Issue 10 – July 20, 2023

Manitoba Potato Report

Weekly Provincial Summary

- This week was cooler than last week, with high temperatures ranging from 25 – 27^{0}C. There were scant rains during the week in the province.
- Crops are being regularly irrigated where needed and tuberizing well.

Overview

- With warm days and cool night temperatures, the tuberization is in full swing.
- Temperatures peaked at nearly 25-27^{O}C in most Manitoba stations.
- There were sparse rains in the province, and ranged from 0.2 to 7 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 has been reported in Ontario.
- A few European corn borers were trapped last week, and ECB stem injury is being reported. Still very low levels of aphids are being trapped in seed potato fields.
- 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 10-16, ranging from 0.2 mm in Carberry to 7 mm in Portage (Table 1). There wasn't enough precipitation to soak into the soil.
- These scant rains further brought down the % of normal precipitation at many sites in Manitoba. Most of these selected potato sites had 22% to 60% of normal; while only Rivers (94%) and Shilo (133%) are close to normal (Table 1, Fig. 1). *http://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf* .
- Lack of rains have 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 cooler temperatures but very little rainfall in the coming few days.

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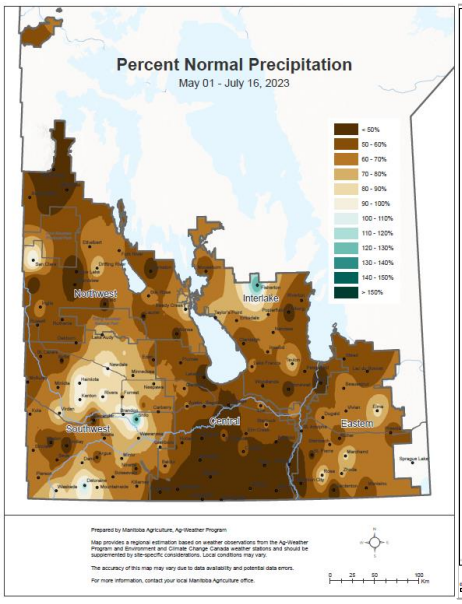
Manitoba



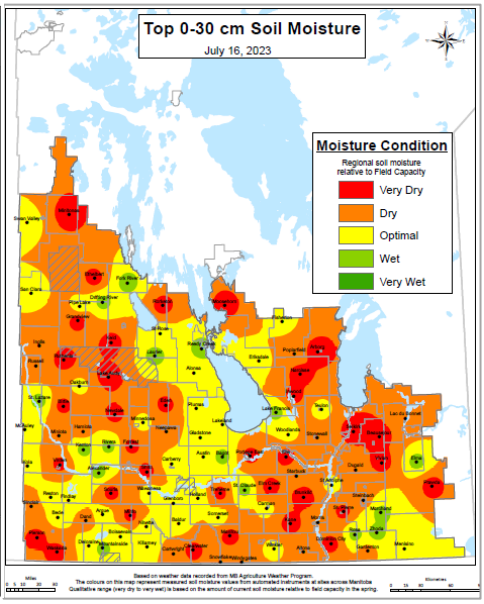


Fig.1(far left) Rainfall (mm) in May to July 16 continues to be below normal in much of the potato growing areas, except a few sites in western Manitoba.

Fig. 2 Soil moisture (0-30 cm depth) by mid-July has become generally drier, 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 ºC cooler than last week. For the Manitoba potato growing areas the daytime (max) temperatures ranged from 25 to 27ºC. The overnight minimum temperatures ranged from 2 to 9ºC (Table 1).
- The P-Days (Potato Days with base 7ºC) has reached >355 in many potato areas (www.mbpotatoes.ca) by July 12. 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 10 to July 16** for selected potato growing areas.

Region	Max Temp (ºC)	Min Temp (ºC)	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	26.9	6.6	1.1	-	41	-	22
Austin	26.1	6.9	2.0	25.8	103	128.2	60
Bagot	26.4	6.3	5.8	26.3	96	131.9	56
Carberry EC	25.4	4.2	0.2	19.3	**108**	101.8	62
Carman	26.6	8.8	1.5	21.2	94	115.0	54
Cypress River	26.3	3.9	2.0	-	99	-	49
Glenboro	25.0	3.1	2.5	19.9	**129**	107.6	71
Holland	25.7	5.0	3.4	24.9	119	132.4	59
Morden	27.3	8.3	1.2	-	47	-	25
Portage EC	26.3	8.9	6.9	29.7	78	146.3	46
Rivers	23.6	3.5	1.5	22.6	**145**	111.7	94
Shilo	25.1	5.1	3.6	23.1	**232**	117.4	**133**
St. Claude	26.0	7.5	1.2	25.2	93	128.0	51
Treherne	25.7	5.2	3.0	25.5	56	132.5	30
Wawanesa	26.1	2.0	3.7	22.6	**131**	109.4	75
Winkler	25.9	7.4	4.1	24.7	94	122.2	50

' Crop Water Demand: cwd (mbpotatoes.ca)*

Agronomics

- In this week, July 10-16 – there have been scattered rains across Manitoba. Herbicide applications are complete. Fungicide applications continue.
- 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 16 to meet the CWD in Rivers, Shilo, Carberry, Wawanesa and Glenboro.
- Supplemental irrigation and fertigation is being performed in many more fields.

