

Issue 13– August 1, 2024

Manitoba Potato Report



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Provincial Summary

- There was very little rainfall this past week in the potato growing areas of the province. The cumulative precipitation since May 1 ranged from 123 to 179 % of the 30-year normal in the potato growing areas.
- Most potato crops are in rapid tuber bulking stage with good set and size profile, many reaching over 5-inch.
- Total aphid counts in the traps increased significantly over last week and was higher than similar period last year. Young larvae of Colorado potato beetles are being effectively controlled in most areas of Manitoba. European corn borer moth counts are still low, and minor levels of stem borer injury is being reported.
- Regular weekly reports with updates on disease and insect pests, including late blight risk forecasts on potatoes is also available at <http://www.mbpotatoes.ca/index.cfm>. The site has SPRAYcast® that provides a 3-day spray advisory weather forecast for selected sites.

Ag Weather Data

Precipitation and Soil Moisture

- The cumulative rains from May 1 to July 28 are still above the 30-year normal, ranging from 123 % (Glenboro) to 179 % (Winkler).in the selected sites (Table 1, Fig. 1) These numbers are dramatically higher than drought conditions of 2023. <https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf>
- There was very little rainfall in potato growing areas of the province from July 22 to July 28 (Table1, Fig 2), ranging from 0 mm in Treherne, Holland and Carberry to 2.6 mm in Winkler; while the 23.8 mm in Altona was an exception. [Province of Manitoba | agriculture - Weather Conditions and Reports \(gov.mb.ca\)](https://www.gov.mb.ca/agriculture/weather/pubs/province-of-manitoba-agriculture-weather-conditions-and-reports).

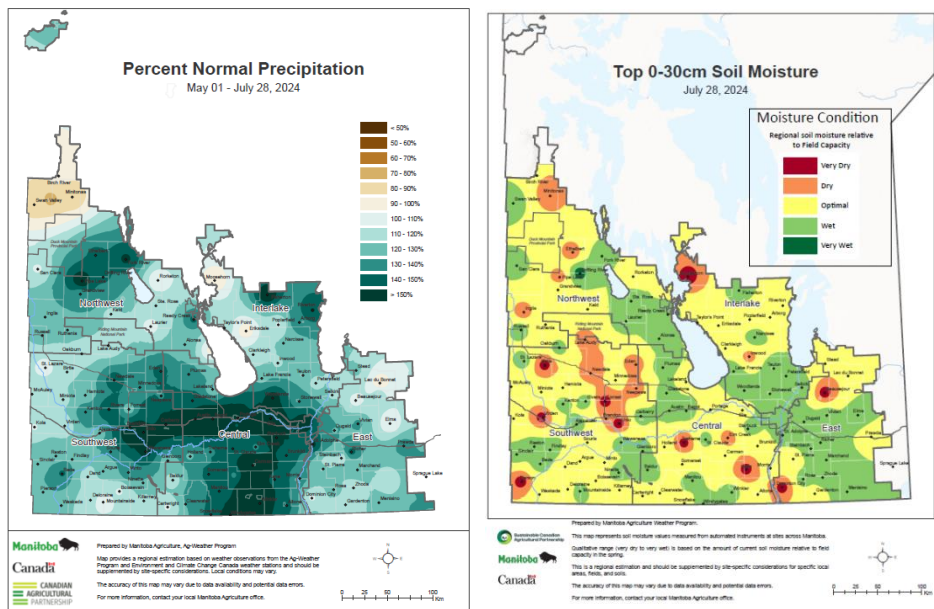


Fig. 1. Left: The precipitation as % of normal, is significantly above the 30-year average in potato growing areas. Right: Soil has become drier due to low rainfall in the last two weeks.

