Issue 20 – September 20, 2024

Manitoba Potato Report

Seasonal Reports Weekly Weather Maps Potato Production

Provincial Summary

- Thunderstorms from Sep 16 to 19 brought significant amount of rainfall across the province, but lot more in the southeast and eastern parts of the province. The cumulative precipitation from May 1 to September 15 is still above the 30-year normal, ranging from 103 to 156% of normal in the potato growing areas. Top 0-30 cm soil became generally drier across the province before the rainfall. Supplemental irrigation was needed.
- P-Days range from 830-900 in agro-Manitoba and the crops are in maturation phase.
- Harvest in the province is estimated to be about 15-20% complete, and ranges from yet to start to over 50% of the crop for some farms.
- Harvesting was delayed this week in eastern potato regions due to significant amount of rainfall. Last week high temperatures had interrupted harvesting in most of the province.
- There is no report of late blight in Manitoba.
- "Potato early dying", caused by Verticillium wilt and black dot, is being reported from more fields.
- Regular weekly reports are 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

- For the week of Sept. 9 to 15, there was not much rainfall in most potato growing areas of the province (*Table1*), and ranged from 0 or near 0 in Shilo, Carberry and Glenbo to 18.8 mm (Carman). *Province of Manitoba | agriculture - Weather Conditions and Reports (gov.mb.ca).*
- The cumulative rains from May 1 to Sept.15 are still above the 30-year normal, ranging from near 100% (Glenboro, Holland) to 156% (Winkler) at the selected sites (*Table 1*). *https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-precipitation.pdf*
- Lack of significant amounts of rain in many areas has led to drier top 30 cm zone compared to the previous week (Fig.1) soil-moisture-30cm.pdf (gov.mb.ca). The 0 to 120 cm zone ranges from optimal to wet in potato growing areas, as displayed on the soil-moisture-120cm.pdf (gov.mb.ca) map.
- There has been significant rainfall and thunderstorms across Manitoba in the last few days on Sep.16 to 19, though not included in the week's weather data (Fig. 2)
    - These thunderstorm were particularly severe in Winkler area (Fig. 3, 4) with rainfall of 133.5 mm on Sep.16 and 17.

Report compiled by Dr. Vikram Bisht
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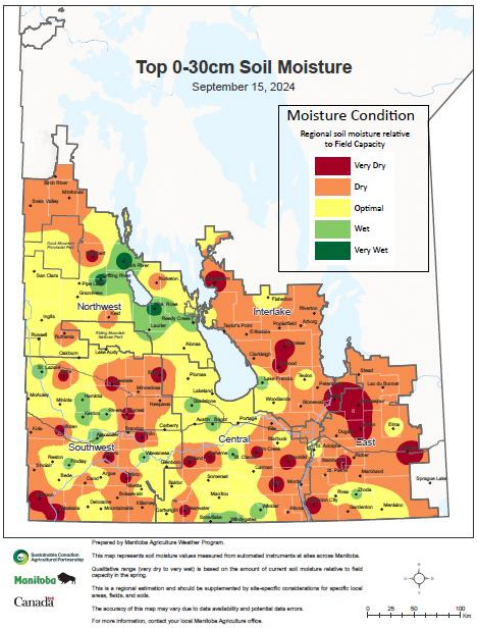

Fig. 1. By September 15, due to lack of substantial rains in the previous three week, the soil moisture (relative to field capacity) in 0-30 cm zone has become drier compared to last week. The potato areas are mostly optimal to dry at the 0-30 cm zone. Supplemental irrigation was needed in most potato fields.

