

Issue 11 – July 27, 2023

Manitoba Potato Report



Weekly Provincial Summary

- This week was a few degrees warmer than last week, with high temperatures ranging from 27 – 30°C. There were scattered and minor amounts of rainfall during the week in the province.
- Crops are being regularly irrigated where needed and tuber bulking is progressing well.

Overview

- Temperature highs ranged from 27 to 30°C at various Manitoba weather stations.
- There were scattered but minor rains in the province, and ranged from 0.5 to 10.6 mm.
- No late blight spores were trapped at any of the 17 sites from the spore trap network. So far, the late blight risk values (DSVs) are low.
- Late blight spores in traps have been reported in Ontario. Late blight sample from Alliston, Ontario was identified as US#23. Late blight was also reported in Quebec, and was US#23 strain.
- Aphid monitoring suction trap catches are now getting high. Green peach aphid and potato aphids were trapped; and could be a concern for seed potatoes.
- A few European corn borers (ECB) were trapped last week, and more ECB stem injury is being reported.
- 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 were very minor rains in the province from July 17-23, ranging from 0.6 mm in Carberry to 10.6 mm in Wawanesa (Table 1).
- These scant rains further brought down the % of normal precipitation at many sites in Manitoba, ranging from lows of 26-30% to mostly less than 60% of normal; while only Rivers (89%) and Shilo (125%) were closer to normal (Table 1, Fig. 1). <http://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf>.
- Lack of rain has created much bigger areas under “dry to very dry” category at 0-30 cm soil depth (Fig. 2). <https://www.gov.mb.ca/agriculture/weather/pubs/soil-moisture-30cm.pdf>
- There is a forecast for warmer temperatures but little rainfall in the coming few days.

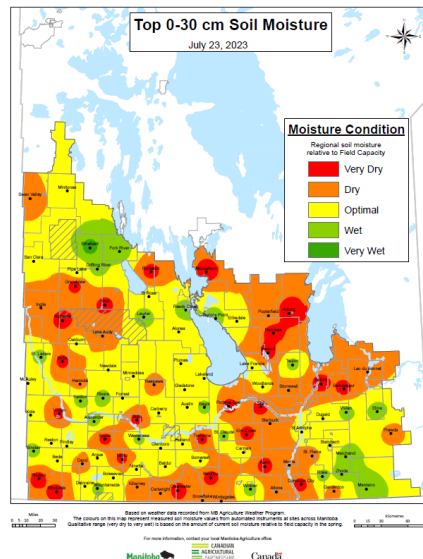
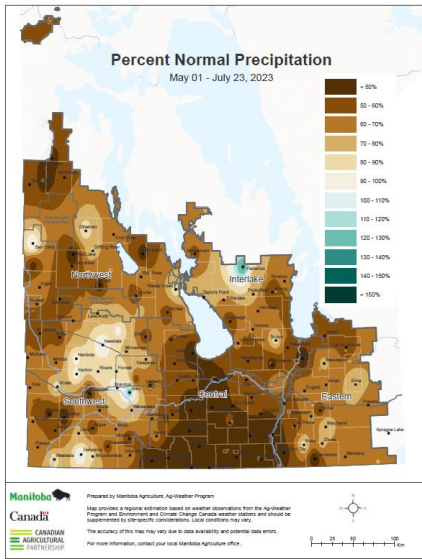


Fig.1. (far left) Rainfall (mm) in May to July 23 continues to be below normal in much of the potato growing areas, except a few sites in western potato areas of Manitoba.

Fig. 2. Soil moisture (0-30 cm depth) by July 23 has improved a bit and ranges from optimal to very dry in potato growing areas. Crop water demand for potatoes has increased.

Temperatures – Air & Soil

- The daytime temperatures during the week were generally 2-3 °C warmer than last week. For the Manitoba potato growing areas the daytime (max) temperatures ranged from 27 to 30°C. The overnight minimums were also slightly warmer, ranging from 7.4 to 10.5°C (Table 1).
- The P-Days (potato days with base 7°C) have reached >400 in many potato areas (www.mbpotatoes.ca) by July 23. The P-Days range from 100% 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 – July 17 to July 23 for selected potato growing areas.

