Issue 14– August 9, 2024

Manitoba Potato Report

[Seasonal Reports](#) [Weekly Weather Maps](#) [Potato Production](#)

Provincial Summary

- There was very little rainfall in the past two weeks in the potato growing areas of the province. The cumulative precipitation since May 1 ranged from 117 to 168 % 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.
- Foliar diseases are at low levels, there is no late blight report in Manitoba.
- Total aphid counts in the traps has not increased over last week, but green peach aphid and potato aphids were trapped this week. 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 Aug 5 are still above the 30-year normal, ranging from 117 % (Glenboro) to 168 % (Winkler).at the selected sites (*Table 1*). *https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf*
- There was very little rainfall in the potato growing areas of the province from July 29 to August 5 (Table1), ranging from 2.3 mm in Altona to 10.5 mm in Rivers. *Province of Manitoba | agriculture - Weather Conditions and Reports (gov.mb.ca).*
- Low rainfall has resulted in optimum to dry 0-30 cm soil zone with respect to the field capacity. However, at the 0-120 cm depths soil moisture stayed generally optimum to wet in most potato areas (Fig 1).

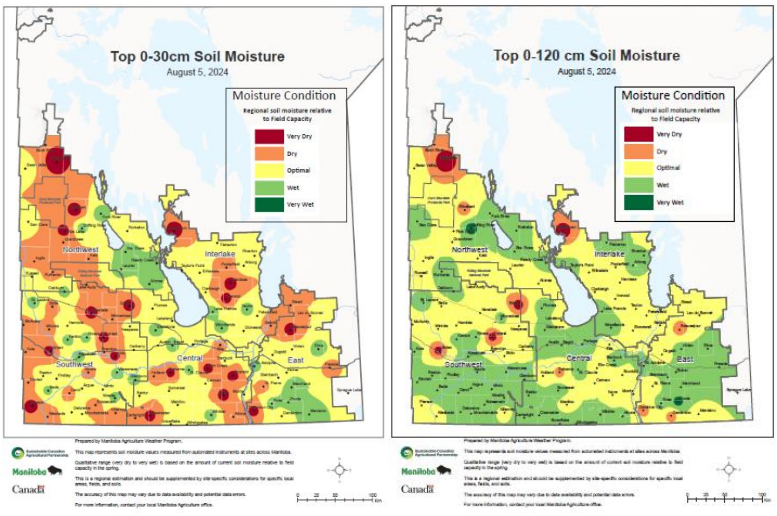

Fig. 1. Due to low rainfall in the week (July 29 – Aug 5) the soil moisture (relative to field capacity) in 0-30 cm zone has become drier in many of the potato areas, though mostly optimum level. At the 0-120 depths the moisture stayed at optimum to wet levels.

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Manitoba

Temperatures – Air and Soil

- Daytime high temperatures from July 29 to August 5 was much higher across the province compared to the previous week ranging from 31.0 (Rivers) to 33.0 ^{O}C (Carman). Overnight lows were generally 2-3 ^{O}C cooler than last week, and ranged from 7.3 (Treherne) to 10.4 ^{O}C (St. Claude) (*Table 1*).
- P-Days (Potato Physiological days with accumulation from about 50% potato emergence, cumulative heat units for potato growth was normal to slightly above 30-year normal (100 to 110 %) from June 1 to Aug 5. *https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-p-day.pdf.* By August 5, the cumulative P-Days ranged from 501 in Shilo and Carberry to >530 in the Gladstone, Portage and St. Claude areas (*P-Days (mbpotatoes.ca)* . This heat range indicates the potato crops which emerged by June 1 should be in rapid bulking stage.

Weather Data Summary for Selected Potato Site Stations

- The "potato crop water demand" (CWD) for the week was much higher than the rainfall received in all potato sites; almost 3 to 10 times the amount of rainfall received (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 Wednesday (Aug 14) and Aug 15 across different potato sites, with temperature highs in mid 20s ^{O}C and overnight lows around 8-10 by Sunday, August 11 and August 12 onwards upto mid-teens. Manitoba - Weather Conditions and Forecast by Locations - Environment Canada

Table 1. Manitoba Ag Weather Data – ***July 29 – Aug 5***

Region	Max Temp (ºC)	Min Temp (ºC)	Rain (mm) for the week	Crop Water Demand (mm) for the week	Rain (mm) (Since May 1)	2024 Rainfall (% of normal) since May 1
Altona	32.7	9.2	2.3	NA	307	134
Austin	32.3	10.0	4.2	40.6	340	162
Bagot	31.9	9.6	3.9	35.5	335	159
Carberry EC	31.6	9.0	7.1	30.6	317	150
Carman	33.0	8.7	8.6	29.6	323	152
Cypress River*						
Glenboro	31.8	8.4	9.6	31.2	256	**117**
Holland	32.7	8.3	8.7	39.4	297	124
Morden*						
Portage EC	32.5	10.3	5.5	**41.8**	295	140
Rivers	31.0	10.1	10.5	34.6	269	143
Shilo	32.4	9.6	10.0	39.0	343	162
St. Claude	32.4	10.4	7.2	36.7	303	138
Treherne	31.5	7.3	8.3	29.0	293	134
Wawanesa	31.4	9.3	9.8	**28.8**	307	145
Winkler	33.2	9.7	4.2	35.8	379	**168**

