

Issue 9 – July 5, 2024

Manitoba Potato Report



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Provincial Summary

- Rains have continued across Manitoba, and many fields are very wet for ground operations.
- Most potato fields are doing very well, with over 90% of the fields estimated to have emergence. Fields are at varying growth stages, from early emergence to row-closure.
- Early planted fields are showing good tuber formation and sizing up well, with over 3 inch tubers.
- Cumulative rain so far has been 171 to 226 % of normal in potato growing areas.
- Early season aphid trapping is low.
- Overwintering adult Colorado potato beetles are now very active in all potato growing areas of Manitoba.
- Regular weekly reports with updates on disease and insect pests, including late blight risk forecasts on potatoes will also be available at <http://www.mbpotatoes.ca/index.cfm>. The site also carries SPRAYcast®, providing 3-day spray-advisory weather forecasts for selected sites..

Ag Weather Data

Precipitation and Soil Moisture

- The top 30 cm was generally wet by July 1, with most potato growing areas are still wet to very wet relative to field capacity (Fig.1). The 0-120 cm depths are also wet to very wet relative to field capacity. <https://www.gov.mb.ca/agriculture/weather/pubs/soil-moisture-30cm.pdf> and <https://www.gov.mb.ca/agriculture/weather/pubs/soil-moisture-120cm.pdf>.
- Frequent and widespread heavy rains in late May and June, kept the soil moisture high in many fields, especially the ones with poor drainage. Precipitation (mm) in May and up to July 1 was above normal across agro-Manitoba, ranging from 171% (Glenboro) to 226% (Carberry and Winkler) in the selected sites (Table 1). <https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf>.
- After May 25, scattered rains on June 3, 11, 13, 16, 18,19, 23, 26, 28, 29 and July 2 which were quite widespread across Manitoba (Fig. 2), led to wet or flooded spots in many potato fields.

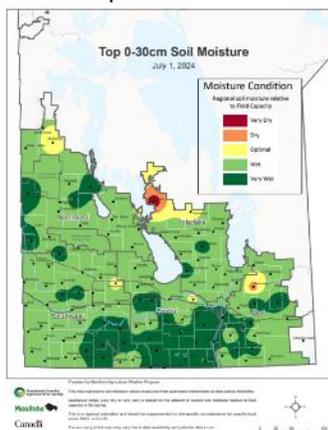


Fig. 1. 0-30 cm depth soil profile was wet to very wet relative to field capacity. Similarly 0-120 cm depths:were wet in most of agro-Manitoba potato areas. Ground operations were slowed down in some fields due to wet conditions.

[Province of Manitoba | agriculture - Weather Conditions and Reports \(gov.mb.ca\)](http://www.gov.mb.ca/agriculture-weather-conditions-reports)

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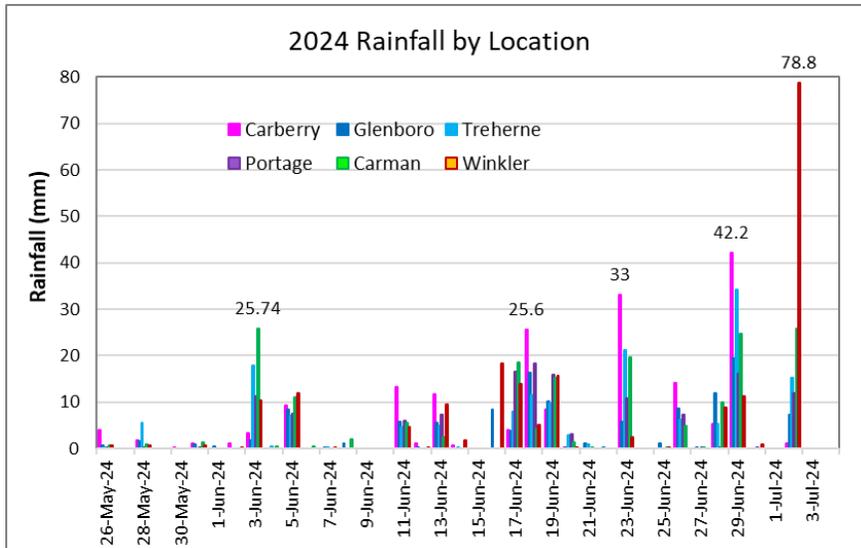


Fig. 2. Heavy and widespread rain on May 25 was followed by frequent rains in June, leading to many wet fields across Manitoba.

