

Issue 15 – Aug 24, 2023

Manitoba Potato Report



Weekly Provincial Summary

- The week (Aug 14-20) was a bit warmer (1-2°C) than last week, with the high temperatures reaching up to 31°C in some potato growing areas.
- There was hardly any rainfall during this week in Manitoba; and the crop water demand for the week was high.
- Crops are still being regularly irrigated where needed; tuber bulking and maturation is progressing well. There is very low foliar disease on potatoes, but Verticillium wilt and black dot related early dying disease is showing up more.

Overview

- Daytime high temperatures ranged from 28.1 to 31.0°C at various weather stations.
- Compared to widespread rainfall last week in the province, very little rainfall was recorded this week (Aug 14-20), ranging from 0.0 to 0.9 mm.
- The late blight risk this week again was moderate to high at various locations. No late blight has been reported in Manitoba. No late blight spores were trapped in Manitoba.
- There were reports of increased blackleg and stem rot in fields with hail damage a few weeks ago.
- Aphid monitoring suction trap catches are still showing high Green peach aphid numbers in southern Manitoba. Potato aphid numbers have dropped significantly but still recorded in 3 sites. High numbers of these two aphid types could be a concern for PVY in seed potatoes.
- Regular weekly reports and other features will also be available at:
<http://www.mbpotatoes.ca/index.cfm>.

Ag Weather Data

Precipitation and Soil Moisture

- There was scant rainfall in the province from Aug 14 to 20, ranging mostly from 0 to 0.9 mm at various weather stations in Manitoba (Table 1).
- The lack of rains lowered cumulative precipitation for the growing season to much below normal, and ranged from 28 to 73%; with the exception of Rivers (89%) being closest to normal (Table 1, Fig. 1).
<http://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf>
- Due to lack of rains, the soil moisture status in the province changed from generally optimum-dry to dry-very dry category at 0-30 cm soil depth (Fig. 2).
<https://www.gov.mb.ca/agriculture/weather/pubs/soil-moisture-30cm.pdf>

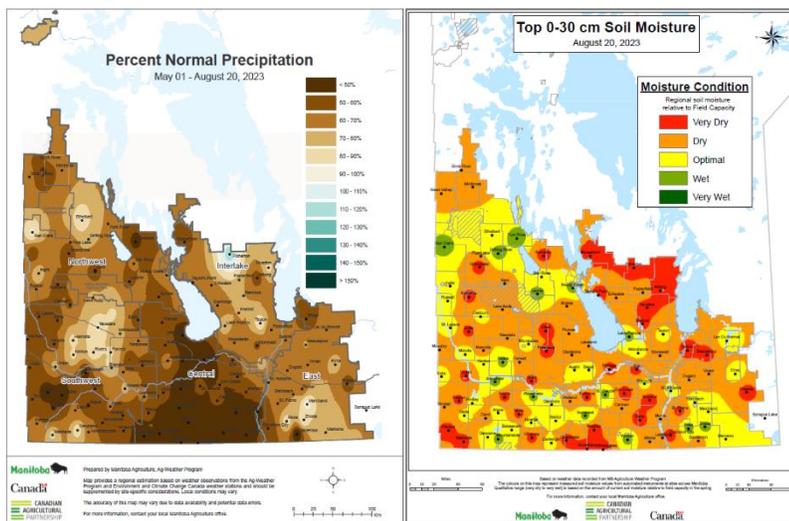


Fig. 1. (left). Rainfall (mm) in May to August 20 continues to be significantly below normal in most of the potato growing areas.

Fig. 2. (right). Soil moisture (0-30 cm depth) by August 20 has shifted to dry to very dry due to lack of rains in the week. Crop water demand for potatoes continues to be high.

Temperatures – Air & Soil

- The daytime temperatures during the week were 1-3°C higher than last week, at different stations across Manitoba. The high temperatures ranged from 28.1 to 31°C. The overnight minimums also were 2-3°C warmer than last week's, ranging from 5.9 to 11.6°C (Table 1).
- The P-Days (Potato Days with base 7°C and 30°C max) has reached 600 to 630 in different potato areas (www.mbpotatoes.ca) by August 20. The P-Days range from 95% to 110% above normal in the potato areas - indicating Manitoba has enough heat units for the potato crop.

Weather Data Summary for Selected Potato Site Stations

For more Manitoba weather information, visit: www.gov.mb.ca/agriculture/weather

Table 1. Manitoba Ag Weather Data – Aug14- Aug20 for selected potato growing areas.

