



Tuesday, June 25, 2019

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Current late blight risk in Ontario field tomatoes: June 20, 2019

Cheryl Trueman, Department of Plant Agriculture, Ridgetown Campus – University of Guelph

With the wet and generally cool weather conditions this Spring there is a lot of concern within the Ontario field tomato industry about diseases. One of these diseases is late blight, caused by the Oomycete pathogen *Phytophthora infestans*. In recent years, appearance of this disease in Ontario has been sporadic, with symptoms first reported anywhere from late June to late August. This has made it difficult for growers to know when to modify fungicide programs to account for increased risk of late blight.

This year, we started a new three-year project to assess the value of different spore traps and forecasting models to better predict late blight risk. We are comparing the Spornado and rotorod spore traps at eight sites in Kent County (Fig. 1). Three of these locations are research sites, where sentinel tomato plants will also be monitored for first appearance of late blight symptoms. We are also running the BliteCast forecasting model at Ridgetown Campus, first developed in New York State, to indicate the risk of late blight based on weather factors. To determine if there is a benefit of spore traps or BliteCast to predict risk, we are comparing fungicide program modifications based on current high-risk triggers (late blight reported in the Great Lakes Region) to modifications made based on positive detections in a spore trap, reaching the BliteCast threshold, or the combination of a positive detection in a spore trap AND reaching the BliteCast threshold in a field trial at Ridgetown Campus.



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

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- ◆ VCR – Vegetable Crop Report – June 20, 2019
- ◆ Young Vegetable Growers Michigan Field Tour

Current late blight risk in Ontario field tomatoes: June 20, 2019...con't

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

- No positive detections of *P. infestans* spores in Spornado traps, which were installed June 10. Our rotorod traps are being installed today and will begin reporting early next week.
- As of today (June 20), the BliteCast forecasting model has hit the threshold for the first fungicide application at Ridgetown Campus.
- There are no reports of late blight 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 (<https://lateblight-rs1.climate.ncsu.edu/2019-map/>).
- Taken together, the above points mean that the environment has been conducive for infection by *P. infestans*, but so far, we have no evidence that there is an active source of inoculum present in the growing region.

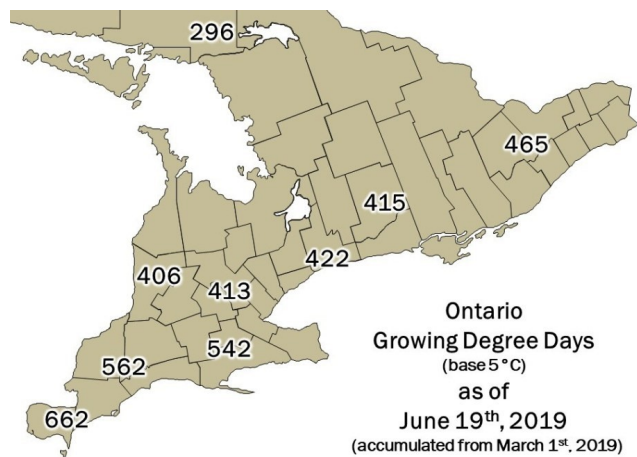
If you suspect late blight in your tomato (or potato) crop, please reach out to Amanda Tracey (Amanda.tracey@ontario.ca, 519-350-7134) or Cheryl Trueman (ctrueman@uoguelph.ca, 519-674-1500 x63646) to confirm the diagnosis.

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

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

VCR – Vegetable Crop Report – June 20, 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 – The cool wet spring has continued to affect temperature and degree day accumulation in almost all growing regions of Ontario with all counties marginally, to significantly behind their 10-year average degree day accumulations. While some regions are now receiving near average temperatures, the lack of sun, and late planting dates has slowed the growth and development of many crops in most planted areas.

Rainfall – Rainfall has generally slowed in most regions this week and planting in most regions is now near completion, or completed already. Many counties are now approaching their 10-year average rainfall totals for June with exception to Peterborough, Huron and Simcoe counties.

Crop Updates

Brassica Crops – Diamondback moths are now active in fields. Also keep an eye out for flea beetles especially during higher temperatures when they are more active. Continue to scout for cabbageworm, tarnished plant bugs, aphids, and thrips. The first generation of cabbage maggot has now emerged in Southwestern Ontario, and severely infested plants may be found to be wilted in hot weather.