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.**

Manitoba

Crop Progress

- Most potato fields are doing well, with rapid bulking of tubers.
- 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. 2).
- In many fields, hail damaged plants have a secondary branching and a new set of tubers forming (Fig. 3).
- Five to seven fungicide applications have been applied so far, and more in hail affected fields.
- There are more reports of heat-runners, especially in fields with canopies not row-closed.

Fig.2 a, b: Tuber set is generally very good, with varying levels of bulking. Photos:a: Orla Sheridan (Shilo Farms), b: Harrison Loewen (KR CropCheck)

Fig.3 a, b, c: Hail damaged plants resulted in misshapen tubers and a secondary flush of new tubers. Photos: Leon Jarvis (Simplot),

Manitoba

Disease Monitoring

- Early blight (EB) spores in Spornado traps continue to be high between July 29 to August 6 (Table 2). Early blight is now 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.
- Sporadic instances of blackleg/stem rot related plant mortality were observed; and sometime associated with ECB boring injury on stems (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.

Fig.4. Blackleg / stem rot affected plants continue to be recorded, . Photo: Vikram Bisht (Manitoba Agriculture).

Late Blight Monitoring

Montitoring 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).
- Currently, the **cumulative 7-Day DSV numbers (June 1-August 7). suggest low to moderate risk** of late blight in the presence of inoculum in all potato growing areas (Fig. 5)**.**
- 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 seventh week of cassette collections from the spore traps was on Tuesday, **Aug 6**. Results from the PCR testing are included in table 2 below.
    - No late blight (*Phytophthora infestans*) spores were trapped in the week (July 29 to August 6) (Table 2). Samples from 3 sites were not received in time for shipment for testing.
    - Depending on the location, the spore numbers of *A. solani* trapped were either higher or lower than last week's count (Table 2); 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.
- Late blight risk maps, P-Days, and SprayCast maps are available at http://www.mbpotatoes.ca/index.cfm.

Manitoba

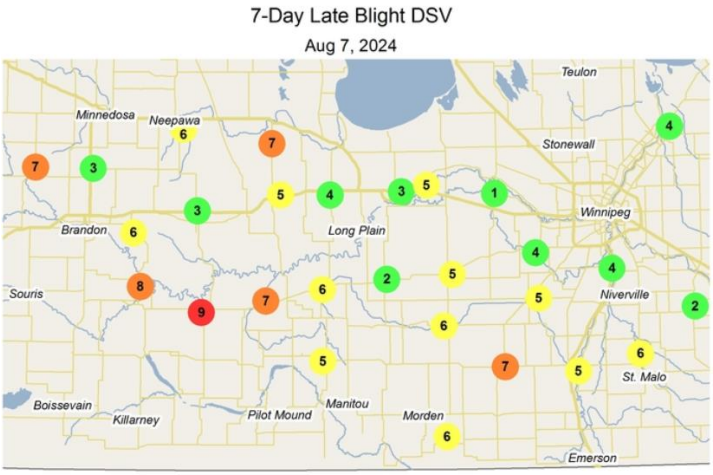

Fig. 5. 7-day cumulative DSVs for the week suggest that conditions have led to low to moderate risk of late blight, in the presence of inoculum.

Table 2: Phytophthora infestans sprore trapping and PCR results week 7 (July 29- Aug 6).

Spore Trap Locations	Pi spores	Early blight (spore #s) max	Spornado Sr. No.
Rivers – SS (WL21)	Negative	93,800	H002
Shilo – MW	Negative	146,000	H362
Douglas – MW	Negative	126,000	F456
Wellwood – SS – 32-12	Negative	106,000	F462
Carberry N – HW#5 – SS	Negative	278,000	F371
Carberry N - Acad- HC	Negative	156,000	H381
Carberry South (B) – MW	Negative	102,000	F467
Glenboro – MW	Negative	364,000	F362
MacGregor – SG	Negative	228,000	H361
Melbourne – SG	Negative	41,600	F194
Treherne – CC	-	-	F 461
Cypress River – CC	-	-	F 464
Bagot – DM-Delta	Negative	313,000	F463
Portage – SG	Negative	64,200	F192
Carman – SG	Negative	236,000	LF-12
Stephenfield – VB	Negative	223,000	F459