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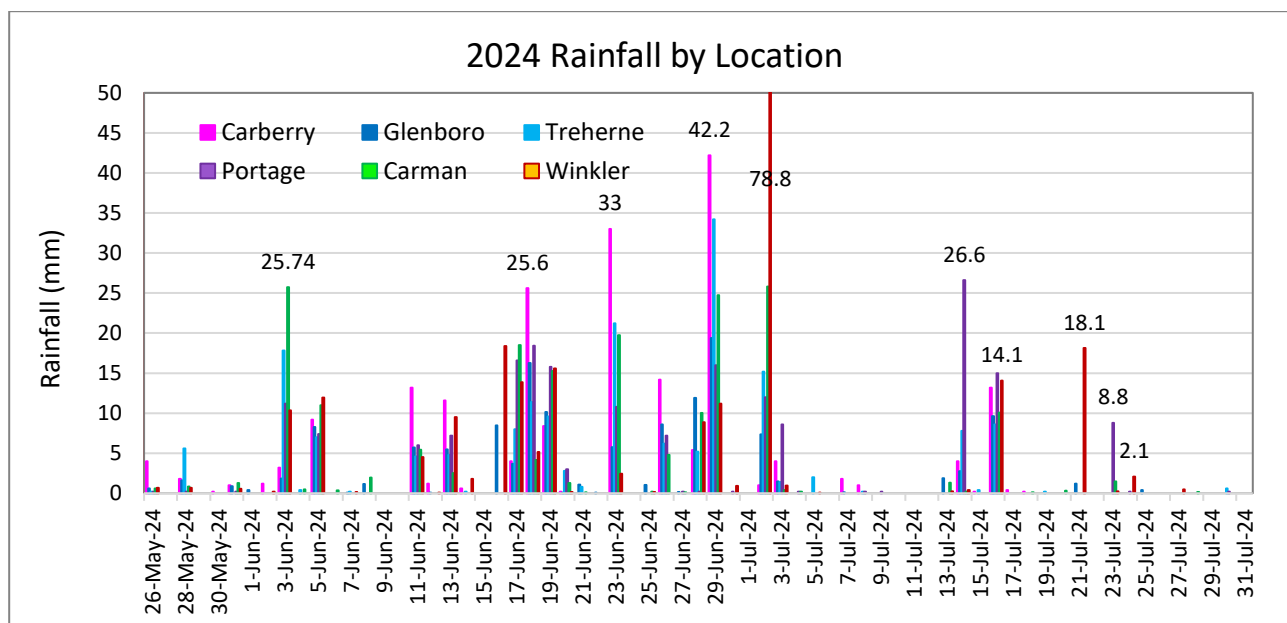


Fig. 2. After frequent rains in May and June, there were widespread rains on July 2-3, but relatively less from mid-July to end of July; fields have begun to dry and some need supplemental irrigation

Temperatures – Air and Soil

- Daytime high temperatures from July 22 to 28 was similar to the previous week ranging from 28.6 (Treherne) to 31.3 °C (Winkler). Overnight lows were 3-4 °C warmer than last week, and ranged from 10.0 (Shilo) to 14.4 °C (Altona) (Table 1).
- P-Days (Potato Physiological days), cumulative heat units for potato growth was normal to slightly above normal (100 to 110 %) from June 1 to July 28. <https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-p-day.pdf>. By July 30, the cumulative P-Days ranged from 456 in Shilo & Carberry to 490s in the Gladstone, Portage and St. Claude areas ([P-Days \(mbpotatoes.ca\)](https://www.gov.mb.ca/agriculture/potatoes/p-days)). This range indicates the potato crop which emerged by June 1 should be in rapid bulking stage.
- Soil temperatures on July 22 at 5 cm ranged from 18 to 25 °C at various station sites and at 20 cm depths were around 17-22 °C in the selected sites across Manitoba. Such warm and wet soils favour blackleg, soft rot bacteria and other moisture loving pathogen.