Carrot – Weevils are active and laying eggs in most regions of the province. Monitor for adults to see if your fields have reached the spray threshold. Read about the latest in carrot weevil control in this post – [Update on Carrot Weevil Control](https://onvegetables.com/2019/04/09/update-on-carrot-weevil-research-from-the-university-of-guelph/) (<https://onvegetables.com/2019/04/09/update-on-carrot-weevil-research-from-the-university-of-guelph/>).

VCR – Vegetable Crop Report – June 20, 2019...con't

Celery – Transplants are establishing well in fields. Carrot weevils have been active and the degree day threshold for aster leafhoppers and tarnished plant bugs has been reached in all growing regions.

Garlic – Scaping of hardneck varieties has started in several counties. Be sure to avoid damage to an leaves while scaping. Avoid using sickle bar mowers to cut the scapes, as they often cut leaves which will reduce the bulb yield potential, as well as spread plant pathogens, including viruses between plants. Better yields have resulted when the scape is snapped an inch above the youngest leaf as pulling scape instead of snapping can cause upper leaves to lose support and fall over leading to pre-mature senescence. While in the field or scaping, scout for holes and damage to the scape (**Fig. 1A**) and leaves due to leek moth as adult leek moth trap counts have been elevated this week. If you find a plant wit holes or damage, tear apart the leaves and look for light-green larvae about half an inch in length (**Fig 1B**).

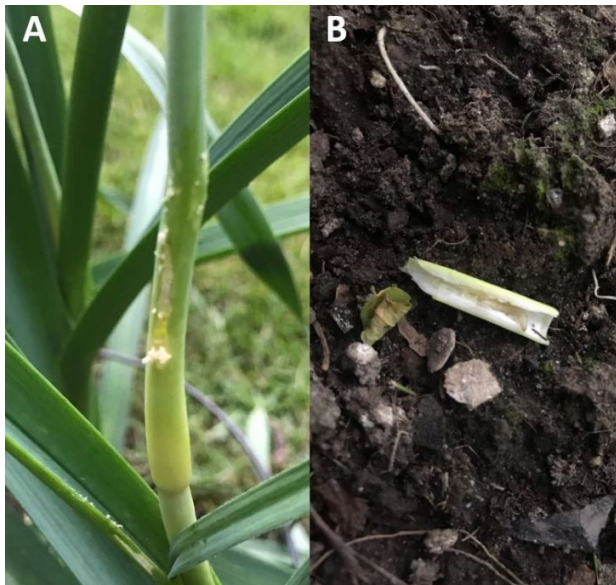


Fig 1. Garlic scape with leek moth feeding damage (A) and leek moth larvae found inside scape when cut (B).

Onions – Earliest seeded onions are up to the 6th leaf stage while most fields are averaging around the 3rd leaf stage. Without the waxy build up on leaves, herbicide damage has been common in most fields. The first generation of onion and seedcorn maggot are now active, or are past their peak flight in all counties with exception to cabbage maggot in Sudbury. Cutworm damage in several direct seeded fields. The cooler, wet weather has kept the levels of thrips low thus far into the season. Thrips are usually first detected along field borders. Onion fields next to hay or overwintering rye are at a greater risk as thrips move once the hay or rye is cut. Given the weather, also keep an eye open for botrytis and downy mildew

Peppers – Peppers are about 90% planted and plant to be finished by June 22nd. Peppers are experiencing more Pythium and/or Fusarium stem rots, which is likely attributed to the wet weather and delayed planting this year.

Potatoes – Be vigilant in scouting for late blight. Early season conditions have been favorable for any seed piece or cull pile infections to sporulate. Overwintering Colorado Potato Beetle adults are active, mating and laying eggs currently. Scout your fields, especially around the border to determine if your field is at threshold or if your seed-piece/in-furrow insecticide is effective. In order to monitor whether the CPB are becoming resistant to our registered insecticides, AAFC will be conducting a CPB resistance survey again this season. If you see any CPB populations in your potatoes, please contact Dennis (519-766-5337) and we can come and take a sample to be tested.

