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water spouts

No. 285

May 2016

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Upcoming 2016 NDSU Field Days

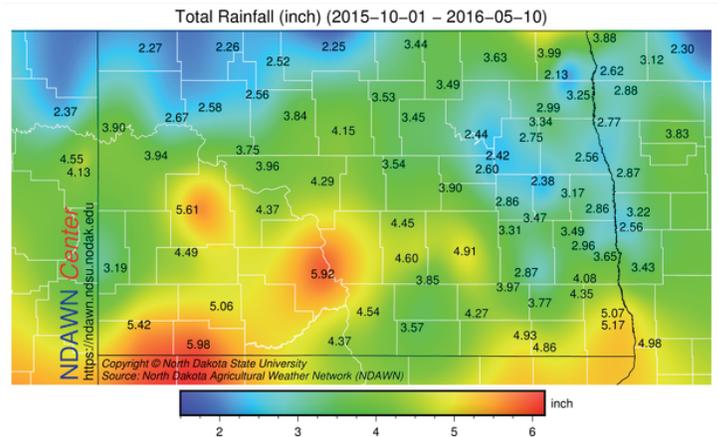
Minot – Canola Day North Central REC	June 28	(701) 857-7679
Streeter Central Grasslands REC	July 11	(701) 424-3606
Hettinger REC	July 12	(701) 567-4323
Dickinson REC	July 13	(701) 483-2348
Williston REC	July 14	(701) 774-4315
Nesson Valley Irrigation Research (35 miles east of Williston)	July 15	(701) 774-4315
Casselton Agronomy Seed Farm	July 18	(701) 347-4743
Carrington REC	July 19	(701) 652-2951
Minot – North Central REC	July 20	(701) 857-7679
Langdon REC	July 21	(701) 256-2582

Ever Heard of the Agricultural Water Year?

After a killing frost, precipitation received the previous fall, along with some snowmelt, often will infiltrate and stay in the subsoil until the following spring. Some may be lost to evaporation, but it usually is less than 10 percent of the total.

The amount of precipitation received in the fall and winter will determine if the soil profile is at field capacity at the beginning of the growing season. Thus, for the northern Plains area, the agricultural water year begins on Oct. 1 and ends the following Sept. 30.

After a rather uneventful winter with almost no snow and an early spring, we are well into the planting season for most irrigated crops. The cumulative rain amount from Oct. 1, 2015, to May 10, 2016, as recorded by the stations in the North Dakota Agricultural Weather Network (NDAWN), is shown in the figure below. Note the lack of variability of precipitation amounts across the state.



Total rain recorded by NDAWN stations from Oct. 1, 2015, to May 10, 2016. Note that NDAWN does not record rain amounts between Nov. 1 and April 1. Plus, snow water equivalents are not included in the total.

As of May 10, the soil moisture profile is in better condition this year, compared with early May in 2015. However, if we don't receive significant rain in the next month, you may have to start your center pivots before the end of June. Have a great growing season.

Tom Scherer, (701) 231-7239
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NDSU Potato Blightline to Operate in 2016

The Plant Pathology Department at North Dakota State University again will be providing the potato Blightline service at no charge to the potato industry of North Dakota and western Minnesota in 2016.

Even though late blight was not present in 2013, 2014 or 2015 in our area, late blight could be present this year if conditions are favorable. The NDSU Blightline is the first place to go to get the most recent blight updates and management information.

This will be the 22nd year that this service has been provided by NDSU. Syngenta Crop Protection has sponsored it the entire time.

The hotline uses data collected from weather stations in 15 non-irrigated and 12 irrigated production areas in North Dakota and western Minnesota. The data is processed by the North Dakota Agricultural Weather Network (NDAWN) and analyzed by a computer program (WISDOM) to forecast when conditions are favorable for late blight to occur. The program also provides forecasting information for the development of early blight of potato.

Plant pathologists Gary Secor, Neil Gudmestad and Extension potato specialist Andy Robinson use the forecast information to make late blight management and fungicide recommendations. They also notify the industry of the status of late blight and other pertinent potato information in our region. Recommendations are made initially on a weekly basis but are updated more frequently as severity values increase or late blight is found.

The Blightline will begin Wednesday, June 1, 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.

**The hotline recommendations can be accessed by phone or website.
The toll-free phone number is 888-482-7286**

The NDAWN website for potato disease forecasting 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 throughout North Dakota. That site is <https://ndawn.ndsu.nodak.edu/>. In the left-hand menu, select "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 at www.ndsu.edu/potato_pathology or www.ag.ndsu.edu/potatoextension.

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:

Gary Secor
NDSU Dept. 7660
Box 6050 | Fargo, ND 58108
Ph. (701) 231-7076

Starting the Irrigation System: A Checklist

- Make sure the main breaker is turned off, then open and check all electric control panels and motor openings for damage, especially from rodents, before starting the irrigation system.**
- Measure and record the static water level in all wells.
- Visually inspect the piping system, especially above-ground pipe.
- Check all air-release valves to make sure they are working.
- Fill pipelines slowly; make sure all the air is out of the system.**
- Replace broken or old pressure gauges.
- Walk along the center pivot and check the sprinkler system for damage.
- Make sure all portable aluminum or PVC pipe sections have gaskets installed.
- Check gearboxes on center pivot towers for water accumulation. Drain water and replace with oil.
- Check the tire pressure on center pivots.
- With the center pivot running, visually check each sprinkler head to make sure it is working properly.