Weather Data Summary for Selected Potato Site Stations

- The daytime temperature highs were in 30 °C range; while the overnight lows were in low teens.
- The “potato crop water demand” (CWD) for the week was much higher than the rainfall received in all potato sites (Table 1). CWD is a function of crop growth, air temperature and wind speed, all of which affect the water evapotranspiration from a crop.
- According to the Environment and Climate Change Canada (ECCC) current weather forecast, some scattered rain are forecast for Friday night (Aug 1) and until Aug 6 across different potato sites, with temperature highs in mid 20s to low 30s °C and overnight lows in teens. [Manitoba - Weather Conditions and Forecast by Locations - Environment Canada](https://www.ec.gc.ca/meteo/eng/forecast/Manitoba-Weather-Conditions-and-Forecast-by-Locations-Environment-Canada)

Table 1. Manitoba Ag Weather Data – July 22 to 28

Region	Max Temp (°C)	Min Temp (°C)	Rain (mm) for the week	Crop Water Demand (mm) for the week	Rain (mm) (Since May 1)	2024 Rainfall (% of normal) since May 1	2023 Rainfall (% of normal) May1-Jul 30	2022 Rainfall (% of normal) May 1 – July 25
Altona	31.0	14.4	23.8	NA	305	142	31	115
Austin	30.3	13.5	0.8	30.0	336	174	54	194
Bagot	30.4	12.9	0.1	27.8	331	171	49	187
Carberry EC	29.7	11.7	0.0	NA	310	160	55	155
Carman	30.3	12.2	1.5	19.1	314	162	50	116
Cypress River*							50	140
Glenboro	30.0	12.0	0.4	23.8	247	123	64	160
Holland	29.9	11.5	0.0	30.0	289	129	54	158
Morden*							25	127
Portage EC	30.2	13.6	2.1	29.4	289	150	43	145
Rivers	29.1	11.2	1.0	26.7	259	151	84	186
Shilo	29.5	10.0	0.1	29.7	333	172	118	159
St. Claude	29.8	14.0	2.4	25.0	296	143	45	121
Treherne	28.6	11.7	0.0	21.1	285	138	28	136
Wawanesa	31.0	10.4	0.4	24.1	298	153	72	156
Winkler	31.3	14.1	2.6	23.7	375	179	47	128

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

* A few days data was unavailable, so no data was made available.

NA – Crop water demand data not available.

Crop Progress

- Most potato fields are doing well, with canopy fully closed between rows in most fields.
- Four to six fungicide applications have been applied so far, and more in hail affected fields.
- Warm days and cool nights are favorable for tuberization, especially with good soil moisture. Crops are in rapid tuber bulking stages and ranges to over 5-inch size in many fields. Tuber set has been fairly good, ranging from 8-18 per hill. (Fig. 3a).
- Above average rains from May to early July have leached away some nitrogen in some fields and growers are fertigating to meet the crop needs. Based on petiole testing, 4-5 fertigation applications have been made in some fields.
- There are more reports of heat-runners, especially in fields with canopies not row-closed(Fig. 3b).



Fig.3a: Tuberization appears good in many fields; however, b: there are reports of heat runners. Photos a: Tavis Mangin (Simplot), b: Cassidy Phillips (Manitoba Agriculture).

Disease Monitoring

- Early blight (EB) spores in Spornado traps continue to be high between July 22 to 29 (Table 2). Early blight is prevalent in most of Manitoba. Ranger Russets and early maturing varieties are showing high levels for this early in the season, reaching mid to top of canopy. Russet Burbank variety still appears much cleaner.
- Within the crop canopy more incidences of white mold and botrytis stem rot have been reported.
- Sporadic instances of blackleg related plant mortality are being reported (Fig. 4).
- In some more fields, root-galls of powdery scab are being reported. Lab testing will be conducted to confirm if the root-galls have PMTV (Potato Mop-Top Virus) infection.
- Purple top disease has been reported at low levels, and this relates to finds of Aster leafhoppers in some areas (Fig. 5a). Purple top disease is also associated with aerial tuberization (Fig 5b), which may also be caused by severe damage on stems due to hail.



Fig.4.: Blackleg affected plants continue to be reported. Photo: Scott Graham (Simplot). Moist and warm soils favour the disease..