Tomatoes – Tomato planting has now concluded. There has been a higher incidence of Pythium and/or Fusarium stem rots this season compared to years past, which is also likely due to the wet weather and delayed planting this year

VCR – Vegetable Crop Report – June 20, 2019...con't

Pest Degree Day Forecasting

Select a region below for the latest weather, crop and pest degree day information:

Essex County(<https://onvegetables.com/2019/06/20/vcr-6/#essex>)

Chatham-Kent County(<https://onvegetables.com/2019/06/20/vcr-6/#chatham-kent>)

Norfolk County(<https://onvegetables.com/2019/06/20/vcr-6/#norfolk>)

Huron County(<https://onvegetables.com/2019/06/20/vcr-6/#huron>)

Wellington County(<https://onvegetables.com/2019/06/20/vcr-6/#wellington>)

Simcoe County(<https://onvegetables.com/2019/06/20/vcr-6/#simcoe>)

Durham County(<https://onvegetables.com/2019/06/20/vcr-6/#durham>)

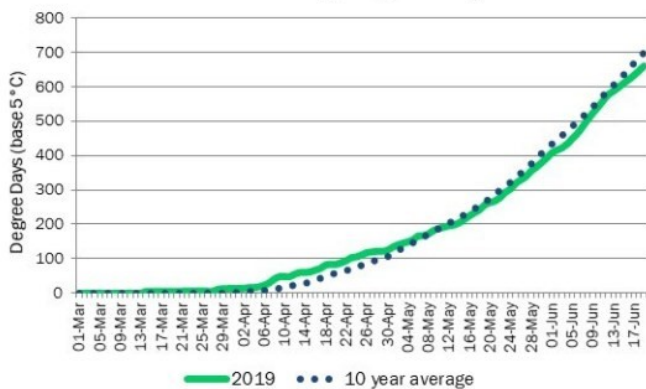
Peterborough(<https://onvegetables.com/2019/06/20/vcr-6/#peterborough>)

Kemptville(<https://onvegetables.com/2019/06/20/vcr-6/#kemptville>)

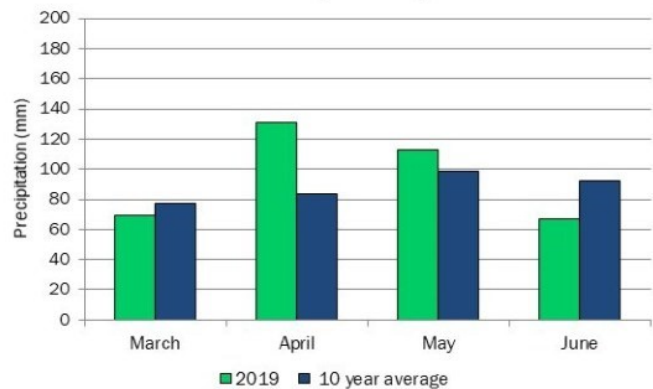
Sudbury(<https://onvegetables.com/2019/06/20/vcr-6/#sudbury>)