"-" *Samples not received / collected by shipping time.*

Insect Pests Monitoring

- Suction and pan traps for **aphid monitoring** have been set up in eight seed potato fields across the province. Weekly monitoring is in the seventh week. Samples were received from seven of eight sites.
- The season aphid counts was similar to that of last week's numbers (Table 3).
    - There is a wide variability in aphid trap counts – southern fields had more aphids per site compared to other sites.
    - **Green peach aphids** were trapped at only one site, but **potato aphids (PA)** were trapped in all seven sites from where the samples were received. A total of 37 PAs were trapped in 7 sites, compared to 20 last week and 9 in the week before. This strongly suggests a trend of rapid multiplication of potato aphids in the fields.

    - The potato-colonizing aphids can spread the PVY to cleaner fields from nearby high levels of inoculum. Spraying with protective parafinic oils along with insecticide is recommended.
    - Aster leafhoppers (ALH) and Potato leafhoppers (PLH) were trapped in the week at one or two sites. ALH causes aster yellows leading to purple tops and aerial tubers; while PLH causes leaf tip burn, stunting and yield loss.
- **Colorado potato beetles** (CPBs) populations have been effectively controlled in many regions.
    - 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 6) in Delta-trap fields and also others.
- **Variegated cutworms** were reported from a field and observed on foliage and stems (Fig 7). Some climbing type cutworms can do damage to foliage, stems and sometimes tubers

Table. 3. Weekly Aphid Report – ***Week 7 (July 29 – Aug 6) 2024***

Field #	Town	RM	Green Peach Aphid	Potato Aphid	Other Aphid	Total *	ALH	PLH	Comments
Southern Region									
Field 1-H	**Winker**	Stanley	4	7	42	53		5	Thrips
Field 2-K	**Stephenfield**	Dufferin	0	4	11	**15**		3	Thrips
Field 3-S	**Winkler**	Rhineland	0	7	18	25	2		4 lacewing adults
Central Region									
Field 4-S	**Swan Lake**	Victoria	0	7	7	14			
Field 5-S	**Glenora**	Argyle	0	4	2	6			
Field 6-S	**Westbourne**	Portage La Prairie	0	4	10	14			
Western Region									
Field 7-A	**Wellwood**	North Cypress-Langford	-	-	-	-			Samples not received
Field 8-S	**Carberry**	North Cypress-Langford	0	4	14	18			

* *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. 6. a: European corn borer larva in a potato stem in Katrime area; b: Stem rot / blackleg in ECB injured stem. The incidence is minor but widely present. Photos: Vikram Bisht (Manitoba Agriculture).

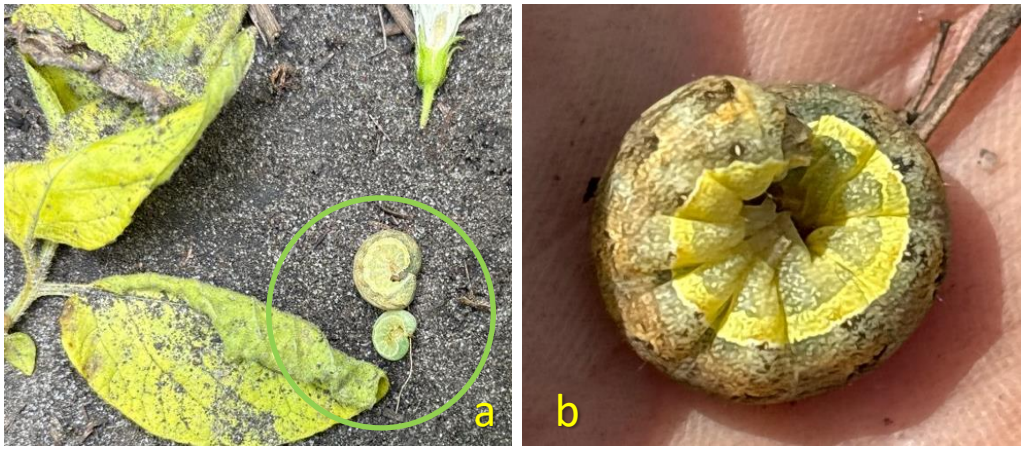

Fig. 7. Variegated cutworm on potato stems and foliage – could cause minor damage to leaves and some tuber feeding. Photo: Janelle Lavich (Choice Agri).

General

- Potato Field Day, August 7, organized by MCDC and MHPEC was well attended by growers, crop consultants, crop protection industry and members of the Canadian Potato Council. Congratulations to all the organizers.
- August 8: Cascade Colony farms demonstrated their efficient irrigation system to a group of growers.

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.

Manitoba