Fig.5:a: Purple top of potato caused by Aster yellows phytoplasma, transmitted by Aster leafhoppers. b: Aster yellows also leads to aerial tuberization, while in many cases it may be due to damage to stems by hail. Photos: Scott Graham (Simplot)

Late Blight Monitoring

Monitoring and Forecasting

- Late blight Disease Severity Values (DSVs) are cumulative numbers starting from June 1. Please refer to the risk maps on [Late Blight \(mbpotatoes.ca\)](http://www.mbpotatoes.ca).
- **Currently, the cumulative 7-Day DSV numbers (June 1-July 30), suggest moderate to high risk of late blight in the presence of inoculum in all potato growing areas (Fig. 6).**
- A network of 16 passive Spornado traps for late blight spores has been set up across Manitoba. Spore trapping is another tool-in-the-box of late blight management, and does not replace scouting.
- The sixth week of cassette collections from the spore traps was on Monday, **July 29**. Results from the PCR testing are included in table 2 below.
 - **No late blight (*Phytophthora infestans*) spores were trapped in the week (July 22 to 29) (Table 2).**
 - The spore numbers of *A. solani* trapped are slightly lower than last week's count; however, the Alternaria leaf-spot diseases are now being reported from all potato growing areas of the province; so there may not be any further need for *A. solani* testing.
 - In 2024, it appears that *A. solani* spores were trapped 7 to 10 days before early blight reports.
- Late blight risk maps, P-Days, and SprayCast maps are available at <http://www.mbpotatoes.ca/index.cfm>.
- On July 23, late blight disease on potato was confirmed in St. Joseph's County, Michigan.

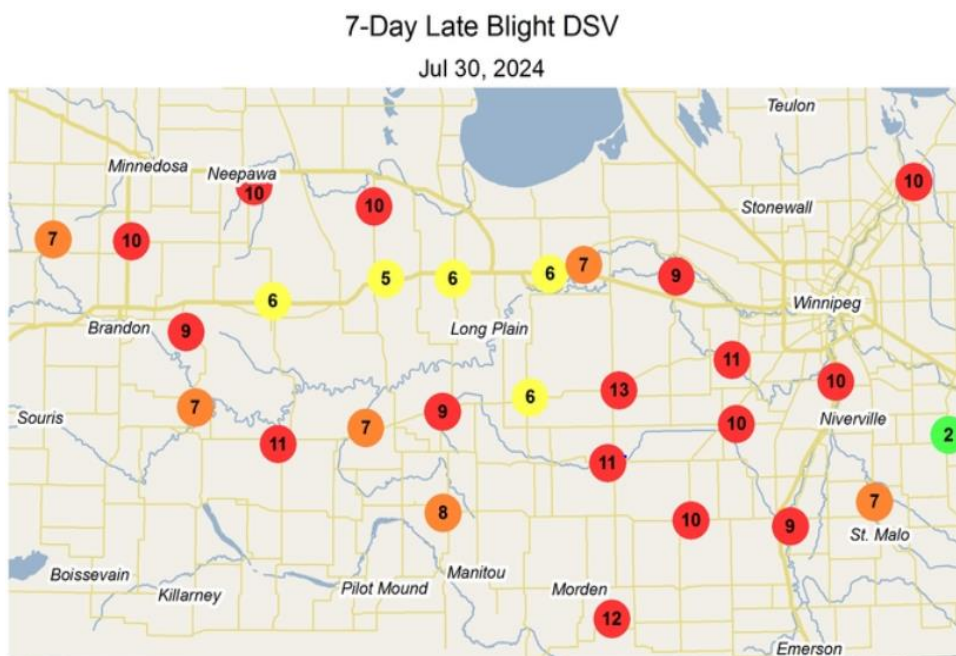


Fig. 6. 7-day cumulative DSVs for the week suggest that conditions have led to moderate to high risk of late blight.

Table 2: Phytophthora infestans spore trapping and PCR results week 4 (July 22-28).