Essex County

Essex Growing Degree Days

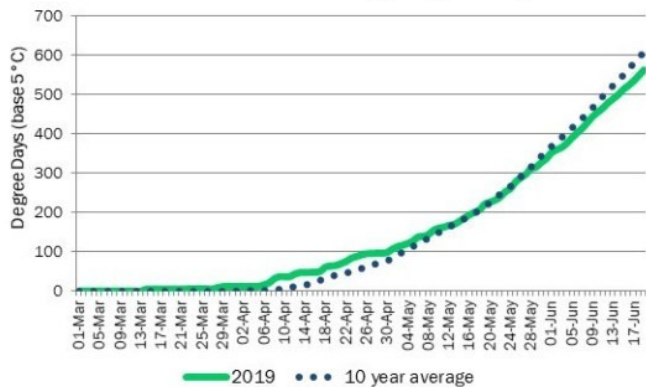


Essex Total Precipitation per Month

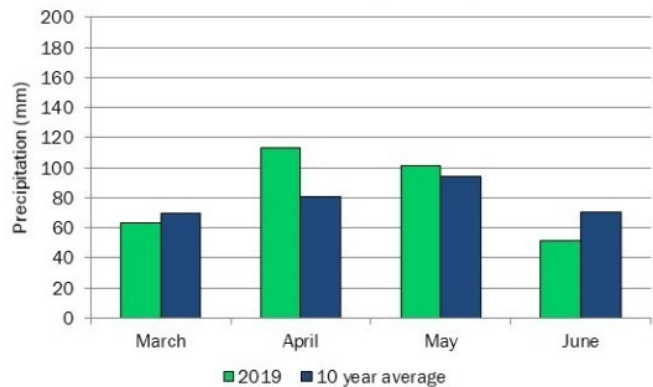


Chatham-Kent County

Chatham-Kent Growing Degree Days

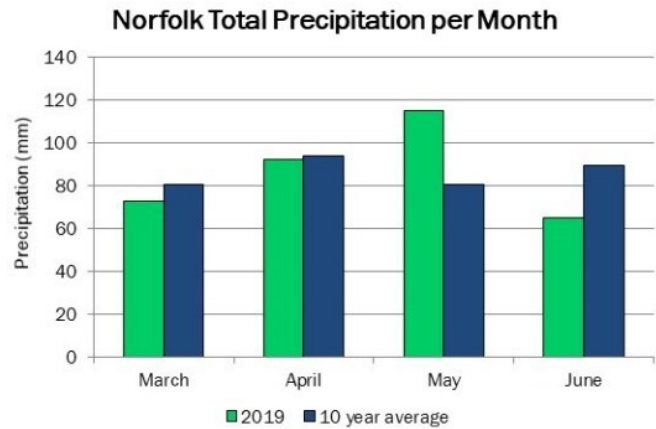
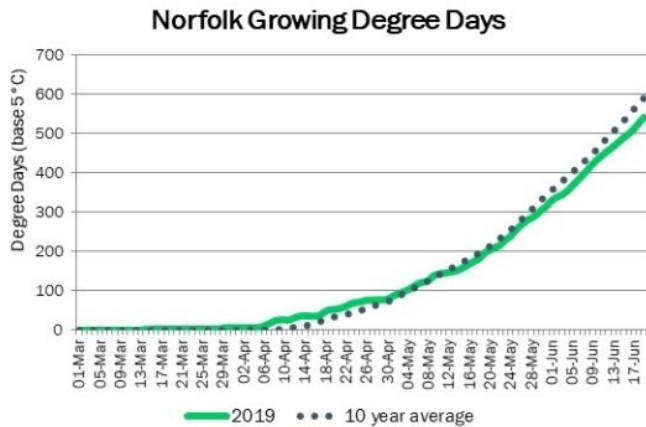


Chatham-Kent Total Precipitation per Month

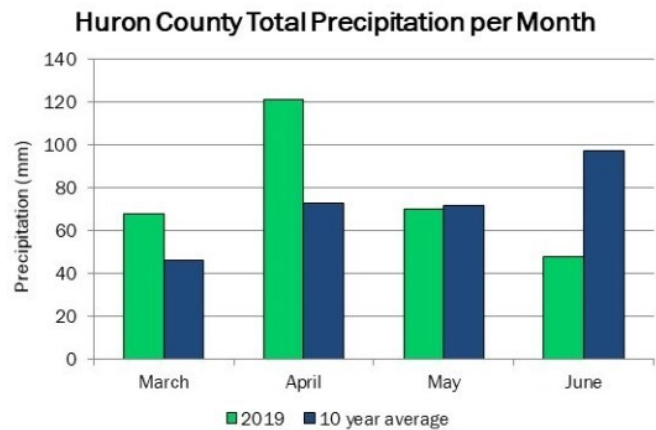
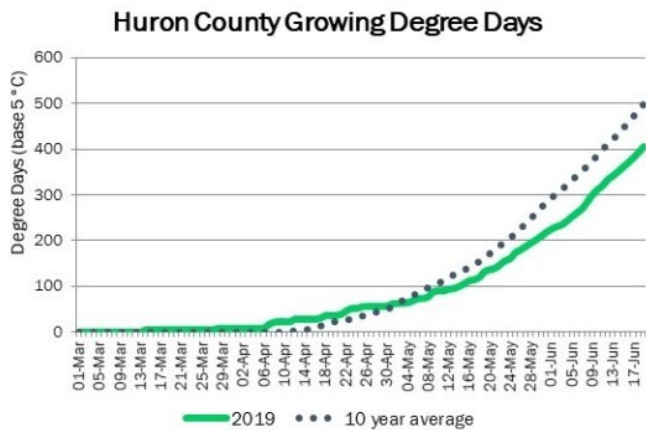