Temperatures – Air and Soil

- The (June 24 to July 2) week was 2-3 C warmer than the previous week. P-Days (Potato Physiological days), cumulative heat units for potato growth was near normal (95 to 110% of normal) during June 1 to July 2 (Fig. 3a). <https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-p-day.pdf>. The cumulative P-Days ranged from 222 in Rivers to around 250 in Portage area.
- The heat accumulation in terms of GDD from May 1 to July 1 appears to be just below normal (Fig. 3b). <https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-gdd.pdf>
- The daytime high temperatures (June 24 to July 1) ranged from 26.7 (Rivers) to 30.5 °C (Winkler) and overnight lows ranged from 5.3 (Winkler) to 9.1 °C (Portage) (Table 1). Daytime highs were generally 3-4 °C warmer than last week.
- Soil temperatures at 5 cm and 20 cm depths are hovering around 16-18 °C by July 1. Warm and wet soils favour blackleg and soft rot bacteria.

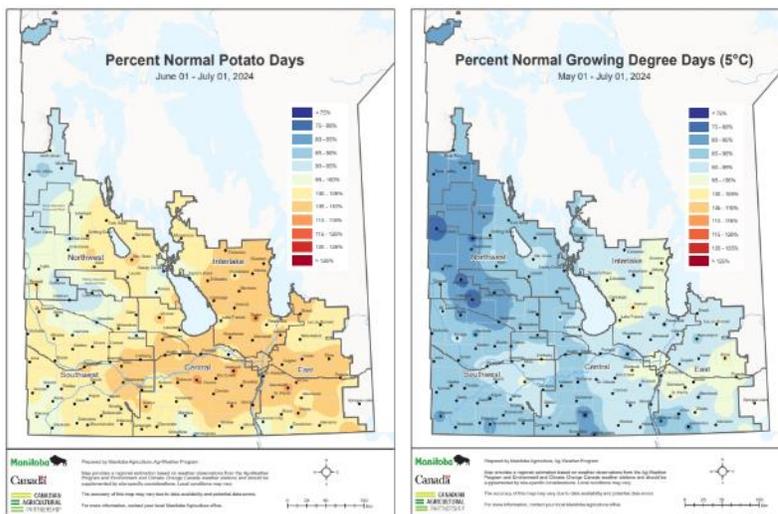


Fig. 3 a) The cumulative potato heat units, P-days (base 7-30C) are 95 to 110 % above normal from June 1 to July 1. b) GDD (base 5C) is cooler than normal – this indicates that heat for potatoes is just perfect, while it is cool for other field crops.

Weather Data Summary for Selected Potato Site Stations

- The week (June 24 – July 1) was 3-4 °C warmer than the previous week (Table 1).
- The week's rainfall ranged from 36.7 mm (Rivers) to 99.7 mm (Winkler), much higher than previous week.
- Cumulative rains from May 1 to July 1 are above the 30-year normal at 171 % (Glenboro) to 226% (Carberry & Winkler). Wet fields have disrupted the ground operations like hilling and herbicide applications (Fig. 4).
- The last few days has been marked by a few thunderstorms, with strong winds and scattered hail.
- According to the Environment and Climate Change Canada (ECCC) current weather forecast, more scattered rain is expected from Saturday night (July 6) to Tuesday (July 8) across Manitoba, with daytime temperature (°C) highs in high-20s and overnight lows in mid-teens, which favour tuberization.



