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water spouts

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Upcoming 2019 NDSU Field Days

Carrington REC, Crop Mgmt. School	June 19	701-652-2951
Streeter – Central Grasslands REC	July 8	701-424-3606
Hettinger REC	July 9	701-567-4323
Dickinson REC	July 10	701-483-2348
Williston REC	July 10	701-774-4315
Nesson Valley Irrigation Research Site	July 11	701-774-4315
Casselton (Agronomy Seed Farm)	July 15	701-347-4743
Carrington REC	July 16	701-652-2951
North Central REC (Minot)	July 17	701-857-7679
Langdon REC (8 a.m. to noon)	July 19	701-256-2582
Oakes Irrigation Research Site	Aug. 15	701-742-2744

Welcome

As we enter the 2019 growing season, predicting if the weather will be cool and wet or hot and dry, or some combination, is difficult. However, we know that at some time during the growing season, the crop will be water stressed. That is when irrigation can make a difference on crop yields.

A proven method of irrigation scheduling can help determine when a crop may be entering water stress, so to help track crop progress, we have updated and revised publication AE792, "Irrigation Scheduling by the Checkbook Method." More details on this are in the article in this newsletter.

The annual Bismarck irrigation workshop is held the second week of December every year in conjunction with the North Dakota Water Users convention. If you were not able to attend, I have posted pdf copies of the presentations given at the 2017 and 2018 workshops on my website at www.ag.ndsu.edu/irrigation. Look in the upper right hand side for the yellow or red star.

Have a great growing season, and remember to take care of your irrigation system. Getting ready for the growing season now is better than waiting until irrigation is needed.

Tom Scherer, 701-231-7239

NDSU Extension Agricultural Engineer

Thomas.Scherer@ndsu.edu

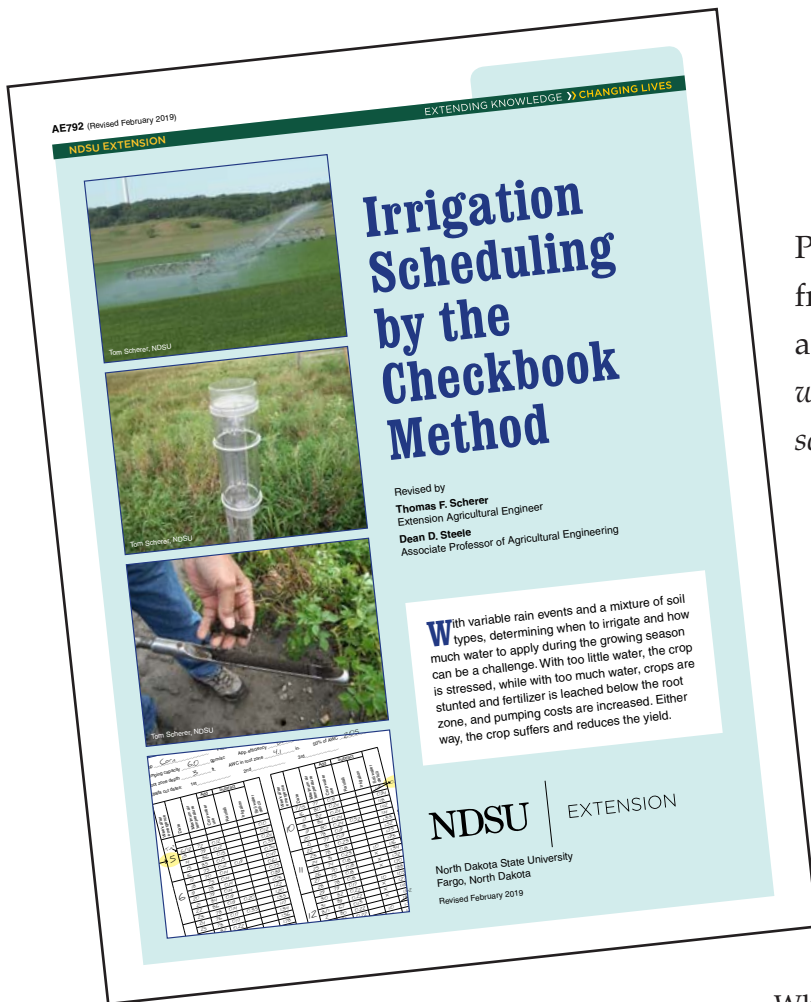
AE792 Irrigation Scheduling by the Checkbook Method Updated and Revised

During the last 45 years, research into developing methods to optimally irrigate to conserve water and energy without sacrificing yields has been pursued worldwide. This research area typically is referred to as irrigation scheduling.

Although many methods have been developed, according to the 2013 Farm and Ranch Irrigation Survey conducted by the National Agricultural

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Printed copies of AE792 can be obtained from any county Extension office or a pdf copy can be found online at www.ag.ndsu.edu/publications/crops/irrigation-scheduling-by-the-checkbook-method-1/ae792.pdf.

The soil water-holding capacity by depth in your field is readily obtainable from the Natural Resources Conservation Service's Websoil Survey website. Daily crop water use estimates are contained in tables in the publication. All you need to know is the crop type, the number of weeks past emergence and the high temperature for the day.

When used throughout the growing season, the checkbook method has been tested in many research studies and proven to be a reliable and accurate method of irrigation scheduling. The first version of AE792 was printed in 1976. It was reprinted in 1983 and revised in 1988. My colleague, Dean Steele, and I have revised and updated the 1988 version.

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

A Summary of Legislation Pertaining to Irrigation

The 2019 North Dakota legislative session ended on Friday, April 26, the 76th day of the session. Water interests had an active and successful session.