Spore Trap Locations	Pi spores	Early blight (spore #s) max	Spornado Sr. No.
Rivers – SS (WL21)	Negative	89,000	H002
Shilo – MW	Negative	66,400	H362
Douglas – MW	Negative	11,100	F456
Wellwood – SS – 32-12	Negative	335,000	F462
Carberry N – HW#5 – SS	Negative	227,000	F371
stCarberry N - Acad- HC	Negative	137,000	H381
Carberry South (B) – MW	Negative	442,000	F467
Glenboro – MW	Negative	29,500	F362
MacGregor – SG	Negative	337,000	H361
Melbourne – SG	Negative	186,000	F194
Treherne – CC	Negative	73,100	F 461
Cypress River – CC	Negative	68,700	F 464
Bagot – DM-Delta	Negative	31,800	F463
Portage – SG	Negative	71,600	F192
Carman – SG	Negative	324,000	LF-12
Stephenfield – VB	Negative	281,000	F459

Insect Pests Monitoring

- Suction and pan traps for **aphid monitoring** have been set up in eight seed potato fields across the province. Regular weekly monitoring is in the sixth week. Samples were received from all eight sites.
- Early season aphid counts had a significant increase over last week's numbers (Table 3).
 - The total number of aphids trapped in 8 sites was higher than last year's total at this time of year.
 - There is a wide variability in aphid trap counts – southern and western parts showing high numbers.
 - No green peach aphid at any site, but potato aphids (PA) were trapped in 5 of 8 sites, similar to last week. A total of 20 PAs were trapped in 8 sites, compared to 9 last week – there is a trend of increasing numbers.
 - The potato-colonizing aphids can spread the PVY to cleaner fields from nearby high levels of inoculum. Spray with protective paraffinic oils is recommended.
 - Minnesota aphid alert has advised that even though the aphid numbers were currently low, the count is increasing rapidly; green peach aphids and potato aphids were also present (July 19-26).
 - Aster leafhoppers (ALH) and Potato leafhoppers (PLH) were trapped in the week. ALH causes aster yellows leading to purple tops and aerial tubers; while PLH causes leaf tip burn, stunting and yield loss.
- New generation of **Colorado potato beetles** (CPBs) as young larvae are still active in many potato growing regions of Manitoba (Fig. 7).
 - Scouting for infestation and multiplication can help time the foliar insecticides, if needed.
 - More foliar insecticides applications appear to have been used this year. The larval stages are quite sensitive to foliar insecticides. Beneficial insects are also active.
- Delta traps with Iowa strain **European corn borer** pheromone lure traps had been catching low counts of ECB moths as compared to previous years. These low counts average <1 moth per trap.
 - More fields with minor incidences of borer infestation of stems are being reported (Fig 8).

Table 3. Weekly Aphid Report – Week 6 (July 22 – July 29) 2024

Field #	Town	RM	Green Peach Aphid	Potato Aphid	Other Aphid	Total *	ALH	PLH	Comments
Southern Region									
Field 1-H	Winker	Stanley	0	10	67	77	0	8	
Field 2-K	Stephenfield	Dufferin	0	2	32	34	1	0	
Field 3-S	Winkler	Rhineland	0	1	24	25	0	2	
Central Region									
Field 4-S	Swan Lake	Victoria	0	0	2	2	0	0	
Field 5-S	Glenora	Argyle	0	0	4	4	0	0	
Field 6-S	Westbourne	Portage La Prairie	0	0	20	20	1	2	
Western Region									
Field 7-A	Wellwood	North Cypress-Langford	0	6	6	12	0	0	
Field 8-S	Carberry	North Cypress-Langford	0	1	7	8	0	0	

* 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.



Fig. 7 a, b: CPB larvae still active in southern Manitoba; Photos: Cassidy Phillips (Manitoba Agriculture).



Fig. 8. European corn borer larva in a potato stem.in Shilo area, Photo: Janelle Lavich (Choice Agri). The incidence is minor so far.

Growers and industry stakeholders, please report or submit for diagnosis, any disease or insect observations of importance. If you suspect late blight in your area, please contact vikram.bisht@gov.mb.ca, or 204-745-0260.