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### Current late blight risk in Ontario field tomatoes: August 21, 2019

Amanda Tracey, Vegetable Crops Specialist, OMAFRA, Ridgetown and Cheryl Trueman, Department of Plant Agriculture, Ridgetown Campus – University of Guelph



As mentioned in a previous post(<u>https://onvegetables.com/2019/06/20/current-late-blight-risk-in-ontario-field-tomatoes-june-20-2019/</u>), this is Year 1 of a three-year research project to assess the value of different spore traps and forecasting models to predict late blight risk for field tomatoes. We are comparing the Spornado and rotorod spore traps at eight sites in Kent County (Fig. 1), along with the BliteCast forecasting model. DNA of *Phytophthora infestans*, the

organism that causes late blight, was detected by **Spornado** traps at 0 of 8 sites for August 12-15 sampling period 4 of 8 sites for the August 15-19 sampling period (Table 1).

**Rotorod** traps detected spores of *P. infestans* at 3 of 8 sites for the August 12-15 sampling period and 3 of 8 sites for the August 15-19 sampling period (Table 1).

Table 1. Number of sites out of eight (8) in Kent County, with a positive detection for Phythophthora infestans, the organism that causes late blight.

\* first sampling period with a positive detection for late blight.

Sampling Period	Spornado	Rotorod
July 15-18 *	1	0
July 18-22	4	0
July 22-25	0	1
July 25-29	7	0
July 29-August 1	2	2
August 1-5	2	1
August 5-8	0	5
August 8-12	3	1
August 12-15	0	3
August 15-19	4	3



Ministry of Agriculture, Food and Rural Affairs

### Current late blight risk in Ontario field tomatoes: August 21, 2019...con't

Late blight symptoms caused by the US-23 genotype have been observed in New York, Pennsylvania and Wisconsin on tomato and/or potato. However, there are no reports of symptoms on any crops in Ontario or Michigan.

A summary of fungicides for late blight management is available here(<u>https://onvegetables.com/2017/07/26/late</u>-blight-alert-july-28th-2017/).

If you suspect late blight in your tomato crop, please reach out to Amanda Tracey (<u>Amanda.tracey@ontario.ca</u>, 519-350-7134) to confirm the diagnosis. Cheryl is away on parental leave and will not be available for the remainder of the growing season.

*Project collaborators*: Tomecek Agronomic Services, Sporometrics, Phytodata, and Genevieve Marchand (AAFC).

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Links to previous late blight posts from the 2019 season:

- June 20(<u>https://onvegetables.com/2019/06/20/current-late-blight-risk-in-ontario-field-tomatoes-june-20-2019/</u>)
- July 10(<u>https://onvegetables.com/2019/07/11/current-late-blight-risk-in-ontario-field-tomatoes-july-10-2019/</u>)
- July 20(<u>https://onvegetables.com/2019/07/20/current-late-blight-risk-in-ontario-field-tomatoes-july-20-2019/</u>)
- August 7(<u>https://onvegetables.com/2019/08/07/current-late-blight-risk-in-ontario-field-tomatoes-august-7-2019/</u>)
- August 14(<u>https://onvegetables.com/2019/08/14/current-late-blight-risk-in-ontario-field-tomatoes-august-14</u> -2019/)

### VCR – Vegetable Crop Report – August 22, 2019

The VCR (vegetable crop report) is a weekly update which includes crop updates, weather and growing degree summaries for various vegetable growing regions across Ontario.

Temperature - Humid and wet conditions in most growing regions earlier this week were conducive for the

spread of some plant pathogens. The Durham, Huron, Peterborough, Simcoe, and Sudbury growing regions are still tracking marginally to significantly behind their average degree day accumulation; while the Chatham, Essex, Kemptville, Norfolk and Wellington growing regions have all caught up to their average degree day accumulations.

**Rainfall** – Precipitation in most areas varied from a quarter inch to more than two inches depending on the growing region in the past week. Norfolk County has already exceeded it's average rainfall, while Durham, Peterborough, and Wellington are all past the three quarter mark of their average rainfall totals. Remaining growing regions range from under a quarter to the halfway point of their respective rainfall averages.



#### **Crop Updates**

**Brassica Crops** –Alternaria can cause head rot in broccoli and cauliflower if spores are able to infect the beads/ curds and secondary bacteria can cause rot. Calcium deficiency causing tip burning has been observed in a few fields. Continue to scout for Alternaria, black rot and fusarium wilt.

**Carrot –** Harvest is underway for some earlier planted fields. The second generation of Carrot Rust Fly is now active in all growing regions with exception to Chatham-Kent, Essex, Kemptville, and Norfolk. Be on the lookout for white mould between row as canopies are not closed. Continue to monitor for aster yellows, as well as leaf blights which will appear on the oldest leaves at the bottom of the canopy.

**Celery** – Celery leaf curl has been the predominate pathogen observed. Avoid walking through the fields when the humidity is high and the leaves are wet as celery leaf curl spores will stick to clothes and equipment. Scout for aphids, bacterial blights and leaf diseases

**Garlic** – When choosing a field for the 2019-2020 field season, avoid a field that has been planted in garlic, leeks or onions in the last 3 years. There will be another full day workshop in Guelph on December 4th that will cover every part of garlic production including clean seed, cultivar selection, seeding density, nutrient testing, scape removal, weed control, crop insurance, harvesting, grading, storing as well as scouting/pest management. To register, call the Agriculture Information Contact Centre at 1 877-424-1300.