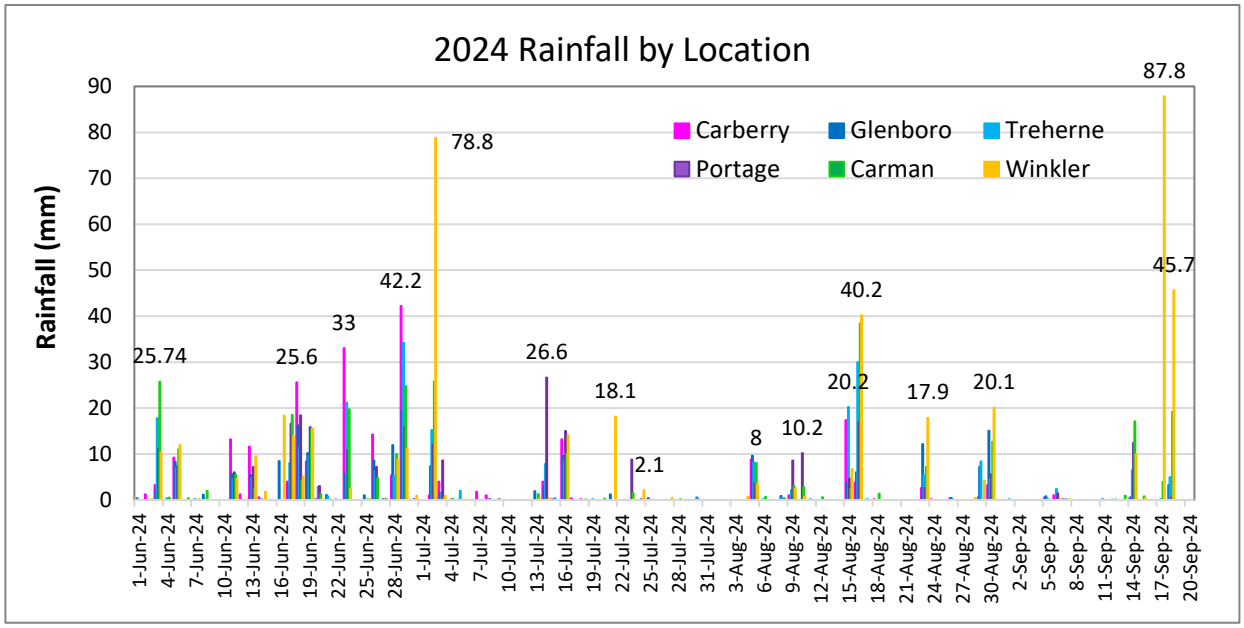

Fig. 2. There was heavy rainfall in the south east potato growing areas of the province, especially Winkler area.

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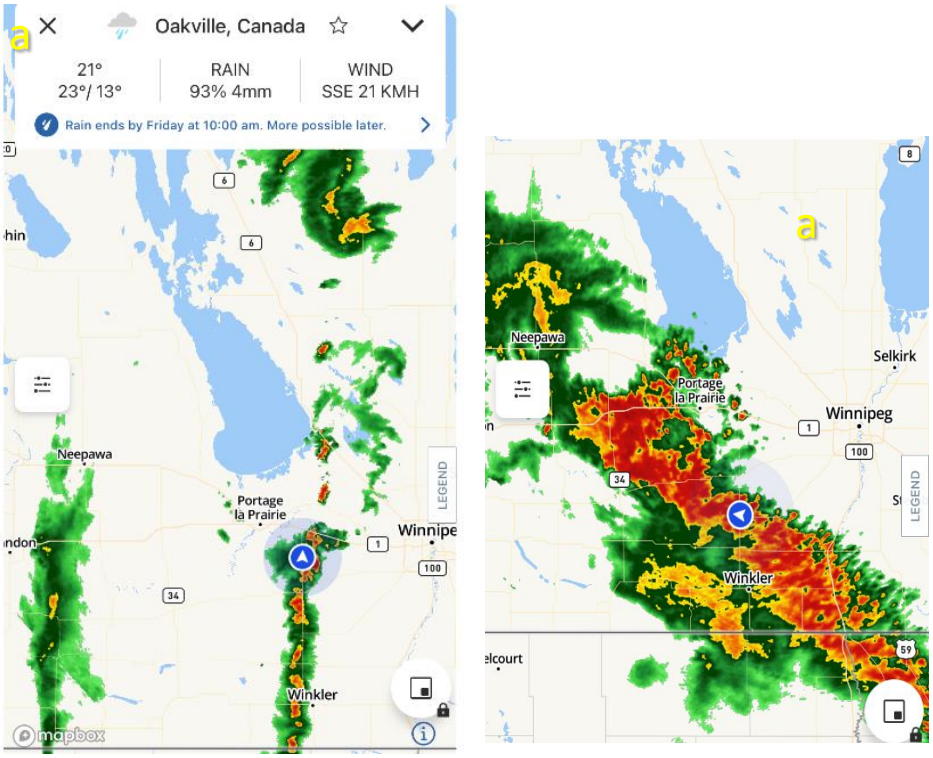

Fig. 3. A few thunderstorms passing through south-east Manitoba brought significant amount of rainfall in 2-3 days. Heavy storms passed through Winkler on Sep.13 and again on the 16th and 17th. Screen shots on the Sep.13 (left) and 16th (right) from Storm Radar (the weather channel). Vikram Bisht (Manitoba Agriculture).

Fig. 4. Thunderstorms caused flooding in a few fields, including potato fields. Photos a, b: Scott Graham (Simplot), c: Vikram Bisht (Manitoba Agriculture).

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Temperatures – Air and Soil

- Daytime high temperatures from Sept. 9 to 15 were similar to the previous week, ranging from 29.5 ^{O}C (Austin) to 34.3 ^{O}C (Winkler). Most sites had 30+ ^{O}C temperatures.
- Overnight lows were generally around 2 to 3 ^{O}C warmer than last week, and ranged from 5.9 ^{O}C (Glenboro) to 11.0 ^{O}C (Winkler) (*Table 1*).
- Total accumulated heat units for potato growth, P-Days (Potato Physiological days) from June 1 (50% potato emergence) to Sept.15 ranged from 830 to 900 in the potato growing areas.(*P-Days (mbpotatoes.ca)*; *https://www.gov.mb.ca/agriculture/weather/pubs/percent-normal-p-day.pdf.* This range indicates that all potato crops are in maturation stage.
- Soils are still warm at around 17-19 ^{O}C. Warm soils with high moisture have high risk of tuber rotting.