Fig.4 a, b) Thunderstorms caused many wet spots and flooding in some fields. The field conditions improved quickly in tile drained fields. Photos: Harrison Loewen (KR Crop Check); c) Tile drainage working full bore. Photo: Scott Grahon (Simplot Canada)



Table 1. Manitoba Ag Weather Data – June 24 – July 1

Region	Max Temp (°C)	Min Temp (°C)	Rain (mm) for the week	Rain (mm) (Since May 1)	2024 Rainfall (% of normal) since May 1	2023 Rainfall (% of normal) May 1 – July 3	2022 Rainfall (% of normal) May 1 – July 3
Altona	29.8	5.7	60.2	254	173	23	116
Austin	28.4	8.2	47.5	299	225	64	217
Bagot	28.6	8.2	46.0	287	216	53	217
Carberry EC	27.5	6.2	62.2	291	226	75	169
Carman	29.4	6.3	65.5	300	218	51	108
Cypress River	28.1	5.8	47.0	295	195	53	129
Glenboro	29.2	7.0	48.1	230	171	89	145
Holland	29.0	6.1	42.8	260	172	52	144
Morden	29.8	7.6	89.5	316	211	25	123
Portage EC	29.4	9.1	36.7	253	191	44	137
Rivers	26.7	5.8	55.9	234	190	111	187
Shilo	27.3	5.7	64.7	277	215	164	146
St. Claude	29.0	8.8	55.7	281	201	56	110
Treherne	27.0	7.0	54.6	266	191	29	115
Wawanesa	28.6	6.2	44.3	256	199	95	149
Winkler	30.5	5.3	99.7	339	226	53	106

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

Crop Progress

- Most potato fields are doing well, with 4 to over 24 inch plants. In most early planted fields, the canopy is almost closed-in between rows (Fig. 5 a, b). A fungicide application before row closure is helpful to get good coverage.
- Warm days and cool nights are favorable for tuberization, especially with good soil moisture. Tubers range from tuber initials to over 3 inch size in many fields
- Hilling operations and other ground operations including herbicide applications have been disrupted in many areas (Fig. 6) due to frequent rains, which have prevented wet fields from drying down.
- In some fields, minor metribuzin herbicide injury has been noted on the processing potatoes (Fig. 7).



Fig.5 a,b) Good crop stand can be seen in many areas. Plant canopy is row-closed in many fields. Photo: a: Vikram Bisht (Manitoba Agriculture) b: Janelle Lavich (Choice Agri).



Fig.6 a,b) Frequent rains have prevented dry-down of many fields, and disrupted hilling and herbicide applications. Photos: Vikram Bisht (Manitoba Agriculture).



Fig.7 a,b) Metribuzin injury on Russet Burbank tops. a) diffused discoloration and no crinkling, unlike potato mosaic infection; b) yellowing veins are also typical symptoms on many varieties.

Disease Monitoring

- The 0-30 soil profiles in many areas are still wet (based on field capacity). The thunderstorms and hail have caused stem and foliage injury, these sites are prone to fungal and bacterial infection. More and more blackleg infected plants are being reported (Fig. 8 a, b, c).
- Strong winds have caused sand blasting of potato sprouts and young plants, causing micro-injuries which are prone to black dot. Fungicides targeting black dot disease would be helpful soon after sand blasting.
- With Spornado trapping of early blight spores (noted last week) it is interesting that we already have reports of early blight disease, at low severity levels (Fig. 9). The cumulative P-Days are 222 to 252 ([P-Days \(mbpotatoes.ca\)](https://mbpotatoes.ca)), and still below 300, the critical value where fungicide targeted for early blight is normally recommended. However, in 2024 warm and humid environments have favoured early blight – and early symptoms have already been seen. This week also most sites had early blight spores in traps (Table 2).
- Potato mosaic infected plants have been noted in more fields. The infected plants are randomly distributed in the field, are lighter in color than neighbouring plants, and often have smaller crinkly leaves (Fig. 10).
- Long term stored potatoes are showing low to high levels of silver scurf infection (Fig. 11). Any disturbance of sporulating infected tubers raises the level of spore count in the storage and further increases the infection on other tubers.