**Onions** – The pressure of thrips has reached threshold in several regions but the general pressure this season is still low. Stemphylium leaf blight and tipburn is starting to take hold. Early transplants have been harvested in some regions and direct seeded onions are close to lodging in others.

**Potatoes** – Early planted fields are being harvested with most fields in or past bloom and are currently bulking. Tuber bulking is a critical time for irrigation and soil moisture. Refer to the chart below for yield impacts on dry weather conditions. Remain vigilant in scouting as some varieties begin to senesce. Remember to keep late blight specific fungicides in your spray rotation. Late Blight has been confirmed in New York State on Potatoes. The isolate has been identified as US-23 which is sensitive to Ridomil. If you suspect late blight in your field, please contact Dennis at dennis.vandyk@ontario.ca, (519) 766-5337.

Growth Stage	Soil Available Water Requirement	Yield Losses IF Available Water Below Required Levels			
Growth Stage I Sprout Develop- ment	75% available soil water	Short periods of drought stress do no reduce yields			
Growth Stage II Vegetative Growth	75% available soil water	5%			
Growth Stage III Tuber Initiation	80% available soil water	10%			
Growth Stage III Tuber Initiation	80% available soil water	10%			
Growth Stage IV Tuber Bulking	90% available soil water	40-60% <b>Highest demand for water.</b> Adequate water is necessary for high yield. Dry conditions favour tuber malformations			
Growth Stage V Tuber Maturation	60-65% available soil water	Water deficit causes tuber dehydration			

#### Pest Degree Day Forecasting

Pest	Carrot Rust Fly	Onion Maggot	Carrot Weevil	Aster Leafhopper	Tarnished Plant Bug	Cabbage Maggot	Seedcorn Maggot	European Corn Borer
THRESHOLD	329-395, 1399-1711	210-700, 1025-1515	138-156, 455+	128+	40+	314-398, 847-960, 1446-1604	200-350, 600-750, 1000-1150	See legend below
Essex*	1429	1309	976	777	477	1080	1309	685
Chatham-Kent*	1897	1748	1338	1087	721	1470	1748	971
Norfolk**	1832	1689	1290	1047	686	1419	1689	935
Huron***	1595	1460	1084	858	528	1203	1460	753
Wellington**	1605	1473	1099	877	552	1218	1473	776
Simcoe County***	1618	1483	1110	888	564	1228	1483	787
Durham***	1698	1563	1190	970	636	1308	1563	866
Peterborough	1545	1409	1032	804	484	1153	1409	703
Kemptville***	1742	1606	1228	995	644	1350	1606	883
Sudbury***	1429	1309	976	777	477	1080	1309	685

\*- Bivoltine region for ECB. First Peak Catch: 300-350 DD, Second Peak Catch 1050-1100 DD

\*\*- Overlap region for ECB. First Peak Catch : 300-350 DD Second Peak Catch 650-700 DD, Third Peak Catch 1050-1100 DD \*\*\*-Univoltine region for ECB. Peak Catch 650-700 DD

#### Use these thresholds as a guide, always confirm insect activity with actual field scouting and trap counts. Select a region below for the latest weather, crop and pest degree day information:

Essex County(https://onvegetables.com/2019/08/22/vcr-15/#essex) Chatham-Kent County(https://onvegetables.com/2019/08/22/vcr-15/#chatham-kent) Norfolk County(https://onvegetables.com/2019/08/22/vcr-15/#norfolk) Huron County(https://onvegetables.com/2019/08/22/vcr-15/#huron) Wellington County(https://onvegetables.com/2019/08/22/vcr-15/#wellington) Simcoe County(https://onvegetables.com/2019/08/22/vcr-15/#simcoe) Durham County(https://onvegetables.com/2019/08/22/vcr-15/#durham) Peterborough(https://onvegetables.com/2019/08/22/vcr-15/#durham) Peterborough(https://onvegetables.com/2019/08/22/vcr-15/#kemptville) Kemptville(https://onvegetables.com/2019/08/22/vcr-15/#kemptville) Sudbury(https://onvegetables.com/2019/08/22/vcr-15/#sudbury)

0

March

April

#### **Essex County**



Essex Total Precipitation per Month

May

■ 2019 ■ 10 year average

June





Chatham-Kent Total Precipitation per Month

July

August



#### Norfolk County



Norfolk Total Precipitation per Month



140

120

100

80

60

40

20

0

March

April

Precipitation (mm)

#### **Huron County**



#### Wellington County



### Simcoe County



Simcoe County Total Precipitation per

May

■2019 ■10 year average

June

July

August



Wellington County Total Precipitation per Month





140

120

100

80

60

40

20

0

March

April

Precipitation (mm)

#### **Durham County**



#### Peterborough



# Peterborough Total Precipitation per Month

May

■ 2019 ■ 10 year Average

June

July

August

**Durham Total Precipitation per Month** 



#### Kemptville



Kemptville Total Precipitation per Month



#### Sudbury

