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Current late blight risk in Ontario field tomatoes: August 14, 2019

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As mentioned in a previous post (https:// onvegetables.com/2019/06/20/ current-late-blight-risk-in-ontario-fieldtomatoes-june-20-2019/), 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 1 of 8 sites for the July 15-18 sampling period, 4 of 8 sites for the July 18-22 sampling period, 7 of 8 sites for the July 25-29 sampling period, 2 of 8 sites for the July 29-August 1 sampling period, 2 of 8 sites for the August 1-5 sampling period and 3 of 8 sites for the August 8-12 sampling period. Rotorod traps detected spores of *P. infestans* at 1 of 8 sites for the July 22-25 sampling period, 2 of 8 sites for the July 29-August 1 sampling period, 1 of 8 sites for the August 1-5 sampling period, 2 of 8 sites for the July 29-August 1 sampling period, 1 of 8 sites for the August 1-5 sampling period and 5 of 8 sites for the August 5-8 sampling period.

Late blight symptoms caused by the US-23 genotype have been observed in New York and Wisconsin on potato. More recently, there has been a report of late blight in Pennsylvania on tomato, but 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-blight-alert-july-28th-2017/</u>).



Current late blight risk in Ontario field tomatoes: August 14, 2019...con't

If you suspect late blight in your tomato crop, please reach out to Amanda Tracey (Amanda.tracey@ontario.ca,

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).

Funding acknowledgement: Ontario Tomato Research Institute, Fresh Vegetable Growers of Ontario, and the Ontario Agri-Food Innovation Alliance.

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(https://onvegetables.com/2019/07/11/current-late-blight-risk-in-ontario-field-tomatoes-july-10-2019/),
- 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>).

VCR – Vegetable Crop Report – August 14, 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 – Most regions had somewhat cooler weather within the last week although degree day progression was not seriously impacted in most areas. Most regions are still behind the average degree day accumulation for this point in the year with exception to the Chatham-Kent, Essex, Kemptville, Norfolk, and Wellington areas. Harvest of early-mid season crops continues to be underway and are now making their way to fresh market.

Rainfall – Precipitation totals were generally fairly low across most growing regions again this week with exception to those between central and Eastern Ontario on August 8. Regions range from about the half way

point of their respective 10-year average for rainfall, to well below their 10-year rainfall average and approaching near drought conditions.

Crop Updates

Brassica Crops – Weather has been conducive for bacterial pathogens such as black rot. Alternaria has been causing damage to broccoli and cauliflower heads and with prolonged periods of high humidity, head rot has been developing. Calcium deficiency causing tip burning has been observed in a few fields.

Carrot – The second generation of Carrot Rust Fly is now active in all growing regions with exception to Essex, Chatham-Kent, where the upper limit of the degree day threshold has now been exceeded and Sudbury, where threshold has not yet been met. Keep an eye out for aster yellows when scouting as trap counts of aster leafhoppers continue to be elevated. Also continue to monitor for leaf blights which will appear on the oldest leaves at the bottom of the canopy.

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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 bacterial blight as well as celery late blight / Septoria.

Garlic – Garlic curing works best in an area that has good ventilation, low relative humidity and that is not in full sun. Curing is complete when the cloves are pulled apart and base of the stem close to the basal plate is dry, the center of the cut stem is hard and the neck is constricted at the bulb. Curing quickly (within a week) will reduce the likelihood of survival for garlic mites. Once cured, table stock can be kept at a temperature 0.5°C at a relative humidity of 50-70% and planting stock can be kept at 10°C (up to 18°C) at a relative humidity of 55-65%. To learn more about garlic production, we are offering a 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 contact centre at 1 877-424-1300.

Onions – Stemphylium leaf blight and bacterial rot is continuing to develop. The pressure of thrips is starting to build in some areas but counts are still very low. Count the number of thrips by pulling leaves apart and counting the grey adults or small yellow nymphs. The spray threshold for onion thrips is 1 thrips/leaf from an average of 50 plants. For example, if 325 thrips are counted on 50 plants at the 8th leaf stage, the average level of thrips would be 325/50/8 = 0.8 thrips/leaf. Keep an eye open for feeding damage to the onion leaves and look for larvae causing damage. Leaf damage could be caused by yellow woollybear caterpillars or leek moth.

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. Verticillium early dying symptoms are showing up in some fields, keep an eye out in susceptible varieties for early symptom development, for more information, see the Ontario Crop IPM page at <u>http://www.omafra.gov.on.ca/IPM/english/potatoes/diseases-and-disorders/verticillium.html</u> Continue to be vigilant for late blight as spores continue to be found in spore traps in many Ontario counties. Late Blight symptoms have been found in Pennsylvania, New York, and Wisconsin; although Ontario and Michigan have still not had any symptoms show up yet. If you suspect late blight in your field, please contact Dennis at <u>dennis.vandyk@ontario.ca</u>, (519) 766-5337.

Growth Stage	Soil Available Water Requirement	Yield Losses IF Available Water Below Required Levels		
Growth Stage I Sprout Development	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% Highest demand for water. 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		

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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*	1919	1776	1377	1137	817	1506	1776	1022
Chatham-Kent*	1744	1603	1217	982	644	1341	1603	874
Norfolk**	1703	1568	1190	961	623	1312	1568	855
Huron***	1453	1325	974	763	461	1084	1325	666
Wellington**	1489	1363	1011	803	501	1122	1363	710
SimcoeCounty***	1483	1356	1007	801	504	1117	1356	708
Durham***	1557	1431	1081	877	571	1192	1431	781
Peterborough	1417	1290	936	725	431	1049	1290	632
Kemptville***	1606	1478	1125	907	584	1238	1478	803
Sudbury***	1307	1195	885	703	430	982	1195	618

Pest Degree Day Forecasting

*- 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/2019/08/14/vcr-14/#essex) Chatham-Kent County(https://onvegetables.com/2019/08/14/vcr-14/#chatham-kent) Norfolk County(https://onvegetables.com/2019/08/14/vcr-14/#huron) Huron County(https://onvegetables.com/2019/08/14/vcr-14/#huron) Wellington County(https://onvegetables.com/2019/08/14/vcr-14/#wellington) Simcoe County(https://onvegetables.com/2019/08/14/vcr-14/#simcoe) Durham County(https://onvegetables.com/2019/08/14/vcr-14/#durham) Peterborough(https://onvegetables.com/2019/08/14/vcr-14/#durham) Peterborough(https://onvegetables.com/2019/08/14/vcr-14/#peterborough) Kemptville(https://onvegetables.com/2019/08/14/vcr-14/#kemptville) Sudbury(https://onvegetables.com/2019/08/14/vcr-14/#sudbury)

Essex County



Essex Total Precipitation per Month



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Chatham-Kent County



Norfolk County



Huron County





140 120 100 80 60 40 20 0 March April May June July August ■2019 ■10 year average

Norfolk Total Precipitation per Month



Huron County Total Precipitation per Month



VCR - Vegetable Crop Report - August 14, 2019...con't

Wellington County



Simcoe County



Wellington County Total Precipitation per Month 140 120 Precipitation (mm) 100 80 60 40 20 0 March June July April May August ■2019 ■10 year average

Simcoe County Total Precipitation per Month



Durham County



Durham Total Precipitation per Month



VCR - Vegetable Crop Report - August 14, 2019...con't

140

120

100

80

Precipitation (mm)

Peterborough



Kemptville



60 40 20 0 March April May June July August © 2019 © 10 year average

Peterborough Total Precipitation per Month



Sudbury



Sudbury Total Precipitation per Month



August 20, 2019