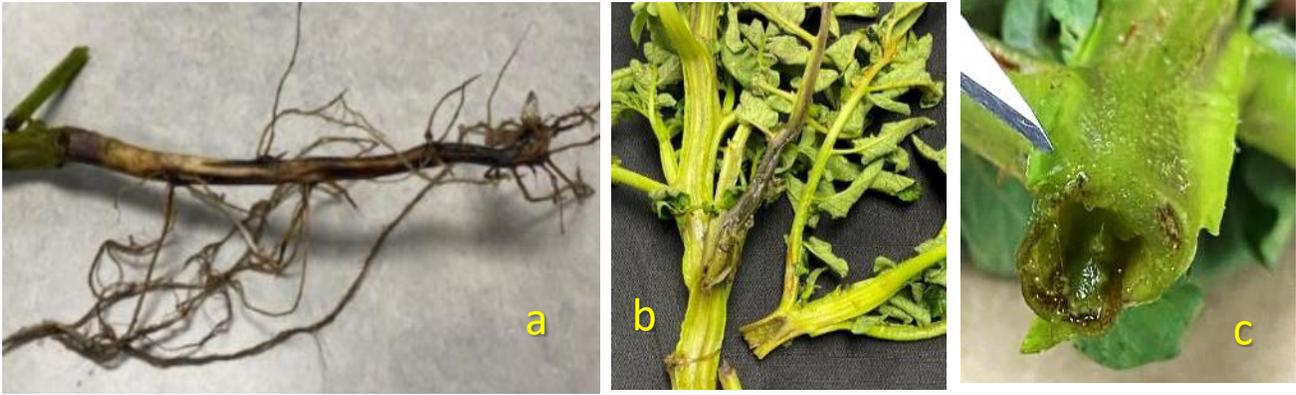


Fig. 8 a,b,c) Early symptoms of blackleg. Photos: a: Vikram Bisht and b, c: Cassidy Phillips (Manitoba Agriculture). With warm and wet conditions there is probability of more blackleg in wet fields.



Fig. 9. Early symptoms of early blight seen in the lower leaves of closed in canopy. Photo: Janelle Lavich (Choice Agri).

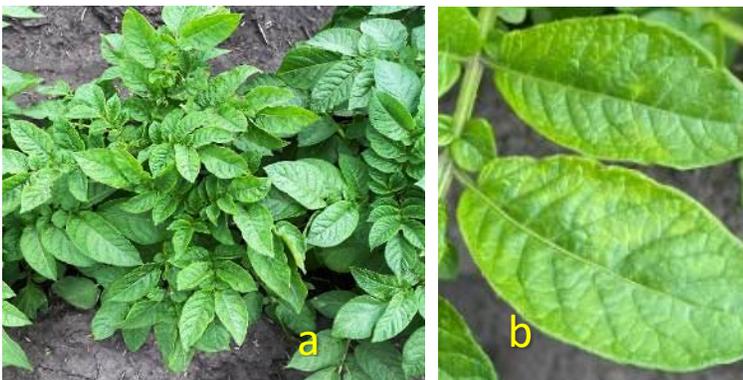


Fig. 10 a) Potato mosaic infected plants, with percent infection levels varying from low to high. b) Crinkling and mottling on leaves, which is different from the yellowish discoloration caused by metribuzin. Photos: Vikram Bisht (Manitoba Agriculture).



Fig. 11 a) Silver scurf infected tuber; b) Conidiophore with conidia, appear like spruce trees under microscope. Photos: Vikram Bisht and Sonila Sherpa (Manitoba Agriculture).

