Issue 13 – Aug 10, 2023

Manitoba Potato Report

Weekly Provincial Summary

- The week (July31-Aug7) was hot like the previous week; with high temperatures ranging from 30 – 35.9°C in potato growing areas.
- Like last week, there was hardly any rainfall during this week in Manitoba, leading to dry soils, and affecting unirrigated crops.
- Crops are being regularly irrigated where needed and tuber bulking is progressing well. There is very low foliar diseases on potatoes, but Verticillium wilt is starting to show up as early dying.

Overview

- Temperature highs ranged from 30 to 35.9°C at various Manitoba weather stations.
- There was hardly any rain in the province, ranging from 0 to <5 mm in most of Manitoba, with a few sites getting 8-11 mm.
- No late blight spores were trapped at any of the 17 sites from the spore trap network. So far, the 7-Day late blight risk values (DSVs) are very low.
- Aphid monitoring suction trap catches are now showing very high Green peach aphid numbers in southern Manitoba. Potato aphids were trapped at all the seven sites. High numbers of these two aphid types could be a concern for PVY in seed potatoes.
- Fewer European corn borers (ECB) were trapped last week, and ECB stem injury is still being reported. This is the last week for Delta traps for ECB monitoring for the season.
- 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 scant rains in the province from July 31-Aug 7, ranging mostly from 0 to <5 mm in most of Manitoba, except a few sites including Portage la Prairie which got 11.8 mm and Austin and Carman got 8.2 mm (Table 1).
- These scant rains further brought down the % of normal precipitation at many sites in Manitoba, ranging from lows of 25-30% to mostly less than 70% of normal; while only Shilo (110%) was above 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 the “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 of 2-4 days with rains at many locations in Manitoba.

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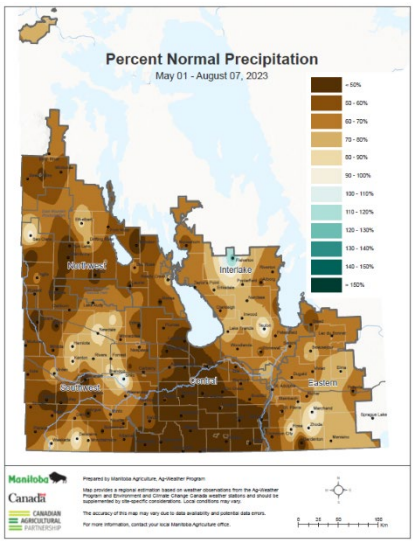

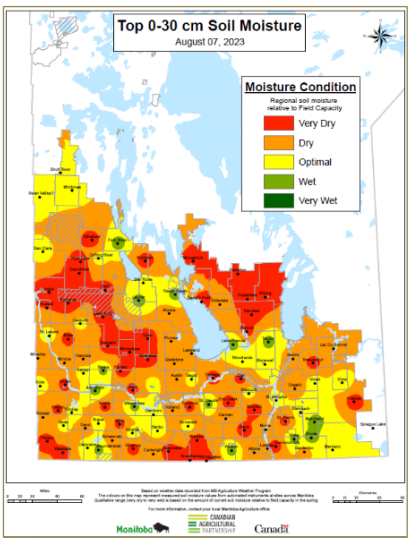

Fig.1.(far left) Rainfall (mm) in May to August 7 continues to be significantly below normal in much of the potato growing areas, except a few sites in western potato areas of Manitoba.

Fig. 2. Soil moisture (0-30 cm depth) by August 7 has become drier, and ranges from dry to mostly very dry in potato growing areas. Crop water demand for potatoes has increased.

