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water spouts

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2005 Field Days and Irrigation Tours

Minot – Canola Tour North Central Research Extension Center	June 29	(701) 857-7677
Casselton Agronomy Seed Farm	July 11	(701) 347-4743
Hettinger Research Extension Center	July 12	(701) 567-4323
Dickinson Research Extension Center	July 13	(701) 483-2348
Williston Research Extension Center	July 14	(701) 774-4315
Outlook, Sask. Canada-Saskatchewan Irrigation Development Centre	July 14	(306) 867-5400
Carrington Research Extension Center	July 19	(701) 652-2951
Sidney, Mont. Eastern Ag Research Center	July 19	(406) 482-2208
Minot North Central Research Extension Center	July 20	(701) 857-7677
Langdon Research Extension Center	July 21	(701) 256-2582
MSIDA Irrigation Tour Irrigation in northwestern North Dakota	July 21-22	(701) 250-4518 ext. 3

Tom Scherer (701) 231-7239
Extension agricultural engineer
tscherer@ndsuent.nodak.edu

Rural Leadership North Dakota Program Accepting Applications For Second Class

Rural Leadership North Dakota (RLND) is a two-year interactive study and travel program designed to produce effective leaders with the vision and commitment to help their organizations, rural communities and state grow and prosper. The program is offered through the North Dakota State University Extension Service.

The second class starts in October. Participants will attend 10 seminars throughout the state and one six-day study tour to Washington, D.C. Seminar topics are:

- **RLND orientation** – Bismarck, Oct. 14-15, 2005
- **Discovering Leaders Within** – Fargo, Nov. 17-19, 2005
- **Communicating Effectively** – Watford City, Jan. 19-21, 2006
- **Thinking Critically and Creatively** – Hettinger, March 2-4, 2006
- **Managing Projects/Entrepreneurship** – Valley City, April 6-8, 2006
- **Recognizing Gifts and Uniqueness** – Devils Lake, Oct. 12-14, 2006
- **Understanding Ag and Rural Policy** – Bismarck, Nov. 16-18, 2006
- **Understanding the Resource Spectrum** – Bottineau, Jan. 18-20, 2007
- **Effecting Change: the Power of Individuals Working Together** – Beulah, April 12-14, 2007
- **RLND graduation celebration** – Bismarck, Oct. 13, 2007

Participants also create and implement a project in their organization and /or community that allows them to practice the skills they learn. Applicants must have been a North Dakota resident for at least a year and be able to attend the entire program. Participants will be responsible for tuition of \$1,375 per year.

Irrigation districts throughout North Dakota have a continuous need for effective leadership. The RLND program is a great opportunity for current and future board members to expand their knowledge in the area of leadership while expanding their network of people

NDSU
Extension Service
North Dakota State University

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across North Dakota and in Washington, D.C. Irrigation districts may offer scholarship funds to help pay for part or all of the tuition costs associated with the program. It is an excellent investment in the future of the irrigation districts across North Dakota.

Applications are available online at www.ag.ndsu.nodak.edu/rlnd. To receive a mailed application, send an e-mail request to r-leader@ndsuxext.nodak.edu. The deadline to apply is July 1.

Send the application to Rural Leadership North Dakota Program, North Dakota State University, P.O. Box 5437, Fargo ND 58105-5437.

Marie Hvidsten (701) 231-5640
Rural leadership specialist
mhvidste@ndsuxext.nodak.edu

Canada-Saskatchewan Irrigation Diversification Centre Annual Field Day July 14, 2005

The Canada-Saskatchewan Irrigation Diversification Centre (CSIDC) annual field day and trade show will be held July 14, 2005, at Outlook, Sask. This event showcases leading-edge irrigation techniques and advances in irrigated crop production, with emphasis on economic and environmental sustainability.

CSIDC conducts applied research and technology transfer activities on irrigated crop production, crop diversification and water management. Higher-value crops, season extension technologies and valued-added opportunities are CSIDC's major objectives. A wide range of crops and cropping practices are being developed to suit the relatively short and cooler prairie growing conditions. Economic feasibility, environmental sustainability and soil conservation form an integral part of the work conducted at CSIDC.