Late Blight Monitoring

Monitoring and Forecasting

- Late blight risk forecasting has begun. Late blight disease Risk 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). The DSVs represent the potential risk of late blight occurring when the inoculum is present. **Currently, the cumulative DSV numbers (June 1-July 2) indicate moderate risk of blight in Manitoba, if inoculum is present.** DSVs in Gladstone are high, Glenboro, Carman and Winkler are moderate while other sites appear to be at low risk.
- Fields nearing row closure will benefit from having at least one late blight protectant fungicide before row closure. Some farms have already had 2-3 applications.
- A network of 16 passive Spornado traps for late blight spores, across Manitoba has been set up. Spore trapping is another tool-in-the-box of late blight management. It does not replace in-field scouting.
- The second round of cassette collections from the spore traps was on Tuesday, July 2. Results from the PCR testing are included in table 2 below.
- No late blight (*Phytophthora infestans*) spores trapped in the week (June 24 to July 2) (Table 2).
- Late blight risk maps, P-Days, and SprayCast maps are available at <http://www.mbpotatoes.ca/index.cfm>.

Table 2: *Phytophthora infestans* spore trapping and PCR results **Wk 2 (June 24 – July 2)**.

Spore Trap Locations	Pi spores	Early blight (spore #s) max	Comments	Spornado Sr. No.
Rivers - SS	x	x	No Sample	H002
Shilo - MW	Negative	285		H362
Douglas – MW	Negative	79		F456
Wellwood – SS (Paul)	x	x	No Sample	F462
Carberry N -SS (# 5)	Negative	39		F371
Carberry N – HC (Acadia)	Negative	1540		H381
Carberry South (B) – MW	Negative	Negative		F467
Glenboro – MW	Negative	343		F362
MacGregor – SG	Negative	795		H361
Melbourne – SG	Negative	512		F194
Treherne – CC	Negative	863		F 461
Cypress River – CC	Negative	1930		F 464
Bagot – DM-Delta	Negative	73		F463
Portage – SG	Negative	413		F192
Carman – SG	Negative	360		LF-12
Stephenfield - VB	Negative	114		F459

Insect Pests Monitoring

- Suction and pan traps for aphid monitoring have been set up in eight seed potato fields across Manitoba. Regular weekly monitoring has started.
- In 2023, Green peach aphids (GPA) and Potato aphid (PA) populations were very high towards the end of August. High GPA and PA levels carry the risk of higher transmission of PVY mosaics.
- Early season aphid counts showed low population levels at 3 sites (Table 3). Buckthorn aphids (potato colonizers) were trapped at two sites. Potato leafhopper was trapped at one site – early in the season.
- Delta traps with NY strain European corn borer pheromone lures have been set up in some fields mostly in western potato growing areas of Manitoba, where high populations have been noted in previous years.

- Overwintering adults of Colorado potato beetles (CPBs) are now active in all potato growing regions of Manitoba, but more so in southern Manitoba. CPBs are now multiplying all over at varying population densities. Egg masses at various stages of development have been seen (Fig.12). Scouting for infestation and multiplication is helpful in determining the timing for foliar insecticides if needed.

Table. 3. Weekly Aphid Report – Week 1 (June 24 – July 2) 2024

Field #	Town	RM	Green Peach Aphid	Potato Aphid	Other Aphids	Total *	AL H	PL H	Comments
Southern Region									
Field 1-H	Winker	Stanley	-	-	-	-	-	-	No sample
Field 2-K	Stephenfield	Dufferin	0	0	2	0	0	0	Buckthorn aphids
Field 3-S	Winkler	Rhineland	-	-	-	-	-	-	No sample
Central Region									
Field 4-S	Swan Lake	Victoria	-	-	-	-	-	-	No sample
Field 5-S	Glenora	Argyle	-	-	-	-	-	-	No sample
Field 6-S	Westbourne	Portage La Prairie	0	0	2	2	0	1	1 Buckthorn aphid
Western Region									
Field 7-A	Wellwood	North Cypress-Langford	-	-	-	-	-	-	No sample
Field 8-S	Carberry	North Cypress-Langford	0	0	0	0	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. 12. a, b) Overwintering adults of Colorado potato beetle (CPB) have become active in all potato areas of Manitoba, but higher populations were noted in southern Manitoba. a) CPB adults, b) Egg mass in Carberry area much later than in southern Manitoba. Photos: a: Vikram Bisht (Manitoba Agriculture), b: Janelle Lavich (Choice Agri).

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