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Current late blight risk in Ontario field tomatoes: July 10, 2019

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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.

So, what is the risk of late blight so far this year?

- No positive detections of P. *infestans* spores in Spornado or rotorod traps yet this season.
- The **BliteCast** forecasting model **hit the threshold** for the first fungicide application at Ridgetown Campus on June 20, but since that time, conditions for infections have generally been less favourable.
- There are no reports of late blight symptoms on tomato or potato in Ontario or anywhere in the Great Lakes Region. The only report of late blight in the United States is in Florida(<u>https://lateblight-rs1.climate.ncsu.edu/2019-map/</u>).
- Taken together, the above points mean that the environment has been less conducive for infection by *infestans* than earlier in the season and we

have **no evidence that there is an active source of inoculum** present in the growing region.

Figure 1. Spornado (left) and rotorod (right) spore traps setup at Ridgetown Campus, University of Guelph.





Ministry of Agriculture, Food and Rural Affairs

Current late blight risk in Ontario field tomatoes: July 10, 2019...con't

If you suspect late blight in your tomato (or potato) crop, please reach out to Amanda Tracey (<u>Amanda.tracey@ontario.ca</u>, 519-350-7134) or Cheryl Trueman (<u>ctrueman@uoguelph.ca</u>, 519-674-1500 x63646) to confirm the diagnosis.

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

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VCR - Vegetable Crop Report - July 12, 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 – Hot weather in the past week has given crops a good stretch of sunlight and heat units to continue their growth progression. Most regions are still behind their 10-year average degree day accumulations with exception to Essex and Norfolk which have caught up to their respective averages, while Chatham is only marginally below its average. Planting is now completed for long season crops and harvest of some early transplanted crops is now underway in some regions.

Rainfall – Rainfall has varied from region-to-region this week with unstable weather systems causing severe afternoon thunderstorms to pop up and drop up to an inch of rain per day in some areas, while others are now regularly irrigating

fields due to a lack of precipitation. Chatham, Kemptville, and Norfolk are approaching their halfway points for average July rainfall while the rest of the growing regions are at a quarter or less of their average July rainfall totals.

Crop Updates

Brassica Crops - Diamondback moths levels and flea beetles are now decreasing with aphids, imported

cabbageworm taking their places. Zebra caterpillars have been observed in several fields and infestations are typically sporadic and do not warrant control measures. Keep scouting for Alternaria and incorporate all reside in the soil from a block once it is harvested.

Carrot – With this stretch of hot weather, we've been seeing some heat canker in carrot fields due to hot soil temperatures. Irrigation is important to mitigate some of that heat stress and keep the plants from shutting down.

Celery – Black heart, caused by a calcium deficiency has been seen in some transplants as well as some carrot weevil damage. Severe infestations of root knot nematode (picture to the right) can cause stunting and leaf dieback. Use a shovel to dig up stunted plants and check the roots for nodules.



Garlic – The second generation of leek moth has started as trap captures have spiked in many areas. With the crop approaching harvest shortly, be mindful that Matador has a 14 day PHI while other products have a 3 day PHI (Delegate WG, Success and Entrust) or no PHI (Bioprotec CAF). Destroy any plants you find that have leek moth damage as managing leek moth levels this year will likely reduce the amount of potential damage seen next year. Zebra caterpillars (picture to the right) have been found in a few garlic fields this week; infestations are typically sporadic and do not warrant control measures. To read more about Zebra caterpillars see: https://onvegetables.com/2012/06/29/zebra-caterpillars/



Onions – Onion maggot and onion smut damage has been common this season while populations of onion thrips has been low. When populations reach over a threshold of 1 thrips/leaf, two applications of Movento has been found to provide the best control. Conditions have not been favourable for downy mildew development.

Potatoes – We are seeing Colorado potato beetle larvae that have hatched and started feeding. Remember to rotate insecticide groups for any foliar applications. We are still looking for some samples to test for insecticide resistance so if you have some CPB feeding in your fields, please contact Dennis at 519-766-5337. During this time of rapid growth, remain vigilant on fungicide applications to ensure new leaves are protected. No late blight spores have been found in the spore traps and no late blight confirmations have been reported in surrounding states. We've seen some early blight lesions show up on some older leaves. With the hot and dry conditions we've had the last week or two, it's important to maintain soil moisture levels during critical growth stages. Refer to the chart below for the impact of dry weather on yield loss.

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		

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*	1264	1155	854	681	460	951	1155	599
Chatham- Kent*	1130	1022	735	566	340	826	1022	491
Norfolk**	1107	1004	725	562	337	814	1004	490
Huron***	894	799	547	402	212	624	799	338
Wellington**	922	829	576	434	244	654	829	372
Simcoe County***	901	807	557	417	233	634	807	357
Durham***	957	863	613	475	281	690	863	412
Peterborough	854	759	505	360	178	585	759	299
Kemptville***	1004	910	655	504	292	735	910	432
Sudbury***	766	687	476	360	199	540	687	308

*- 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/2019/07/12/vcr-9/#essex) Chatham-Kent County(https://onvegetables.com/2019/07/12/vcr-9/#chatham-kent) Norfolk County(https://onvegetables.com/2019/07/12/vcr-9/#norfolk) Huron County(https://onvegetables.com/2019/07/12/vcr-9/#huron) Wellington County(https://onvegetables.com/2019/07/12/vcr-9/#wellington) Simcoe County(https://onvegetables.com/2019/07/12/vcr-9/#simcoe) Durham County(https://onvegetables.com/2019/07/12/vcr-9/#durham) Peterborough(https://onvegetables.com/2019/07/12/vcr-9/#peterborough) Kemptville(https://onvegetables.com/2019/07/12/vcr-9/#kemptville) Sudbury(https://onvegetables.com/2019/07/12/vcr-9/#sudbury)

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March

Essex County



Essex Total Precipitation per Month 140 120 100 Precipitation (mm) 80 60 40 20

April

Chatham-Kent County



Chatham-Kent Total Precipitation per Month

May 2019 10 year average June

July



Norfolk County



Norfolk Total Precipitation per Month



Huron County



Wellington County





Wellington County Total Precipitation per Month



Simcoe County



Simcoe County Total Precipitation per Month



140

120

100

80

60

40

20

0

March

Precipitation (mm)

Durham County



Peterborough



■2019 ■10 year Average

April

May

June

July

Durham Total Precipitation per Month



Kemptville



Kemptville Total Precipitation per Month



Sudbury