Higher-value crops include potatoes, vegetables (cabbage, carrots, cauliflower, broccoli, Brussels sprouts, pumpkins and peppers) and a wide range of medicinal and aromatic plants. Traditional field crops, such as cereals including wheat (hard red spring, durum, soft white spring, Canada prairie spring, extra strong, hard white), oats (milling, feed, multipurpose), barley (two-row and six-row feed and malting), corn (grain, silage), oil seeds (canola, flax, soybeans), pulses (dry beans, field peas) and forages (grass species including timothy, alfalfa) also are being evaluated for irrigated production. Improved cultivars and cost-effective agronomic practices are being tested continuously at the center.

High-tunnel and minitunnel with drip irrigation are being evaluated for the production of warm-season vegetable crops. These tunnel technologies enable warm-season crops to be established earlier in the season than the traditional outdoor planting period. This provides an extended growing season to the frost-sensitive crops and better returns for these early season harvests.

CSIDC evaluates and demonstrates leading-edge irrigation technologies with a focus on water savings, application efficiency and power consumption. Various types of sprinkler and trickle irrigation methods are examined at CSIDC. A solar-powered minipivot irrigation system is being evaluated for growing intensively managed and high water-using vegetable crops.

CSIDC started as the Prairie Farm Rehabilitation Administration (PFRA) Pre-Development Farm in 1949 to assist farmers in their transition from dryland to irrigated agriculture. Later, the center continued its efforts to assist irrigated agriculture by focussing on crop diversification and environmental mandates. CSIDC conducts market-driven applied research and technology transfer activities. CSIDC is operated through a public-sector and industry partnership. The public-sector partners are Agriculture and Agri-Food Canada (federal) and Saskatchewan Agriculture and Food (provincial). The industry partners are the Saskatchewan Irrigation Projects Association and the Irrigation Crop Diversification Corp. This partnership places CSIDC in a strong position to meet the ongoing needs of the industry, with very close links to the federal and provincial government priorities.

The field day is at the CSIDC site at Outlook, Sask. This event highlights agronomic advancements in potatoes, vegetables, medicinal plants, native fruits, cereals, pulses, forages, season extension technology and irrigation systems, including a solar-powered centre-pivot irrigation system. The trade show features a multitude of agribusinesses, industry and public-sector support organizations. CSIDC is one-quarter mile south of Outlook on Highway 15. It is approximately 150 miles from Regina and 60 miles from Saskatoon. For more information, please phone (306) 867-5400; e-mail csidc@agr.gc.ca; or visit the Web site www.agr.ca/pfra/csfdc/csfdc.htm.

Jazeem Wahab, Ph.D.

Acting manager
Canada-Saskatchewan Irrigation Diversification Centre
P.O. Box 700
901 McKenzie St. S.
Outlook, Sask.
Canada S0L 2N0
wahabj@AGR.GC.CA

NRCS North Dakota Irrigators Pocket Guide

The Natural Resources Conservation Service (NRCS) has published a pocket guide to assist irrigators in North Dakota. The guide provides information on irrigation equipment maintenance and water management. The guide is 4 inches by 6 inches so it can fit in the pocket or be carried in the pickup easily.

The guide is geared toward producers and contains detailed practical information on two main subjects. Topics outlined in the guide are:

Equipment Maintenance

- Recommended installations
- Pumping plant maintenance
- Distribution system maintenance
- Saving energy

Water Management

- Soils
- Soil moisture
- Water application amount
- Crop water needs
- Irrigation efficiency
- Water quality and salinity

The document contains numerous figures and tables helpful for the irrigator's understanding of the subject matter. It also includes handy conversion factors for water flow rate, pressure, land area, power, pipe friction loss and temperature.

The North Dakota Irrigators Pocket Guide is available free of charge to producers in North Dakota through the North Dakota Irrigation Association (NDIA). Request copies from Annette at the NDIA Bismarck office at (701) 223-4615.