* * Crop Water Demand: cwd (www.mbpotatoes.ca)

Region	Max Temp (°C)	Min Temp (°C)	Rain (mm) for the week	Crop Water Demand this Week	Rain (Since May 1) (mm)	Crop Water Demand Jun 1-Aug 21	2023 Rainfall (% of normal) from May 1 to Aug 13
Altona	28.1	10.0	0.9	-	87	-	33
Austin	29.3	10.1	0.3	35.8	169	270.6	67
Bagot	29.3	7.7	0.3	34.7	124	269.7	49
Carberry EC	29.9	7.3	0.0	29.1	144	222.9	58
Carman	28.6	10.7	0.0	29.0	149	242.7	59
Cypress River	29.6	7.1	0.2	-	139	-	50
Glenboro	30.4	7.1	0.2	29.4	158	238.2	64
Holland	30.4	7.6	0.1	38.6	152	292.5	54
Morden	30.8	11.6	0.0	-	74	-	28
Portage EC	28.5	11.2	0.2	39.1	114	308.4	45
Rivers	29.4	5.9	0.0	33.9	192	255.2	89
Shilo				No Data			
St. Claude	29.4	10.4	0.0	34.8	138	273.8	54
Treherne	30.6	8.1	0.0	37.2	92	286.3	36
Wawanesa	31	6.9	0.3	33.9	180	247.6	73
Winkler	29.2	9.4	0.7	34.9	121	262.0	46

Agronomics

- Crop water demand (CWD) for the week was 29 to 39.1 mm and much higher than last week's CWD. There was no rainfall in the week to meet the week's CWD for all potato growing areas in Manitoba (Table 1). The cumulative rainfall from June 1 to Aug 20 also was not enough to meet the cumulative CWD in all stations.
- Supplemental irrigation was needed in only a few fields.
- Preventative fungicide applications continue against early blight and late blight.
- P-Days are currently around 600 to 630 in most potato growing areas ([P-Days \(mbpotatoes.ca\)](http://mbpotatoes.ca)), which is suggesting rapid bulking and maturation phase. The day and night temperature differential is also good for bulking.

Crop Progress

- The plants have generally settled on the ground.
- Tuber bulking and maturation is progressing well with warm days and cool nights. Delivery of raw material for processing "direct-from-field" is in full swing. Yields from these fields are termed "respectable" by the farms.
- More seed fields have been desiccated and or ready to be desiccated soon. This could help avoid the high Green peach aphid and Potato aphid numbers. The aphid monitoring will stop soon.

Disease & Insect Pests Monitoring

- Early blight continues to be reported from more fields on Rangers and early maturing varieties. The warm and moist conditions were favourable for early blight development in the lower canopy of the susceptible and unprotected crops. Protective fungicide applications are continuing where needed.
- As many crops are settling down on the ground, the microclimate is quite wet/humid and conducive to white mold and bacterial stem rotting. Some fields which had hail damage are now showing a fair amount of blackleg disease and stem rotting (Fig 3). Often tubers from such areas get smeared with bacteria in wet soils at harvest and that could lead to storage issues.
- Verticillium wilt, which is an endemic problem in many fields, is appearing to be more widespread as early dying. In many fields these early dying plants are also showing signs of black dot disease on stems (Fig. 4 a, b).
- After a few rainy days, followed by cloudy days there are a few leaf spots which can be confused with late blight. Putting such spots in a humid incubation chamber can help confirm if it is late blight or a look-alike. Here is an example of Botrytis infection on the leaf (Fig 5 a, b) showing good sporulation.



Fig.3. In fields with hail damage, and recent widespread rains have led to fair amounts of blackleg and bacterial stem rot incidence. Photo: Vikram Bisht, Manitoba Agriculture).



Fig.4 a, b. Early dying with black dot disease on stems is showing up in many fields. Photos courtesy a: Doug Pryor (Delta Ag), b: Kurtis McKee (JP Wiebe Farms).