Weather Data Summary for Selected Potato Site Stations

- The "potato crop water demand" (CWD) for the week was much higher than last week, and was not covered by the rainfall received in all potato sites (Table 1). CWD for the week ranged from 26.4 to 41.5 mm in the selected potato sites. All areas needed supplemental irrigation.
- According to the Environment and Climate Change Canada (ECCC) current weather forecast, some precipitation was possible for Sept. 20 and 21 at a few potato sites and then no rain till Sep. 24. Forecast for air temperature highs are projected to be around mid to low 20s ^{O}C up to Sept. 24; and overnight lows from 3 to 12 ^{O}C. Manitoba - Weather Conditions and Forecast by Locations - Environment Canada.

Table 1. Manitoba Ag Weather Data – ***September 9 – 15***

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
Altona	29.7	10.5	3.6	NA	368	118
Austin	30.8	8.6	1.1	40.3	371	124
Bagot	29.5	7.9	7.9	32.0	386	129
Carberry EC	30.7	7.1	0	32.0	342	117
Carman	30.5	8.8	18.8	26.4	410	136
Cypress River*						
Glenboro	30.0	5.9	0.7	32.4	303	103
Holland	30.6	6.0	1.2	41.5	347	107
Morden*						
Portage EC	30.3	8.6	13.2	38.4	356	119
Rivers	30.8	7.5	10.9	32.8	310	121
Shilo	30.4	6.3	0.2	38.4	367	125
St. Claude	30.5	9.7	14.1	32.2	372	125
Treherne	30.7	6.1	6.6	33.5	370	124
Wawanesa	30.2	6.3	2.6	30.3	336	115
Winkler	34.1	11.0	10.1	29.2	482	156

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

*** Data was unavailable.** **NA – Crop water demand data not available.**

Crop Progress

- All potato crops are in maturation stage.
    - Most Ranger Russets are turning colour and are being harvested for "direct to processing". Other varieties are also being harvested. Yields are average to better than average.
- Many Russet Burbank crops are showing early dying at various levels of severity.

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- Tubers per hill appear higher and the size is smaller than last year.
- Some crops that are short of nitrogen and/or moisture are showing higher levels of early dying.
- Supplimentary irrigation is still needed for all potato since crop water demand was not covered by the rains in the week.
- After delay due to high temperatures last week, this week had a few rain related delays in some areas.
    - Tuber pulp temperatures at harvest is now been reported to be around 60 -63 ^{O}F (15.5 to 17 ^{O}C) in irrigated fields. Warm tubers in storage could lead to storability issues.
- Harvest for “direct from field” to processing plant is also continuing.

Disease Monitoring

- The Alternaria leaf-spot (ALS) diseases are present in all potato growing areas of the province and at this stage may be accelerating crop senescence.
- Potato early dying (PED) caused by verticillium wilt and black dot diseases is now more severe with crop maturity. Nitrogen deficit has increased the crop stress observed in many fields.(Fig. 5).
- Powdery scab on roots continue to be reported from more fields.
- Due to warm conditions at harvest, early breakdown of tubers have been reported, mainly due to Pectobacterium and Clostridium bacterial soft rot. Rot by Clostridium sp. is very smelly and produces stringy mucilage, and forms strands when pulled (Fig. 6). Warm and wet conditions favour both rots.
- Recent heavy rainfall in some areas, has increased the risk of tuber rot in wet fields.

Fig. 5. Potato Early Dying (PED) is now ranging from nice green tops to more severe in high stress areas especially in high spots or sand ridges in fields. Photos: a,b: Vikram Bisht (Manitoba Agriculture), c: Kurtis McKee (JPW Farms).

Fig 6.. Potato soft rot caused by Pectobacterium sp. (left) and Clostridium sp (right), which produces stringy mucilage. Photo: Vikram Bisht (Manitoba Agriculture).

Late Blight Monitoring

Montitoring and Forecasting

- Currently, for **Late blight Disease** Severity Values (DSVs), the cumulative 7-Day DSV numbers on Sept. 18, suggest low to moderate risk of late blight at various potato growing areas of Manitoba, if the inoculum is present**.**
- No late blight reported in the province, and no late blight spores were trapped duing the season.
- Late blight risk maps, P-Days, and SprayCast maps are available at http://www.mbpotatoes.ca/index.cfm.
- No new reports from Michigan, Wisconsin, Minnesota or Ontario.

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.