Jerry Shae (701) 530-2087
NRCS agricultural engineer
jerry.shae@nd.usda.gov

Be Ready to Irrigate!

During the past month, every part of North Dakota has received a significant amount of rain. Although the rain seems as though it never will stop, now is the time to get your irrigation system ready. As I write this article, all 67 stations on the North Dakota Agricultural Weather Network (NDAWN) have collected at least 3 inches of rain during the last 30 days. Although we have good soil moisture now, we are entering the growth stage of many crops where their water use increases every day.

With a few good growing days, soil moisture can become depleted quickly, especially on sandy to loamy soils, and you could get behind. Checking the working condition of your irrigation equipment now could save you many headaches later in the season. Good irrigation management begins with reliable equipment.

Check electrical motors, phase converters and control panels

To begin, make sure the electrical power to your equipment is **turned off** at the main disconnect. Always use extreme caution when working around electrical power boxes and machinery. If you are not sure the power is off, check it with a voltmeter to make sure the power truly is disconnected.

Electric motors and phase converters especially are susceptible to rodents, dust and moisture accumulations. High wind can deposit fine dust inside presumably sealed boxes.

If possible, open the motor for better access to the windings. Using compressed air, remove any dirt and dust. While the motor cover is open, check for rodent entry and damage. If you find evidence of rodent damage, locate the entry hole and plug it. Check the motor shaft to see that it turns freely. If the motor is more than 10 years old, you may want to have someone with a megger check the resistance between the windings and ground.

Phase converters, especially the static type, should be cleaned thoroughly. If your power supplier furnishes the phase converter, contact the supplier about servicing it. If you own the phase converter, treat it like other electrical equipment – thoroughly clean with compressed air and clean relay contacts with a high-quality electrical contact cleaner. Check for any broken wires or visibly damaged capacitors.

Open all the electrical panel covers and examine for dirt, rodent damage, leaking door seals and loose or damaged wires, and make sure the bare copper grounding wire is connected to the panel box and the grounding rod properly. Examine any relays with exposed contacts because moisture condensation may have caused corrosion, which will cause the contacts to remain open or stuck together. Be sure all switches operate freely.

Check the piping and sprinkler systems

Visually inspect your piping system. Check all the air release valves to make sure they are working. Replace any broken pressure gages. Check all valves to make sure they open and close properly.

The sprinkler system should be checked thoroughly for vandalism and any other winter damage. Check all gearboxes for moisture accumulation. Drain off any moisture and check that the proper amount of oil is in each gearbox. Many pivot manufacturers recommend replacing the oil in the gearboxes periodically (every two to four years). All grease fittings should be filled to push out grease that may have hardened during the winter.

Check inflation pressure on all tires. Improper inflation can cause tire breakdown, place stress on the drive system and aggravate wheel track problems on some soils. Finally, remove the end cap from the sprinkler boom and leave it off until the system has been flushed out.

For electric and oil drive center pivots and linear moves, start the machine and run dry. Listen to each gearbox and motor for abnormal noise and inspect and repair or replace as needed. Now that you have completed the dry walk-through of the irrigation system, start the pump and put some water through the system.

Check the pump and well performance

Before you turn the pump on, measure and record the depth to the static water level in the production well and observation wells. The depth to the static water level and the date of measurement should be recorded in a convenient place, such as the inside of the pump control panel or pivot panel. Compare it with static water level readings from previous years. This will tell you what is happening in the aquifer.

Flush out the piping system. On pivots, linears and wheel rolls, flush out the main line by removing the end cap or emptying the sand trap. Replace the end cap, and when the system is filled with water, walk down the length of the system and visually check each sprinkler head to see if it is operating properly. If not, note the sprinkler head location on the system and fix it as soon as possible. Broken or improperly operating sprinkler heads probably are the No. 1 cause of poor water distribution on multisprinkler head irrigation systems.

Tom Scherer (701) 231-7239
Extension agricultural engineer
tscherer@ndsuent.nodak.edu