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Upcoming 2016 NDSU Research Extension Center Field Days

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<tr>
<th>Location</th>
<th>Date</th>
<th>Contact Information</th>
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<tr>
<td>Minot – Canola Day</td>
<td>June 28</td>
<td>(701) 857-7679 North Central Research Extension Center</td>
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<tr>
<td>Streeter</td>
<td>July 11</td>
<td>(701) 424-3606 Central Grasslands Research Extension Center</td>
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<td>Hettinger</td>
<td>July 12</td>
<td>(701) 567-4323 Research Extension Center</td>
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<tr>
<td>Dickinson</td>
<td>July 13</td>
<td>(701) 483-2348 Research Extension Center</td>
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<tr>
<td>Williston</td>
<td>July 14</td>
<td>(701) 774-4315 Research Extension Center</td>
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<tr>
<td>Nesson Valley Irrigation Research Site</td>
<td>July 15</td>
<td>(701) 774-4315</td>
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<tr>
<td>Casselton</td>
<td>July 18</td>
<td>(701) 347-4743 Agronomy Seed Farm</td>
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<tr>
<td>Carrington</td>
<td>July 19</td>
<td>(701) 652-2951 Research Extension Center</td>
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<tr>
<td>Minot</td>
<td>July 20</td>
<td>(701) 857-7679 North Central Research Extension Center</td>
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<tr>
<td>Langdon</td>
<td>July 21</td>
<td>(701) 256-2582 Research Extension Center</td>
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Project Safe Send – Disposal of Pesticides

Project Safe Send is a program that accepts old, unusable or banned pesticides, including herbicides, insecticides, rodenticides and fungicides. The collected pesticides are shipped out of state for incineration. Project Safe Send is funded through product registration fees paid by pesticide manufacturers.

Check your storage areas for any unusable pesticides. 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 if needed.

To preregister, obtain plastic bags or for more information, contact Jeremiah Lien at the North Dakota Department of Agriculture at 800-242-7535 or JJLien@nd.gov.

Preregistration is not required, but check the North Dakota Department of Agriculture’s website at www.nd.gov/ndda/program/project-safe-send prior to bringing pesticides to a collection site to ensure the site remains operational. Sites will remain operational until funding is depleted.

A maximum of 3,000 pounds of pesticides per participant will be accepted. Pesticide rinse water and empty containers no longer are accepted.

The collections will run from 9 a.m. to 3 p.m. local time at the North Dakota Department of Transportation facilities in the following cities:

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<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Address</th>
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<tr>
<td>July 13</td>
<td>Lidgerwood</td>
<td>25 4th Ave. S.E.</td>
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<tr>
<td>July 14</td>
<td>Medina</td>
<td>3682 55th Ave. S.E.</td>
</tr>
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<td>July 15</td>
<td>Beulah</td>
<td>205 Highway 49 S.</td>
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<td>July 18</td>
<td>Dickinson</td>
<td>1700 3rd Ave. W., Suite 101</td>
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<td>Williston</td>
<td>605 Dakota Parkway W.</td>
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<td>Stanley</td>
<td>8250 62nd St. N.W.</td>
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<td>July 21</td>
<td>Fessenden</td>
<td>1570 43rd Ave. E.</td>
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<td>July 26</td>
<td>Devils Lake</td>
<td>1905 Schwan Ave. N.W.</td>
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<td>July 27</td>
<td>Cavalier</td>
<td>9398 138th Ave. N.E.</td>
</tr>
<tr>
<td>July 28</td>
<td>Grand Forks</td>
<td>1951 N. Washington</td>
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Andrew A. Thostenson, 701-231-8050
NDSU Pesticide Program Specialist
Andrew.Thostenson@ndsu.edu
Irrigation Scheduling – Start Preparing Now

Many irrigators typically start their irrigation systems near the end of June or after the Fourth of July, but you may need to be more vigilant and start checking the soil moisture status in irrigated fields now. As shown in figure 1, the south half of North Dakota has received rain amounts that are significantly below normal, whereas the northern half of North Dakota has received rain amounts above normal.

To help track soil moisture in the root zone, now is the time to set up an irrigation scheduling plan. We can help you. 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 https://www.ag.ndsu.edu/irrigation/irrigation-scheduling:

- An Extension publication that explains the basics of the Checkbook Method of irrigation scheduling
- An electronic downloadable Excel spreadsheet version of the Checkbook Method, along with a users manual and a technical article that was published in Applied Engineering in Agriculture
- A site-specific web-based irrigation scheduling program that is part of the NDAWN website: http://ndawn.ndsu.nodak.edu/. (Look under the "Applications" menu on the left side). The users manual also is available on the irrigation scheduling website.

Using one of these methods of irrigation scheduling will provide guidance for when to irrigate and how much water to apply.