Crop Progress

- The plant stand and crop growth looks good across the province.
- Tuber formation is at different stages – from yet to produce initials to >4" size. This is the time to maintain good soil moisture to maintain high yield potential.
- Early planted fields are now showing tuber set numbers and good size for this time of the season (Fig. 3).
- Many fields have full canopy cover, and the within canopy microclimate allows the *Botrytis spp.*to infect and sporulate on lower leaves touching the wet/moist soils. Less frequent irrigation by higher volume could be better than frequent and low volume irrigation in keeping the microclimate drier.

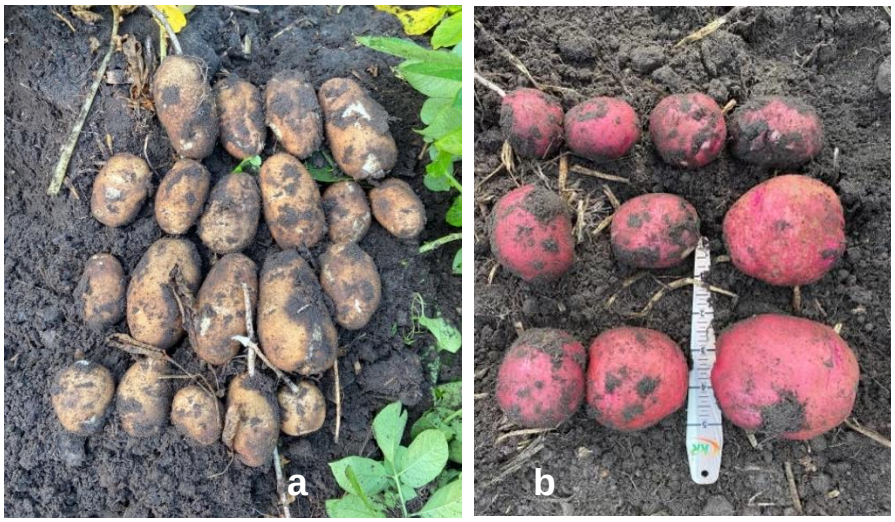


Fig. 3 Good sizing in early planted fields of Russet Burbank and Norland. Photos: a) Janelle Lavich (Choice Agri); b) Harrison Loewen (KR Crop Check)

Disease & Insect Pests Monitoring

- Early blight continues to be reported from more fields and it is important to monitor the susceptible varieties – normally early maturing types. Protective fungicide applications are continuing where needed. *Alternaria solani* spores are being trapped by passive spore traps.
- Minor incidences of blackleg disease continue to show up as wilting plants (Fig. 4).
- Normally, around 300 P-day value (potato heat units) protective fungicides for early blight control are recommended. It is currently around 360 P-day value in most potato growing areas (P-Days (www.mbpotatoes.ca). With increasing early blight on Rangers and possibly some early varieties, and the between-row canopy closure expected soon, it is time to have some fungicide coverage in the lower canopy.

- Aster Leafhopper (ALH) and purple top symptoms with narrow leaves have been reported. Similar symptoms may sometimes be caused by Rhizoctonia stem & root infections. (*Fig. 5)*.
- Potato leafhoppers (PLH) have started being trapped on potato, even though they were being reported on other crops much earlier. PLH causes hopper leaf burn.
- Minor incidence of cutworm damage to potato was reported (Fig 6)
- Aphid monitoring suction trap catches still show low populations; and no green peach aphids, but potato aphids (efficient vectors of PVY) are showing up in many sites (Table 2).
- European corn borer damage to potato stems has started and is being reported (Fig. 7) from western Manitoba, but the incidences appear to be minor. Western Manitoba has high trap numbers (Table 4). As in previous years, Melbourne has the highest trap counts (2 years in a row). Often the direct injury to potato crop from ECB is minor but it provides entry points to the stem for stem rot bacteria especially when the crop canopy lays flat on the ground and there is very little air circulation under the canopy.