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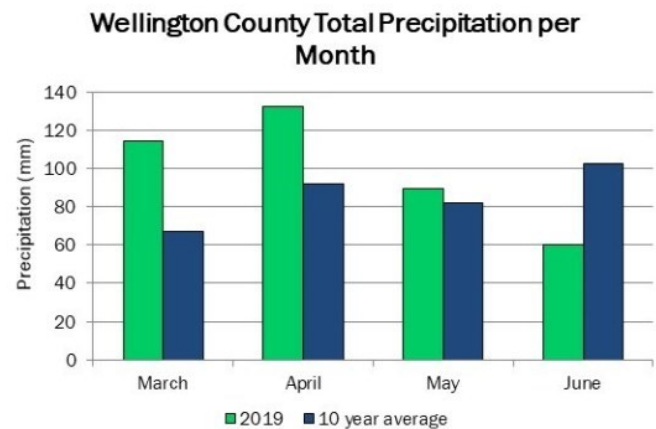
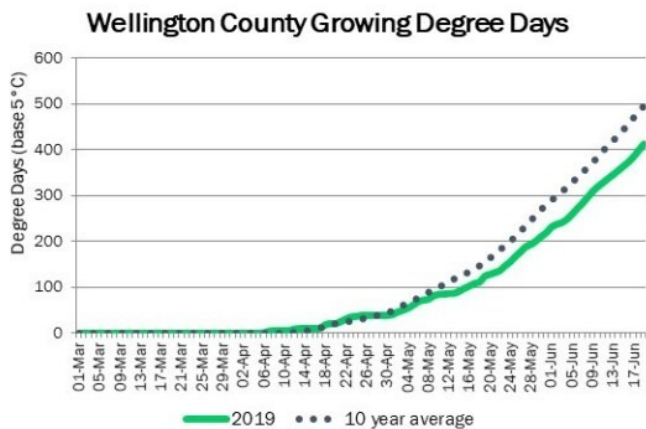
Norfolk County



Huron County

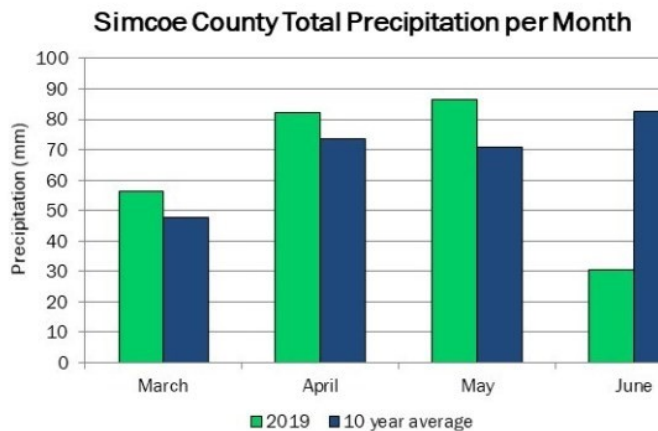
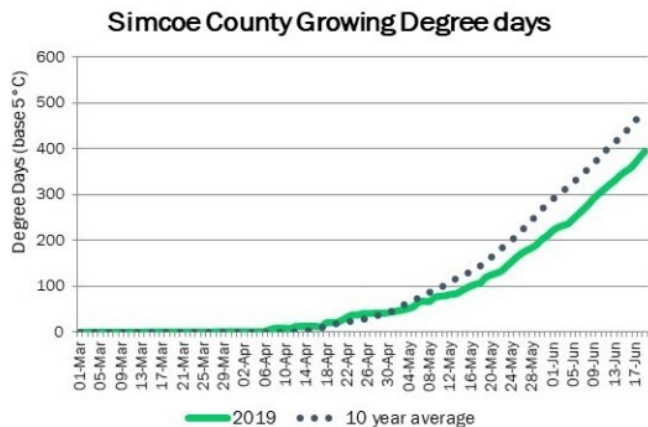