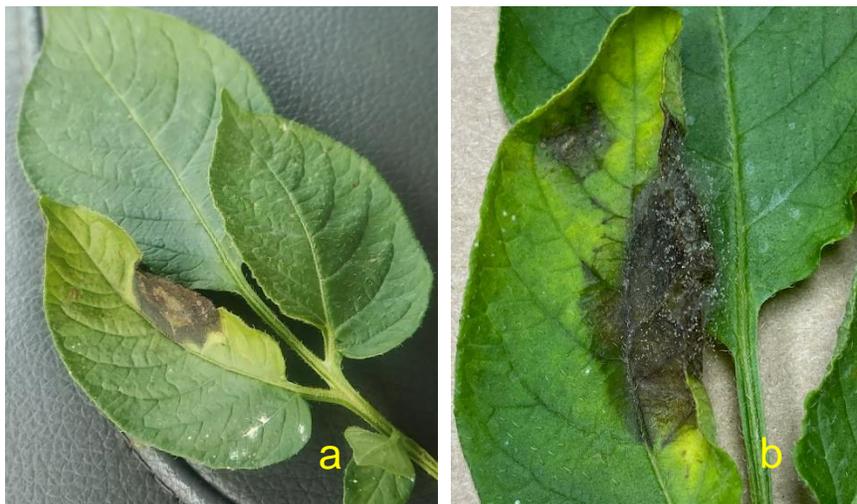


Fig.4 a: Late blight look-alike leaf spot on potato leaf. (Photo courtesy: Darren White, Delta Ag). b: A few days of incubation showed Botrytis sporulation. (Photo: Vikram Bisht, Manitoba Agriculture).

- Potato leafhoppers and Aster leafhoppers continue to be reported.
- Aphid monitoring suction trap catches are still showing high Green peach aphid (GPA) numbers at 2 sites. Potato aphids (PA) were significantly lower but seen at 3 sites (Table 2). Though the total of all aphids is now lower than last year at the same time, the combined total of GPAs and PAs are much higher than in 2022.
 - Both GPA and PA are efficient vectors of PVY. **Use of Aphid Oil and insecticide for aphids will be very important at this time.**
 - Virus-infected plants often yield very poorly, depending on strain of PVY.

Table 2. Weekly Aphid Report – Week 10 (Aug14-Aug 21)

Field #	Town	RM	Green Peach Aphid	Potato Aphid	Other Aphids	Total *	A L H	P L H	Comments	
Southern Region										
Field 1, H-20-2	Winker	Stanley	77	4	13	94	0	0	Some thrips	
Field 2, K-16-6	Carman	Dufferin	Crop terminated							
Field 3, S-29-2	Winkler	Rhineland	9	2	10	21	0	0	Lots of thrips	
Central Region										
Field 4 J-9-6	Swan Lake	Victoria	Crop terminated						Crop terminated	
Field 5 J-25-3	Glenora	Argyle	Crop terminated			2	1	0	0	Crop terminated
Field 6 M-32-13	Westbourne	Portage La Prairie	1	0	7	8	0	0	Suction fan not working	
Western Region										
Field 7, A-12-14	Wellwood	North Cypress-Langford	0	1	16	17	0	0	Crop terminated	
Field 8, SP	Carberry	North Cypress-Langford	Crop terminated						Crop terminated	

* The aphid counts are a summation from a suction trap and two pan traps in a field.

** Suction fan may not be working.

ALH = Aster leafhopper, PLH = Potato leafhopper.

European Corn Borer (ECB) monitoring using Delta traps has been stopped for the season. ECB damage to potato stems is still seen at low levels from western Manitoba, but the incidences are minor. The ECB injury on stems acts as ports of entry for stem rot bacteria, especially in crops laying flat on grounds.

Table 3: ECB counts in Delta traps in various potato fields of Manitoba

	Delta Trap Location	Jun 26 - July 10	July 10 - 17	July 17 - 23	July 24 - 30	July 31- Aug 7	Aug 7 - 14	Aug 7- 14
1	Carberry 24 D – SP	23	18	6	17	4, 0	No sample	No sample
2	Carberry 113 SE – SP	10	1	16	-	1	No sample	No sample
3	Carberry 113 NE – SP	4	8	1	-	0	No sample	No sample
4	Carberry 31 C – SP	0	0	0	0	0	No sample	No sample
5	Carberry W22 – SP	3	2	2	1	0, 0	No sample	No sample
6	Carberry N – MCDC offsite	11	No sample	13	-	0	0 (Cutworm moths)	No sample
7	Carberry – S (MW)	7	9	-	20	1	0 (Cutworm moths)	No sample
8	Douglas (MW)	9 (+0 NY)	3 (& 5 NY)	-	2	1	0 (Cutworm moths)	No sample
9	Sydney (Heritage)	N/A	2	0	1	No sample	0 (Cutworm moths)	0
10	Cypress River	5	16	5	2	0	0 (Cutworm moths)	0
11	Melbourne	23	31	21	28	0	0 (Cutworm moths)	0
12	Wawanesa	0	1	2	4	0	0 (Cutworm moths)	0
13	Portage	0		3	-	0	0 (Cutworm moths)	0
14	Carman (JG)	3	2	10	7	No sample	No sample	1