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

Figure 1. North Dakota Agricultural Weather Network (NDAWN) map showing the amount of rain received at each station and how it departs from the 30-year normal amounts for May 1 to June 13, 2016. Negative numbers indicate the rain amounts are below the normal and positive numbers show rain amounts that exceed the normal.
Thinking About a New Irrigation System?

Although numerous aquifers are located throughout North Dakota, only a few have water quality that would support long-term irrigation.

Step 1 in thinking about installing an irrigation pivot always is testing aquifer water quality. If the water sample comes in with high salts and/or high sodium (SAR), then the field is not suitable for irrigation. If the water sample tests low in salts and sodium, then irrigation will be more successful.

Step 2 (or maybe Step 1b) would be to consult the publication “Compatibility of North Dakota Soils to Irrigation” at www.ag.ndsu.edu/pubs/ageng/irrigate/ae1637.pdf.

If both sources of information are positive toward successful irrigation, then this is the time to visit with irrigation pivot providers.

On another topic, nodule development in annual legumes in the region is not a 100 percent sure thing. Signs that nodulation might be a problem are general yellowing of the legume starting at about the second trifoliate stage.

To determine nodulation, use a small garden trowel to scoop up soil and a plant, then gently brush the soil away from the roots. Pulling plants out of the soil may leave nodules behind. This is the same technique used when scouting for soybean cyst nematode infection of roots.

Dave Franzen, (701) 799-2565
NDSU Extension Soil Specialist
David.Franzen@ndsu.edu

Maintaining Air/Vacuum Release Valves

Through the years, I have noticed that the valves on many irrigation systems, installed to protect the pipeline and pump, are often in poor shape.

When the irrigation system was new, the irrigation dealer installed the combination air and vacuum release valve(s) to protect the pump and pipeline from water hammer and air restrictions. Their purpose was to let air into or out of the pipeline at key locations.

The valves often are located at the pump, in front of the check valve, and on the high points of the pipeline between the pump and irrigation system. If the pipeline goes over a hill, they are installed at the highest point of the pipeline. They can be mounted on standpipes that extend from the pipeline to about 3 to 4 feet above the field surface, but some are buried in a vault.

A common design of irrigation air/vacuum release valves has a plastic ball enclosed in an aluminum head with a rectangular outlet on the top.

At pump startup, the air in the pipeline will be pushed out through the valve until water pushes the ball up to the top and seals the opening. When the pump shuts off, water flows back into the pipeline and the ball drops, letting in air.

On older irrigation pipelines, I often have noticed broken or missing standpipes or valves where the ball is stuck. Why is making sure these valves are working so important? Air always is in a pressurized pipeline. Air gets in a pressurized irrigation pipeline three ways:

- When the pump is started
- Through valves, pump packing glands and under vacuum conditions
- Naturally because water contains about 2 percent air by volume

Because water always contains some air, it continually will replenish the air that is trapped at high points in the pipeline.

No matter how air gets into the pressurized pipeline, it will collect in the high points, where it can restrict the flow by effectively forming an air bubble that reduces the available flow diameter of the pipe. People often are surprised to learn that an air bubble will stay in a pipeline with flowing water and under pressure.

Problems often occur when parts of that air bubble “slough” off to be carried down the pipe, where they can cause explosive water hammer. Water hammer can cause all types of problems, such as collapsed pipes, damaged water fittings and broken pump volutes.

If the air/vacuum release valves are broken or not working at the high points of the pipeline, a different type of problem occurs. When the pump shuts off, a vacuum condition occurs in the pipeline at these points that could damage the pipeline fittings and cause leaks.

On center pivots, hearing air periodically being expelled by the first few sprinkler heads is common. The pump could be sucking air due to too much drawdown in the well or the air could be collecting at a high point of the pipeline. Either way, it is not a good situation.

The next time you’re working with the irrigation system, check the condition of the air/vacuum release valves. Make sure they are working properly.

Tom Scherer, 701-231-7239
NDSU Extension Agricultural Engineer
Thomas.Scherer@ndsu.edu
Summer Water Tours – North Dakota Water Education Foundation

Clean water is important for the development of North Dakota, and the best way to learn about water projects is to see them in person via a tour.

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.

Tours offered are:

• Managing the “Mighty” Mouse – June 29
• Fargo-Moorhead Flood Facilities Tour – July 12 (half-day)
• Rural Water, Southwest Regional Water Supply – July 14 (half-day)
• Irrigation in North Dakota – July 20
  This tour will focus on irrigation and the facilities necessary to get water from the source to the field. Stops will include the Nesson Valley Irrigation Research Site and an irrigated farm. The tour begins and ends in Williston.
• Missouri River Expedition – Aug. 3
• Fargo-Moorhead Flood Facilities Tour – Sept. 21 (full day)

For more information about each tour and to register, go to [www.ndwater.com/programs](http://www.ndwater.com/programs) and click on “Summer Water Tours” in the left-hand menu or send a check to NDWEF, PO 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