Temperatures – Air & Soil

- The daytime temperatures during the week were quite hot in southern Manitoba, with Winkler reaching 35.9 °C; while most other stations recorded 30-33°C. This was similar to last week's temperature highs. The overnight minimums were 2-3°C warmer than last week's, ranging from 8.5 to 11.2°C (Table 1).
- The P-Days (Potato Days with base 7°C and 30°C max) has reached >515 in many potato areas (www.mbpotatoes.ca) by August 2. 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 – **July 31- Aug7** for selected potato growing areas.
' Crop Water Demand: cwd (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- Jul 30	2023 Rainfall (% of normal) from May 1 to July 30
Altona	32.1	10.1	0.8	-	68	-	30
Austin	30.0	10.4	8.2	38.4	116	221.7	54
Bagot	29.9	9.5	3.8	36.8	100	220.9	46
Carberry EC	32.9	8.5	3.4	35.3	111	182.5	51
Carman	32.8	10.0	8.3	34.8	107	200.4	49
Cypress River	33.4	9.9	1.8	-	104	-	43
Glenboro	32.5	9.5	2.8	35.5	**134**	195.4	60
Holland	33.3	9.6	1.3	44.9	124	239.1	51
Morden	32.0	13.0	3.3	-	56	-	25
Portage EC	30.8	11.2	11.8	40.2	97	253.7	45
Rivers	31.0	9.2	0	41.9	**149**	206.0	78
Shilo	32.7	9.6	3.0	43.3	**237**	219.0	110
St. Claude	30.4	10.5	5.7	36.6	101	224.3	45
Treherne	32.8	10.0	1.9	41.8	62	235.2	28
Wawanesa	32.8	8.5	0.5	32.8	**142**	198.7	66
Winkler	35.9	10.2	2.4	36.3	101	212.8	45

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Agronomics

- 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 Manitoba was not enough from May 1 to Aug 7 to meet the cumulative CWD in all stations, except Shilo. CWD this week was 30 to 43.3 mm and slightly higher than last week, and rainfall was not enough to meet this need.
- Supplemental irrigation is being applied in many more fields.
- Preventative fungicide applications continue against early blight and late blight.
- P-Days are currently around 515 and above in most potato growing areas *(P-Days (mbpotatoes.ca)*, which is suggesting rapid bulking phase. The day and night temperature differential is also good for bulking.
- A couple of events were held to demonstrate the impact of various herbicides on potato andalso the rotation crops– wheat, LibertyLink canola, RR-soybean and RR-corn (Fig. 3). Symptoms and crop losses were discussed.

Fig.3. Field map of the demonstration plot for herbicide injury – rows at the bottom are wheat, canola, soybean and corn. Photo: Vikram Bisht (MB Ag).

Crop Progress

- The plant stand and crop growth looks good across the province. In many fields, plants are settling down on the ground.
- Tuber bulking is progressing well with warm days and cool nights (Fig. 4). Some of the early planted fields are now being harvested for processing direct from field.
- Even late planted fields are now showing good tuber set numbers and good size profile.
- Some seed fields have been desiccated and other fields are 7-10 days away from top-killing; and would help avoid the high Green peach aphid and Potato aphid numbers.

Fig.4. Tubers are bulking well. a, b: Rangers and c: Dakota Russet. Photos courtesy: a, b: Orla Sheridan (Shilo Farms), c: Janelle Lavich (Choice Agri).

Disease & Insect Pests Monitoring

- Early blight continues to be reported from more fields and is being managed well. Interestingly I am not seeing much early blight in the Russet Burbank variety. Protective fungicide applications are continuing where needed. *Alternaria solani* (As) spores are being trapped by passive spore traps – although this is not very consistent – one week has high numbers and then the next week has low numbers.
- As many crops are settling down on the ground, the microclimate is now conducive to white mold and bacterial stem rotting (Fig. 5).
- Verticillium wilt, which is an endemic problem in many fields, is starting to show up as early dying (Fig. 6) in some fields.
- Aphid monitoring suction trap catches are now showing very high Green peach aphid (GPA) numbers; and much higher than I have ever seen in Manitoba. Potato aphids (PA) were trapped in all 7 sites sampled this week (Table 2). The combined total of GPAs and PAs are much higher than in 2022 at the same time. There is normally a spike in aphid numbers in mid to late August.
    - Both GPA and PA are efficient vectors of PVY. **Use of Aphid Oil and insecticide for aphids will be very important at this time.**