Fig. 4 Blackleg in Ranger Russet potato. Photo: Kurtis McKee (JP Wiebe farms)

Fig. 5 Purple top of potatoes could be due to Aster leafhoppers phytoplasma or sometimes due to Rhizoctonia infections. Photo: Janelle Lavich (Choice Agri)

Fig. 6 Cutworm in potato. Photo: Kurtis McKee (JP Wiebe farms)

Table. 2. Weekly Aphid Report – Week 3 (July 10-17) 2023

Field #	Town	RM	Green Peach Aphid	Potato Aphid	Other Aphids	Total *	ALH	PLH	Comments
Southern Region									
Field 1, H-20-2	**Winker**	Stanley	0	6	10	16	0	0	No aphids in suction trap
Field 2, K-16-6	**Carman**	Dufferin	0			**0**	0	0	
Field 3, S-29-2	**Winkler**	Rhineland	0	3	6	9	1	0	Some thrips
Central Region									
Field 4 J-9-6	**Swan Lake**	Victoria	0	0	0	0	0	0	Suction trap wiring broken
Field 5 J-25-3	**Glenora**	Argyle	0	0	0	0	0	0	High thrip #s. Little glycol in pans
Field 6 M-32-13	**Westbourne**	Portage La Prairie	0	2	3	**5**	0	7	Suction trap glycol low
Western Region									
Field 7, A-12-14	**Wellwood**	North Cypress-Langford	0	0	0	0	0	0	Lots of thrips
Field 8, SP	**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.

ECB monitoring has been going on for 2 to 3 weeks, and now the stem borers are being reported. Due to unusual weather the ECB adult moths started showing up in late June and are still being found (Table 3).

Fig. 7 ECB larva in potato stem. Photo: Janelle Lavich (Choice Agri)

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

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

Late Blight Monitoring

Information

- Late blight risk forecasting is provided on a regional basis. Please refer to the risk maps on www.mbpotatoes.ca. Currently, due to warm and dry conditions, the 7-Day Disease Risk values are very low (Fig. 8). However, the cumulative DSVs from June 1 to mid-July show that only Glenboro comes close to the critical value of 18.
- 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 5th week of collection (July 10-16). (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.

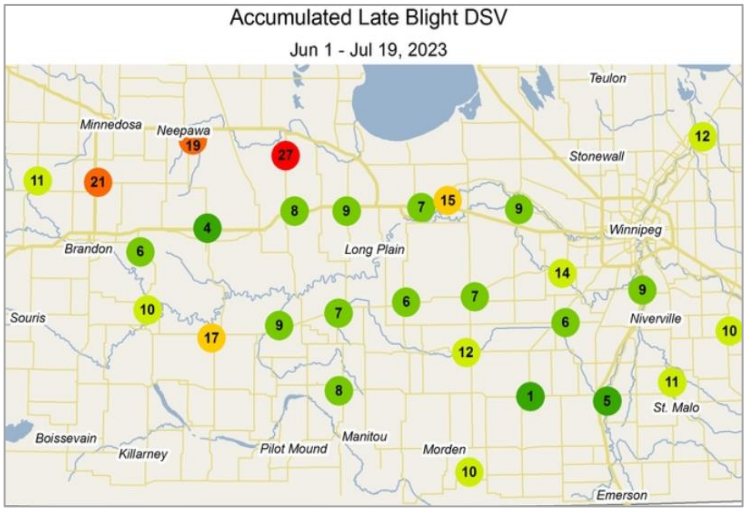


Fig. 8. The cumulative DSVs from June 1 to July 19 are still below 18 in all potato growing areas in Manitoba. The 7-Day DSVs indicated very low risk of late blight by July 19, except Glenboro at 17.

Fifth week's (July 10-17) 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 5 (July 10-17).**

Spore Trap Locations	**Pi spores**	**Early blight (spore #s)**	**Comments**
Shilo – OS	Negative	Negative	Early blight seen
Wawanesa –SG LF12	Negative	Positive (22)	Early blight seen
Douglas – MW F362	Negative	Positive (303)	Early blight seen
Field W22-Carberry N –SS F369	Negative	Positive (596)	
Field 31C – Carberry N – SS F465	Negative	Positive (24)	
Carberry N – AU F319	Negative	Positive (3970)	
Carberry South – MW F456	Negative	Positive (68)	
Carberry North – MW F457	Negative	Positive (?)	
Brookdale – KJ F465	Negative	Negative	
Cypress River – SG F194	Negative	Negative	
Melbourne – SG F192	Negative	Negative	Early blight seen
Treherne – JG	Negative	Negative	
Portage – HB F464	Negative	Negative	
McDonald / Portage - SG/KPPA F459	Negative	Negative	
Bagot – DM-Delta F463	Negative	Negative	
Carman – VB/AB	Negative	Negative	
Winkler /TSC	Negative	Positive (3440)	Early blight in area

Late blight has been reported from Ontario last week (Eugenia Banks).

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