Bills pertaining to irrigation, water management, tile drainage, water quality and funding kept water leaders engaged during the session. This summary offers an abridged review of all bills that were passed that relate to irrigation interests.

Water interests had a successful session in securing funding and on key policy issues.

Statistics Service (NASS), 80% of irrigators use the crop appearance or soil moisture by feel methods to determine when to irrigate. Both are low tech and have been used for many years.

Why do irrigators prefer these two methods?

Because they generally can be done at any time of the day, do not take a lot of time to perform and easily can be incorporated into the busy schedule of a farmer.

Irrigations also can be scheduled by tracking soil water amounts throughout the season, which is a soil water accounting method. This often is referred to as the "checkbook method," which, by the way, was a term coined in the original 1976 version of AE792 written at NDSU by Darnell Lundstrom and Earl Stegman.

The term "checkbook method" now is used worldwide and everyone knows it is a soil water accounting method. As presented in AE792, the checkbook method is easy to implement and can be done any time of the day. To set up the checkbook, all you need is the water-holding capacities of the soil in your field, the crop type and an estimate of crop water use.

Irrigation infrastructure, research and general water management projects will benefit from more state funds appropriated than originally was expected. Legislators had an unprecedented awareness of the importance of completing North Dakota's water infrastructure for economic growth and quality of life. It was a very successful session.

A sincere thanks to the North Dakota Irrigation Association (NDIA) board members and water leaders who participated and helped during the legislative process. The phone calls, testimony, emails and personal contacts were crucial in supporting strong budgets and for successful legislative initiatives concerning water and irrigation. By showing up when asked, you demonstrated that irrigators are an effective grassroots group.

HB1066 – “Prairie Dog Bill”

Commonly known as “Operation Prairie Dog,” the bill revises the formula for the distribution of oil and gas taxes to cities, counties and townships to support infrastructure needs. The bill will direct \$115 million to cities, \$115 million to counties and townships, and \$20 million for an airport infrastructure fund.

SB2020 – Appropriation Budget for the State Water Commission

A total of \$968 million was appropriated for State Water Commission operations, capital projects and grants. With the support of water leaders, part of the budget included \$27 million for general water management projects, including irrigation infrastructure, weather modification and water resource district projects.

HB1014 – Infrastructure Revolving Loan Fund

This adds \$40 million to supplement a Bank of North Dakota \$150 million revolving loan fund used for 2% interest infrastructure loans.

SB2139 – Cost-share for Snagging and Clearing

This reauthorizes the state to provide up to 50% of cost-share efforts to clear trees and related debris from rivers and natural waterways. Clearing debris can reduce the risk of damage to irrigation pumping systems.

HB1021 – The Information Technology Department

budget includes \$1.15 million for a statewide GIS land parcel project. An interim study will be conducted of issues related to access of land for hunting, trapping and fishing, and to provide recommendations regarding a land access database.

HB1020 – NDSU Agricultural Research and Extension

This bill includes appropriations for NDSU agricultural research and Extension. Extension's budget received an 8% general fund increase from the current biennium and agricultural research received a 7% increase. Included in the Extension budget was \$870,000 to support county Extension office partnerships. The Legislature funded the top State Board of Agricultural Research and Education (SBARE) Extension priority of web and digital upgrades at \$345,000 and the \$1.16 million Agri biome initiative of the North Dakota Agricultural Experiment Station, which deals with agricultural probiotics, and also approved \$940,000 for extraordinary repairs. The Legislature also provided \$750,000 for the Williston seed cleaning plant **and approved \$200,000 for operation of the Oakes Irrigation Research Site.** The Upper Great Plains Transportation Institute received \$875,000 to continue a road and bridge study.

SB2090 – Permits for the Appropriation of Water

This bill exempts reuse of fossil byproduct water from requiring a water permit, clarifies that a legal interest in the point of diversion or place of use for irrigation water is required, and adopts a 30-day comment period on water permit applications. **New irrigation water permit applications increased from \$200 to \$500**, industrial permits are now \$1,000 and amendments are \$100.

SB2298 – Limiting Creation of Irrigation Districts

An irrigation district may not be created if the primary purpose of the district is to provide drainage benefits to residents of the district. A drainage project proposed, undertaken, approved or subject to assessment by an irrigation district also is subject to the permit requirements. Drainage benefits provided by an irrigation district may not impact the authority of a water resource board to assess for drainage projects.

SB2360 – Calculation of Income for Farm Residence Property Tax Exemption

This bill was related to qualification for the farm home property tax exemption. It changes the definition of farm income from net to gross, with two-thirds or more of annual gross income from farming activities, and it removed the \$40,000 cap for allowable off-farm income.

Lance Gaebe, 701-223-4615
Executive Director,
North Dakota Irrigation Association
lgaebe@ndwater.net



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This publication will be made available in alternative formats
for people with disabilities upon request, 701-231-7881.

North Dakota Water Education Foundation – Summer Water Tours

Access to substantial quantities of 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:

- **June 19 – Devils Lake Area**
(Tour begins and ends in Devils Lake)
- **June 27 – Southwest North Dakota**
(Tour begins and ends in Dickinson)
- **July 10 – Missouri and Heart Rivers Expedition**
(Tour begins and ends in Bismarck; includes stops
at irrigation facilities)

- **July 18 – Lower Red River Basin**
(Tour begins and ends in Grand Forks)
- **July 31 – FM Area Diversion Project and
Weather Modification**
(Tour begins and ends in Fargo)
- **Aug. 7 – Water and Oil**
(Tour begins and ends in Williston)
- **Aug. 15 – Missouri River and Industry**
(Tour begins and ends in Bismarck)

For more information about each tour online,
go to <https://ndwater.org/events/summer-water-tours>
or send a check made out to NDWEF and mail to
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
jellingson@ndwater.net