Wellington County

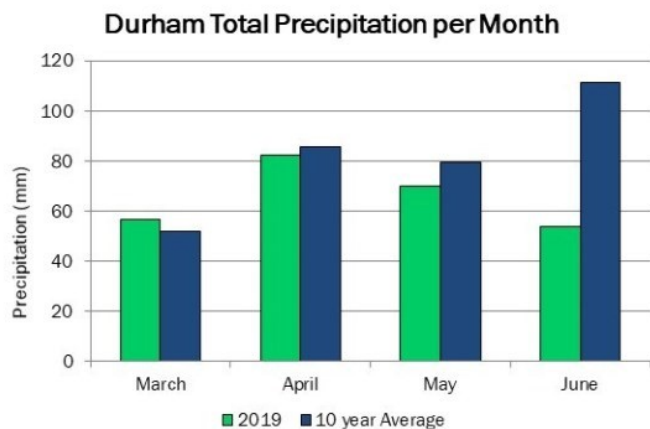
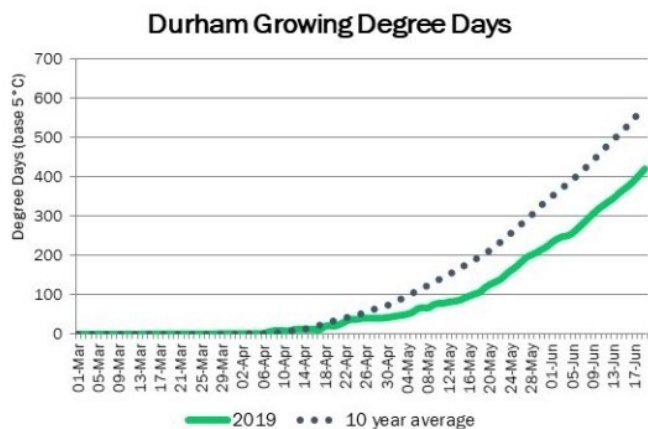


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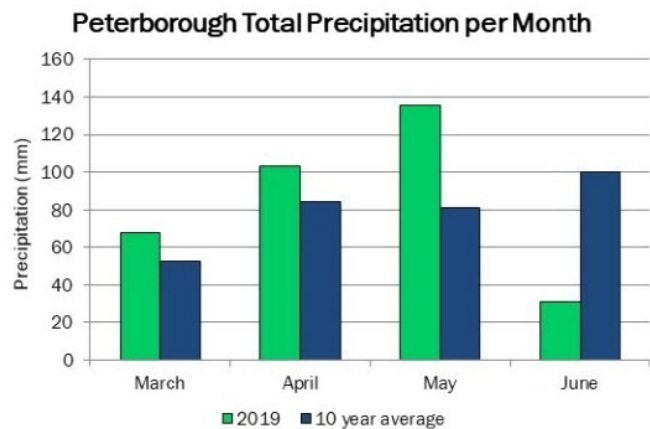
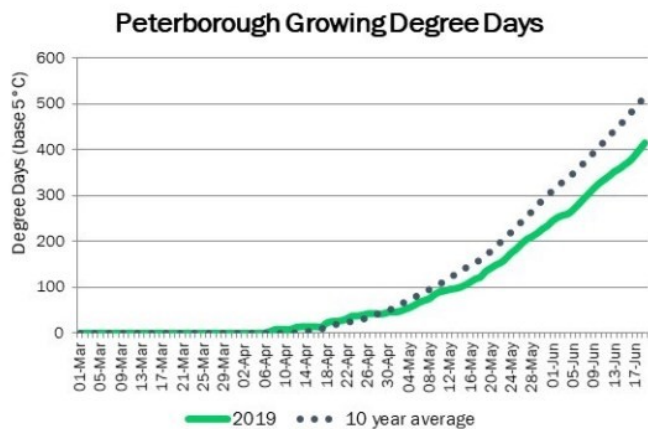
Simcoe County



Durham County

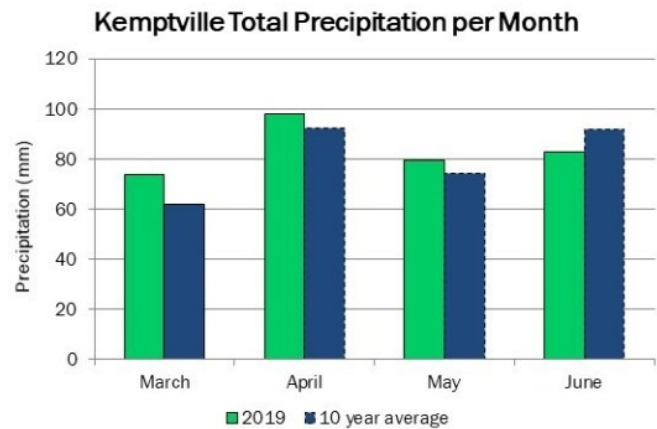
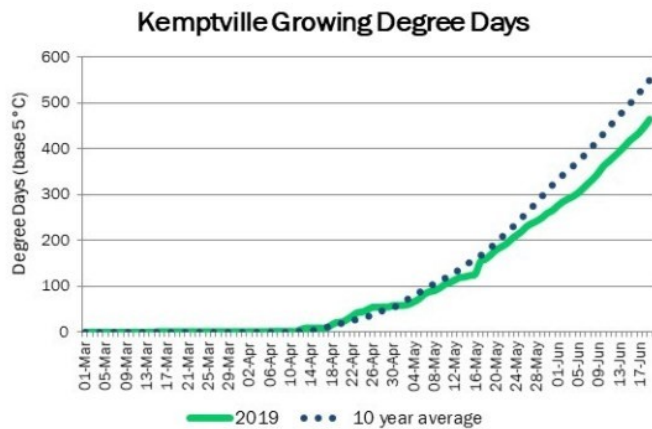


