
- You also can connect to the latest blight hotline news and message update reminders by text messaging BLIGHTND to 97063, or on Twitter by following @SyngentaSpuds.

Growers and scouts are encouraged to send suspected late blight samples to NDSU for positive identification. Late blight is a community disease, and proper identification and prompt notification is important. Leaf samples should be placed in a slightly inflated zip-top plastic bag without a wet towel and sent to me at: NDSU Dept. 7660, Box 6050, Fargo, ND 58108. We wish you a successful potato year.

Gary Secor, (701) 231-8362
NDSU Plant Pathologist, Potato Crops
Gary.Secor@ndsu.edu

Update on Irrigation Developments on the McClusky Canal

During the 2013 growing season, approximately 3,500 acres were irrigated near Turtle Lake in McLean County with water from the McClusky Canal. This irrigation development is referred to as the Mile Marker 7.5 project.

This year, the MM 7.5 project again will irrigate 3,500 acres. And, new this year, the Mile Marker 49 project will irrigate about 280 acres with water from the McClusky Canal.

To ensure a reliable water supply at MM 49, the landslide that plugged the McClusky Canal a couple of years ago between MM 20 and MM 21 must be kept open. That is being done on a temporary basis by the operation and maintenance crew of the Garrison Diversion Conservancy District.

Authorization to provide a permanent fix for the landslide has been given by the U.S. Bureau of Reclamation, and designs are being developed to provide a permanent repair to this problem.

Jerry Schaack, (701) 223-4615
Field Representative,
North Dakota Irrigation Association
ndirrigation@btinet.net
Evaluation of Irrigation Benefits on Crop Yields

In 2013, the Carrington Research Extension Center experienced a growing season that was extremely unique in respect to the amount of precipitation received. Data from the North Dakota Agricultural Weather Network (NDAWN) highlights the near-drought conditions by the amount of rainfall between May and September (Table 1).

<table>
<thead>
<tr>
<th>Month</th>
<th>2013 Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>May</td>
<td>4.02 2.76</td>
</tr>
<tr>
<td>June</td>
<td>0.80 3.77</td>
</tr>
<tr>
<td>July</td>
<td>1.52 3.39</td>
</tr>
<tr>
<td>August</td>
<td>0.48 2.31</td>
</tr>
<tr>
<td>September</td>
<td>1.85 1.91</td>
</tr>
<tr>
<td>Total</td>
<td>8.67 14.14</td>
</tr>
</tbody>
</table>

With nearly a 6-inch rain deficit, the CREC’s dryland crop variety trials were put to the test on water-use efficiency. Fortunately, our variety trials also are evaluated under an irrigated environment that allows us to compare variety differences and the amount of yield loss experienced during these dry seasons.

Growing degree days (GDDs) in 2013 similarly were behind throughout the entire growing season. The following graph represents the shortfall of GDDs in our corn variety trial, which was planted on May 15.

Starting in June, however, the amount of rain diminished and the crops started to show signs of stress. We initiated irrigation applications on June 19 and applied nearly 2 inches of water for the month. The dry conditions continued into July, and more than 4 inches of water was applied under irrigation throughout that month. By the end of September, a total of 9.04 inches of water was applied to the variety trials.

The following tables highlight the five varieties of corn, soybeans and spring wheat that responded the most to irrigation in respect to harvest yield.

<table>
<thead>
<tr>
<th>Brand</th>
<th>Hybrid</th>
<th>Dryland</th>
<th>Irrigated</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thunder G2G2</td>
<td>4585RR2</td>
<td>115.8</td>
<td>191.0</td>
<td>75.3</td>
</tr>
<tr>
<td>NuTech Genetics</td>
<td>5X-193</td>
<td>123.1</td>
<td>193.4</td>
<td>70.4</td>
</tr>
<tr>
<td>NuTech 5B-888</td>
<td>120.7</td>
<td>190.4</td>
<td>69.7</td>
<td></td>
</tr>
<tr>
<td>Renk RK266VT3P</td>
<td>119.6</td>
<td>181.7</td>
<td>62.2</td>
<td></td>
</tr>
<tr>
<td>Dyna-Gro D26VP56</td>
<td>128.8</td>
<td>189.6</td>
<td>60.8</td>
<td></td>
</tr>
</tbody>
</table>