Late Blight Monitoring

- Late blight risk forecasting is provided on a regional basis on www.mbpotatoes.ca. Due to widespread rains in Manitoba, the 7-Day Disease Risk values are pointing to moderate to high risk of disease, if the inoculum is present (Fig. 6). **The cumulative DSVs from June 1 to Aug 24 show that most weathers stations are at or above the critical value of 18.**
- From late blight spore trapping network of 17 passive Spornado traps:
 - **No late blight spores were detected in the samples processed in the 10th week of collection (Aug 14-21).** (Table 4)
 - With moderate to high risk conditions, scouting for the disease in low lying and wind protected areas is critical.
 - Early blight disease has been reported from many locations. PCR testing for early blight (*Alternaria solani*) spores was surprisingly negative for all sites tested, even though disease is present at different severities in almost all locations.

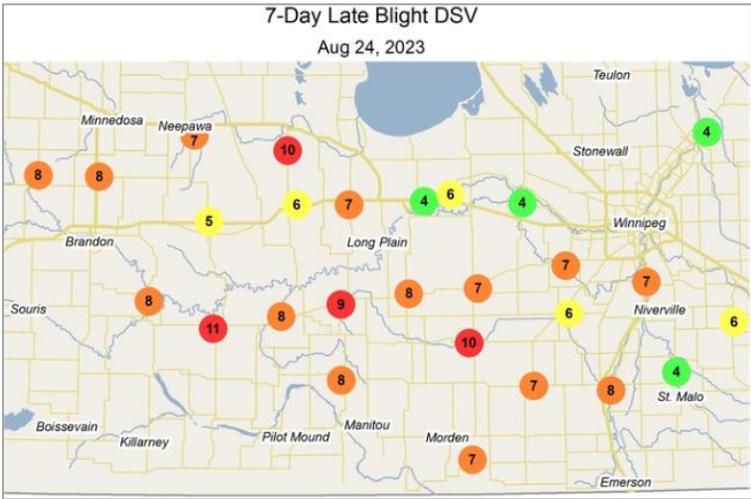


Fig. 6. 7-day cumulative late blight DSVs up to Aug 24 indicate moderate to high risk conditions for late blight disease, if the inoculum is present.

Table 4: Phytophthora infestans spore trapping and PCR results Week 10 (Aug 14 - Aug21).

Spore Trap Locations	Pi spores	Early blight (spore #s)	Comments
Shilo – OS	Negative	Negative	
Wawanesa –SG LF12	Negative	Negative	
Douglas – MW F362	N/A	No sample <i>Last week: Positive (60,500)</i>	No sample
Field W22-Carberry N –SS F369/ 371	Negative	Negative <i>Last week: Negative</i>	
Field 31C – Carberry N – SS F465 /462	Negative	Negative <i>Last week: Negative</i>	
Carberry N – AU F319	N/A	No sample	No sample
Carberry South – MW F456	N/A	No sample <i>Last week: Positive (393,000)</i>	No sample
Carberry North – MW F457	N/A	No sample <i>Last week: Positive (449,000)</i>	No sample
Brookdale – KJ F465	Negative	Negative	
Cypress River – SG F194	Negative	Negative <i>Last week: Negative</i>	
Melbourne – SG F192	Negative	Negative <i>Last week: Positive (211000)</i>	
Treherne – JG F461	Negative	Negative <i>Last week: Positive (274,000)</i>	
Portage – HB F464	Negative	Negative	
McDonald / Portage - SG/KPPA F459	Negative	Negative	
Bagot – DM-Delta F463	Negative	Negative	
Carman – VB/AB	Negative	Negative	
Winkler /TSC	Negative	Negative <i>Last week: Positive (267,000)</i>	

- In the coming 2-3 days, there is a forecast for rains (30 to 60% probability) in parts of Manitoba. Forecast for high temperatures in the mid-20s°C. Warm and moist soils can favour pink rot and leak diseases in fields with previous history. Planning for their management in storage should be considered for fields with history of these diseases.

If you suspect late blight in your area, please contact vikram.bisht@gov.mb.ca