*Table 2. Weekly Aphid Report – Week 8 (**July 31-Aug7**)*

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	**66**	**11**	94	171	0	0	Lots of thrips
Field 2, K-16-6	**Carman**	Dufferin	Crop terminated						
Field 3, S-29-2	**Winkler**	Rhineland	**3**	**6**	44	51	0	0	Lots of thrips

Central Region

Field 4 J-9-6	**Swan Lake**	Victoria	0	**17**	133	150	0	0	Lots of thrips
Field 5 J-25-3	**Glenora**	Argyle	0	**2**	5	9	0	0	Not enough liquid from suction trap.
Field 6 M-32-13	**Westbourne**	Portage La Prairie	0	**1**	8	9	0	0	

Western Region

Field 7, A-12-14	**Wellwood**	North Cypress-Langford	0	3	50	53	0	0	No pan liquid. Lots of thrips
Field 8, SP	**Carberry**	North Cypress-Langford	0	3	11	14	0	1	Crop terminated Aug 8

* *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. 5. Rots in the under-canopy of plants settled on ground due to high moisture a: Botrytis b: bacterial rots and c: white mold. Photos: Vikram Bisht (MB Ag).

Fig. 6. Verticillium root and stem browning causing early dying. Photo courtesy: Janelle Lavich (Choice Agri).

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European Corn Borer monitoring has been going on since June 26. European corn borer damage to potato stems continues to be reported from western Manitoba (Fig. 7), but the incidences appear to be minor and the moths trapped in the Delta pheromone cards have drastically reduced (Table 3). This should be the end of ECB monitoring using Delta traps for the season. Western Manitoba has high trap counts as in previous years; Melbourne had the highest trap counts (2 years in a row).

Fig. 7. European Corn borer on potato stem: a, Wilting top indication of borer hole damage (Vikram Bisht, MB Ag); b: ECB larva inside potato stem (Amy Unger, MHPEC)

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

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

Late Blight Monitoring

- Late blight risk forecasting is provided on a regional basis on www.mbpotatoes.ca. Currently, the 7-Day Disease Risk values are very low indicating low risk for late blight disease. However, the cumulative DSVs from June 1 to Aug 10 show that a few potato station sites are near or above the critical value of 18 – Rivers, Glenboro, High Bluff and Carman.

- 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 being monitored.
    - **No late blight spores were detected in the samples processed in the 8th week of collection** (July 31-Aug 4, shorter collection time due to holiday Monday). (Table 4)
    - Early blight disease has been reported from many locations. PCR testing for early blight (*Alternaria solani*) spores was positive for some sites this week – there is inconsistency in numbers recorded from week to week.

Table 4: Phytophthora infestans spore trapping and PCR results Week 8 **(July 31-Aug 4).**

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	Negative	**Positive** (7630) ***Last week: Positive (530,000)***	Sample not recd
Field W22-Carberry N –SS F369/ 371	Negative	Negative ***Last week: Positive (759,000)***	
Field 31C – Carberry N – SS F465 /462	Negative	Negative ***Last week: Positive (241,000)***	
Carberry N – AU F319	Negative	Negative ***Last week: Positive (486,000)***	
Carberry South – MW F456	Negative	Negative	Sample not recd
Carberry North – MW F457	Negative	Negative ***Last week: Positive (72,300)***	Sample not recd
Brookdale – KJ F465	-	-	No sample
Cypress River – SG F194	Negative	**Positive** (19,000) ***Last week: Positive (341,000)***	
Melbourne – SG F192	Negative	**Positive** (72,600) ***Last week: Negative***	Early blight seen
Treherne – JG F461	Negative	**No sample**	
Portage – HB F464	Negative	Negative	
McDonald / Portage - SG/KPPA F459	Negative	Negative	
Bagot – DM-Delta F463	Negative	Negative ***Last week: Positive (59,500)***	Early blight in area
Carman – VB/AB	Negative	Negative	
Winkler /TSC July 17 – 20	Negative	Negative ***Last week: Positive (1 million)***	Early blight in area

- In the coming 7 days, there is rain forecasted for 2-4 days at some locations, and with warm soils the conditions could be favourable for pink rot and Pythium leak. 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