Table 3. Top five corn hybrids response to irrigation, 2013.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Dryland</th>
<th>Irrigated</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kruger K2-0901</td>
<td>27.4</td>
<td>74.1</td>
<td>46.7</td>
</tr>
<tr>
<td>Dairyland DSR-0305/R2Y</td>
<td>24.2</td>
<td>67.3</td>
<td>43.2</td>
</tr>
<tr>
<td>Kruger K2-0601</td>
<td>27.6</td>
<td>69.9</td>
<td>42.2</td>
</tr>
<tr>
<td>NuTech/G2 Genetics 6043</td>
<td>25.0</td>
<td>66.8</td>
<td>41.8</td>
</tr>
<tr>
<td>REA 62G22</td>
<td>23.8</td>
<td>65.3</td>
<td>41.5</td>
</tr>
</tbody>
</table>

Table 4. Top five Roundup Ready soybean response to irrigation, 2013.

<table>
<thead>
<tr>
<th>Variety</th>
<th>Dryland</th>
<th>Irrigated</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>LCS Albany</td>
<td>53.2</td>
<td>83.6</td>
<td>30.5</td>
</tr>
<tr>
<td>Velva</td>
<td>49.4</td>
<td>76.9</td>
<td>27.6</td>
</tr>
<tr>
<td>Advance</td>
<td>50.3</td>
<td>75.9</td>
<td>25.7</td>
</tr>
<tr>
<td>Elgin-ND</td>
<td>55.4</td>
<td>80.4</td>
<td>25.0</td>
</tr>
<tr>
<td>Prosper</td>
<td>57.7</td>
<td>81.9</td>
<td>24.2</td>
</tr>
</tbody>
</table>

Justin Berg, (701) 652-2951
Research Specialist-Agronomy
Carrington Research Extension Center
Justin.T.Berg@ndsu.edu
Project Safe Send: Rid Yourself of Unusable Pesticides

Farmers, ranchers, pesticide dealers and applicators, government agencies and homeowners with unusable pesticides can bring them to any of the Project Safe Send Sites listed below.

Project Safe Send is a safe, simple and nonregulatory program that helps people safely and legally get rid of unusable pesticides free of charge. Since 1992, thousands of people have brought in more than 3 million pounds of pesticides to Project Safe Send.

The program accepts old, unusable or banned pesticides, including herbicides, insecticides, rodenticides and fungicides. For a list of accepted items, visit http://tinyurl.com/pesticides-accepted. The collected pesticides are shipped out of state for incineration. Project Safe Send is funded through product registration fees paid by pesticide manufacturers.

People are urged to check their storage areas for any unusable pesticides and safely set them aside for Project Safe Send. If the containers are deteriorating or leaking, pack them in larger containers with absorbent materials. Free heavy-duty plastic bags are available from the North Dakota Department of Agriculture.

People with more than 1,000 pounds of pesticides should preregister. No other preregistration is required. A maximum of 20,000 pounds of pesticides per participant will be accepted.

2014 Project Safe Send Sites

All collection sites are at North Dakota Department of Transportation (NDDOT) facilities.

Open 9 a.m. to 3 p.m. (local time)

- July 8: Forman, South North Dakota Highway 11
- July 9: Edgeley, U.S. Highway 281 and North Dakota Highway 13
- July 10: Steele, 3840 25th Ave. S.E.
- July 11: Mott, ½ mile north, on west side of North Dakota Highway 8
- July 14: Belfield, Southeast corner, U.S. Highway 85 and Interstate 94
- July 15: Bowbells, 506 Centennial Drive
- July 16: Garrison, 515 Highway 37 S.E.
- July 17: Rugby, 617 1st St. N.E.
- July 22: Carrington, 6739 North Dakota Highway 200
- July 23: Michigan, 519 South St.
- July 24: Grafton, 333 Commerce St.
- July 25: Hillsboro, 610 6th St. N.W.

To preregister, obtain plastic bags or for more information, contact me at:

Jeremiah Lien, (701) 328-1504 or (800) 242-7535
Pesticide Outreach Specialist
North Dakota Department of Agriculture
600 E. Blvd. Ave., Dept. 602, Bismarck, ND 58505
JJLien@nd.gov