* Crop Water Demand: [cwd \(mbpotatoes.ca\)](http://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 June 1- 26	2023 Rainfall (% of normal) from May 1
Altona	27.6	8.7	10.8	-	52	-	26
Austin	27.5	9.1	4.7	25.9	108	154.2	59
Bagot	28.0	8.4	0.8	24.9	97	157.4	53
Carberry EC	27.3	7.8	0.5	20.2	108	122.0	58
Carman	28.5	8.7	4.3	22.6	99	137.6	53
Cypress River	28.5	8.9	3.8	-	102	-	48
Glenboro	27.2	7.4	2.3	21.8	131	129.4	69
Holland	26.9	8.2	4.0	25.8	123	158.2	57
Morden	29.0	10.5	5.2	-	53	-	26
Portage EC	28.3	9.2	4.8	28.8	82	175.2	45
Rivers	27.0	7.6	2.9	22.6	148	134.2	89
Shilo	28.3	7.6	2.2	25.7	234	143.1	125
St. Claude	27.5	8.3	1.3	26.6	95	154.6	48
Treherne	28.0	9.1	4.2	28.0	60	160.6	30
Wawanesa	29.0	7.5	10.6	24.0	141	133.4	75
Winkler	30.3	8.1	4.5	24.9	99	147.1	49

Agronomics

- In this week, July 17-23, there have been scattered but scant rains across Manitoba. Preventative fungicide applications continue against early blight, botrytis and late blight.
- Crop water demand (CWD) for the week was NOT met by the rainfall for all potato growing areas in Manitoba (Table 1). The cumulative rainfall in western Manitoba was substantial enough from May 1 to July 23 to meet the cumulative CWD in Rivers, Shilo, Wawanesa and Glenboro.
- Supplemental irrigation and fertigation is being performed in many more fields.
- P-Days are currently around 400 and above in most potato growing areas ([P-Days \(mbpotatoes.ca\)](https://mbpotatoes.ca)). Normally, around 300 P-day value (potato heat units) protective fungicides for early blight control are recommended.

Crop Progress

- The plant stand and crop growth looks good across the province.
- Tuber bulking is progressing well with warm days and cool nights. Formation is at different stages; and many with fields at 4-6 inches in size.
- Even late planted fields are now showing good tuber set numbers and good size profile.
- Many fields have full canopy and plants in some fields are settling down on the ground. Within canopy microclimate could get high relative humidity and allow the Botrytis spp. and stem rots to infect plants.

Disease & Insect Pests Monitoring

- Early blight continues to be reported from more fields and is being managed well. Protective fungicide applications are continuing where needed. *Alternaria solani* spores are being trapped by passive spore traps.
- Some leafspots (minor incidents) of atypical early blight symptoms are being reported; these will be tested for Botrytis and Colletrichum sp.
- Aster leafhoppers (ALH) and Potato leafhoppers (PLH) are being reported from more areas, however, the numbers are low. There are minor incidences of purple top symptoms and leaf tip hopper burn (Fig. 3).
- Aphid monitoring suction trap catches are now getting high in southern Manitoba. Green peach aphids (GPA) were trapped at one site and Potato aphids (PA) at three sites. It is early in the seed crop and could spread PVY from crops with any level of virus inoculum in or around the seed fields. Both GPA and PA are efficient vectors of PVY (Table 2).
 - Research work presentation by Tyler McKenzie, of New Brunswick and discussion with researchers, at the PAA annual meeting in Charlottetown pointed out the success of early Aphid Oil use in combination with insecticides. This combination when regularly used showed significant reduction in % PVY numbers in fields, even when under very high green peach aphid pressure, in 2022.
- European corn borer damage to potato stems continues to be reported from western Manitoba, but the incidences appear to be minor and insecticide application is not recommended. Western Manitoba has high trap numbers (Table 3) as in previous years; Melbourne has the highest trap counts (2 years in a row).



Fig. 3. Hopper burn on leaf tips (a)(far left) is caused by Potato leafhoppers (b). Photos: Kurtis McKee (JP Wiebe farms)

Table 2. Weekly Aphid Report – Week 6 (July 17-23) 2023

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	1	2	65	68	0	1	Very few thrips
Field 2, K-16-6	Carman	Dufferin	1	4	23	28	2	0	
Field 3, S-29-2	Winkler	Rhineland	0	1	13	14	0	0	
Central Region									
Field 4 J-9-6	Swan Lake	Victoria	0	0	0	0	0	0	Not enough liquid in traps
Field 5 J-25-3	Glenora	Argyle	0	0	1	1	2	2	
Field 6 M-32-13	Westbourne	Portage La Prairie	1	4	8	13	1	12	
Western Region									
Field 7, A-12-14	Wellwood	North Cypress-Langford	0	0	5	5	1	0	Lots of thrips
Field 8, SP	Carberry	North Cypress-Langford	0	0	0	0	0	0	Suction trap? Lot of dirt in pans

* 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 monitoring has been going on since June 26, and stem borer injuries were being reported by July 10-17. There were increasing reports in July 17-23. The ECB adult moths are still showing up in late July (Table 3). Insecticide application is currently not recommended.