Irrigated Potato Cultivar Trials

As part of a North Dakota specialty crop block grant, 10 cultivars were tested for their agronomic performance.

This trial was planted at the irrigated research site near Inkster, N.D., on June 10, 2015, with a two-row research planter. The 10 cultivars were Russet Burbank, Pinnacle, Manistee, Umatilla, Accumulator, Nicolet, Lamoka, Snowden, Atlantic and MegaChip.

Each plot was one row wide (3 feet) by 25 feet long. Prior to planting, 67 pounds per acre (lb/a) of nitrogen, 124 lb/a of potassium, 30 lb/a of sulfur, 1.5 lb/a of zinc, 2 lb/a of boron and 1 lb/a of copper were incorporated. At planting, 29 lb/a of nitrogen and 100 lb/a of phosphorus were applied as liquid starter.

Nitrogen was side dressed at 70 lb/a on June 23, and plots received 30 lb/a of nitrogen by fertigation on Aug. 3 and 12. Typical agronomic management practices were used to grow the crop. Stand and stem number were counted on July 10. The tubers were harvested on Oct. 15 and graded for yield.

Differences occurred in the graded yield data. Atlantic was the best-performing cultivar when compared across yield parameters (**Table 1 and 2**). It had the greatest numerical amount of tubers from 6 to 10 ounces and 10 to 14 ounces, and in total yield, marketable yield and percent of tubers greater than 6 ounces.

Pinnacle and Snowden tended to have a large number of undersized tubers (less than 4 ounces). Pinnacle and

Snowden averaged 34 to 42 percent of undersized tubers. However, this may have been because the stem number (**Table 3**) was high on these cultivars. The lower yields may have been a result of late planting and too much nitrogen, as demonstrated by an earlier cultivar such as Atlantic performing well.

Andy Robinson, (701) 231-8732

NDSU/University of Minnesota Potato Extension Specialist

Research Collaborators: Eric Brandvik and Alan Bingham

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Table 1. Graded yield of 10 cultivars grown at Inkster, N.D., in 2015. Within columns, a significant difference is indicated by a different letter at p=0.05 (< means “less than” and > means “greater than”).

	< 4 oz.		4-6 oz.		6-10 oz.		10-14 oz.		> 14 oz.	
	Cwt/a									
Russet Burbank	47	c	81	145	a-d	51	ab	19		
Pinnacle	153	a	106	88	d	18	b	2		
Manistee (MSL292-A)	94	abc	103	102	bcd	21	b	3		
Umatilla	98	abc	111	121	a-d	22	b	1		
Accumulator	70	bc	94	174	ab	48	ab	12		
Nicolet	84	abc	112	149	a-d	37	ab	23		
Lamoka	80	abc	112	168	abc	30	ab	9		
Snowden	120	ab	114	94	cd	17	b	9		
Atlantic	53	bc	108	203	a	61	a	25		
MegaChip	63	bc	82	147	a-d	44	ab	13		

Table 2. Total and marketable yield and percent of tubers greater than 6 or 10 ounces of 10 cultivars grown at Inkster, N.D., in 2015. Within columns, a significant difference is indicated by a different letter at p=0.05 (> means “greater than”).

	Total yield		Total marketable		> 6 oz.		> 10 oz.	
	Cwt/acre				%			
Russet Burbank	343	ab	296	abc	62	a	20	
Pinnacle	366	ab	214	c	30	c	6	
Manistee (MSL292-A)	322	b	228	bc	39	abc	8	
Umatilla	354	ab	256	bc	42	abc	7	
Accumulator	398	ab	328	ab	58	ab	15	
Nicolet	406	ab	321	abc	51	abc	15	
Lamoka	399	ab	319	abc	52	abc	10	
Snowden	354	ab	234	bc	34	bc	8	
Atlantic	450	a	397	a	64	a	19	
MegaChip	349	ab	286	abc	58	ab	16	

Table 3. Stand and stem count of 10 processing cultivars grown at Inkster, N.D., in 2015. Within columns, a significant difference is indicated by a different letter at p=0.05.

	Stand		Stem	
	Number			
Russet Burbank	22	ab	76	cde
Pinnacle	24	a	95	abc
Manistee (MSL292-A)	22	ab	61	de
Umatilla	21	ab	70	cde
Accumulator	22	ab	115	a
Nicolet	24	a	85	bcd
Lamoka	20	b	52	e
Snowden	22	ab	105	ab
Atlantic	23	ab	74	cde
MegaChip	22	ab	77	b-e



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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.

The first tour is on June 15 and the last will be on Sept. 21.
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:

- **Devils Lake Basin Flooding, Impacts and Solutions** –
June 15
- **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 and click on “Summer Water
Tours” on 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 who will be attending. For more information,
give us a call or send an email.

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