Peterborough

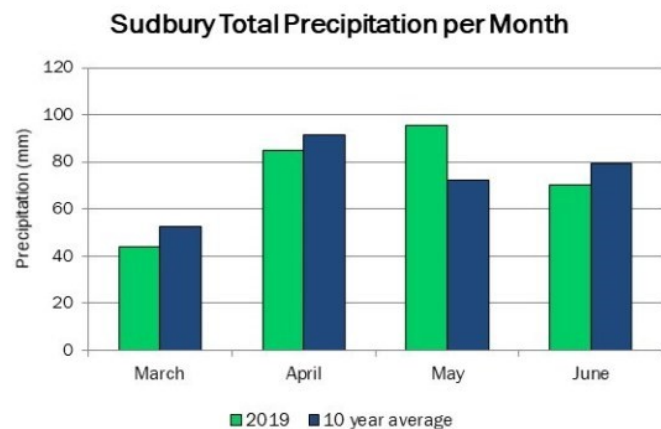
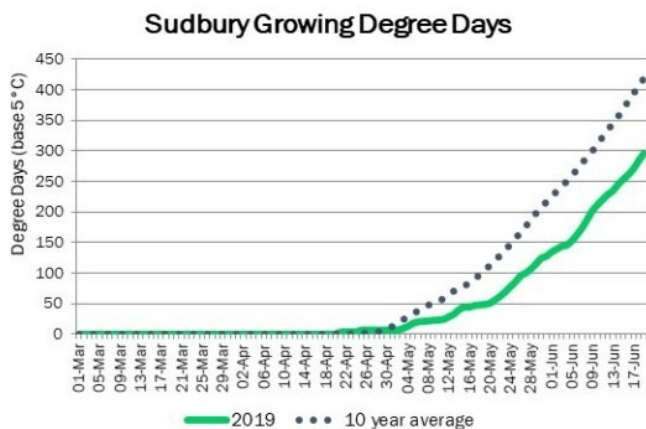


VCR – Vegetable Crop Report – June 20, 2019...con't

Kemptonville



Sudbury



VCR – Vegetable Crop Report – June 20, 2019...con't

Pest	Carrot Rust Fly	Onion Maggot	Carrot Weevil	Aster Leafhopper	Tarnished PlantBug	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*	833	745	511	381	226	585	745	321
Chatham-Kent*	726	641	419	295	143	488	641	242
Norfolk**	698	617	404	285	134	471	617	235
Huron***	547	474	288	187	71	343	474	145
Wellington**	552	481	294	196	81	350	481	157
Simcoe County***	534	462	278	182	72	333	462	144
Durham***	561	489	305	211	91	360	489	170
Peterborough***	555	482	294	190	71	352	482	149
Kemptville***	606	533	344	237	100	403	533	187
Sudbury***	407	350	205	133	47	247	350	103

*- 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

Thresholds

Use these thresholds as a guide, always confirm insect activity with actual field scouting and trap counts.

Young Vegetable Growers Michigan Field Tour



OMAFRA and MSU Extension have organized a young growers (under 35) exchange/field tour this summer. It's a 2-day/1-night tour of Western Michigan vegetable production from July 17-18 2019. The bus, food and most of the accommodations are covered through a Great Lakes Vegetable Working Group grant, Michigan Vegetable Council and MSU sponsorships so growers only have to pay \$25 for a double room or \$63 USD for a single room. More information and sign up link is here:

<https://events.anr.msu.edu/vegbustrip/>

Some of the highlights on the tour:

- Paul Main Farms – Soil health and cover crops in a potato rotation
- Brink Muck Farms – MI onion production
- Bouwkamp Farms – Root vegetable production on changing soils
- Sackett's Potatoes – Large chip potato grower
- Morgan's Composting

Contact Dennis Van Dyk (dennis.vandyk@ontario.ca, 519-766-5337) if you have any questions.