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

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

Late Blight Monitoring

Information

- Late blight risk forecasting is provided on a regional basis on www.mbpotatoes.ca. Currently, the 7-Day Disease Risk values are medium to very low. However, the cumulative DSVs from June 1 to July 30 show that a few potato station sites are near or above the critical value of 18 – Rivers, Glenboro, High Bluff and Carman (Fig. 4).
- A network of 17 passive Spornado traps for late blight spores, has been set up across potato growing areas of Manitoba to provide early warning of possible late blight risk. Early blight (*Alternaria solani*) spores are also checked at some sites.
 - **No late blight spores were detected in the samples processed in the 6th week of collection (July 17-24). (Table 4)**
 - PCR testing for early blight (*Alternaria solani*) spores was positive for some sites this week, suggesting that risk of early blight infections is increasing. Some sites had early blight disease but no spores were trapped.

Accumulated Late Blight DSV

Jun 1 - Jul 30, 2023

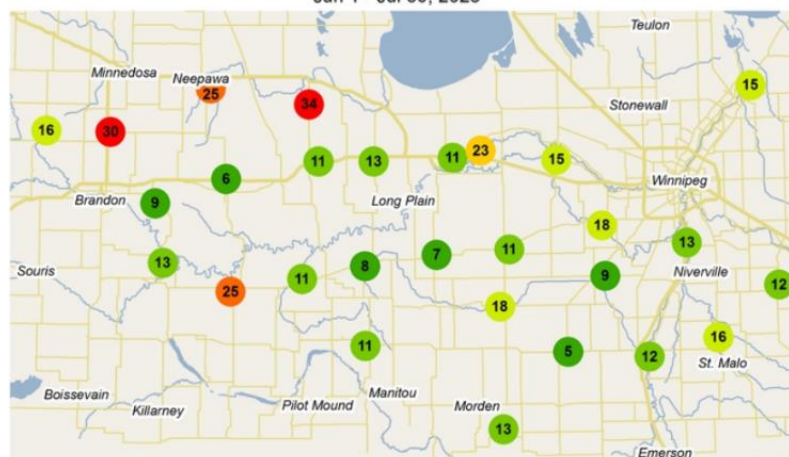


Fig. 4. The cumulative DSVs from June 1 to July 30 are near or above critical value of 18 in many potato growing areas in Manitoba.

The 7-Day DSVs (July 23-30) indicated low to medium risk of blight.

Sixth week's (July 17-24) PCR test results for presence of *Phytophthora infestans* (Pi) late blight spores are negative at all sites submitted (Table 4). Early blight disease and *Alternaria solani* spores were recorded in some more sites.

Table 4: *Phytophthora infestans* spore trapping and PCR results **Week 6 (July 17-24)**.

Spore Trap Locations	Pi spores	Early blight (spore #s)	Comments
Shilo – OS	Negative	Negative	Early blight seen
Wawanesa –SG LF12	Negative	Negative	Early blight seen
Douglas – MW F362			Sample not recd
Field W22-Carberry N –SS F369	Negative	Positive (1890)	
Field 31C – Carberry N – SS F465	Negative	Positive (3490)	
Carberry N – AU F319	Negative	Positive (45,000)	
Carberry South – MW F456			Sample not recd
Carberry North – MW F457			Sample not recd
Brookdale – KJ F465	Negative	Negative	
Cypress River – SG F194	Negative	Negative	
Melbourne – SG F192	Negative	Positive (675)	Early blight seen
Treherne – JG	Negative	Positive (1290)	
Portage – HB F464	Negative	Negative	
McDonald / Portage - SG/KPPA F459	Negative	Positive (159)	
Bagot – DM-Delta F463	Negative	Positive (541)	Early blight in area
Carman – VB/AB	Negative	Negative	
Winkler /TSC July 17 – 20	Negative	Positive (98)	Early blight in area

Late Blight Reports Outside of Manitoba:

- Late blight has been reported from Ontario on July 17 by Eugenia Banks (Fig 5). Sample sent to NC State University was identified as US#23, July 28 report. US#23 strain is a highly aggressive strain on tomatoes and potato tubers.
- Late blight was also reported in Quebec, and was also identified as US#23 strain. Known infected plants were destroyed.



Fig. 5. US #23 infection on potato in Aliston area, ON, July 17. Photo: Eugenia Banks, ON.

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