



Wednesday, June 29, 2022

OMAFRA Vegetable Team:

Travis Cranmer, Guelph
519-835-3382
travis.cranmer@ontario.ca

Dennis Van Dyk, Guelph
519-766-5337
dennis.vandyk@ontario.ca

Elaine Roddy, Ridgetown
519-401-5890
elaine.rodry@ontario.ca

Amanda Tracey, Ridgetown
519-350-7134
amanda.tracey@ontario.ca

Spore traps monitoring for causal agents of tomato late blight in Chatham-Kent

Joseph Tomecek (Tomecek Agronomic Services/M.Sc. candidate, Dept. of Plant Agriculture, Univ. of Guelph); Amanda Tracey (OMAFRA), Dr. Cheryl Trueman (Ridgetown Campus, Univ. of Guelph)



Late blight, caused by the Oomycete pathogen *Phytophthora infestans*, is a devastating disease of tomato and potato. Its appearance in Ontario can be sporadic, with symptoms first reported anywhere from late June to late August depending on the year. This has made it difficult for growers to know when to modify fungicide programs to account for increased risk of these diseases.

To better understand if spore trapping is a useful tool to better predict risk of late blight, a spore trapping network has been deployed in Chatham-Kent for a third year. We are comparing the Spornado and rotorod spore traps at eight sites in Kent County, including a comparison of trap height at four of locations (Fig. 1). Two of these locations include unsprayed sentinel plots of tomatoes that are being monitored for first appearance of late blight. The BliteCast forecasting model, first developed in New York State is also being evaluated to indicate late blight risk based on environmental factors. To determine if there is a benefit of spore traps or BliteCast, we are comparing fungicide program modifications based on the current high-risk trigger (late blight reported in the Great Lakes Region) to modifications based on detections in a spore trap, the BliteCast threshold, or both, in field trials at Ridgetown Campus and the Cedar Springs Research Station.

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

- No positive detections of *P. infestans* spores in Spornado or rotorod traps, which were installed June 6
- The BliteCast forecasting model has hit the threshold (18 DSV) for the first fungicide application at Cedar Springs but not yet at Ridgetown Campus (5 DSV as of June 23).
- There are no reports of late blight on tomato or potato in Ontario or anywhere in the Great Lakes Region.
- Growing conditions are dry.
- Taken together, the above points mean that the environment has not been very conducive for infection by *P. infestans*, and 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 (ctruman@uoguelph.ca, 226-971-0654) to confirm the diagnosis.

Project collaborators: Yaima Arocha Rosete and Kristine White (Sporometrics), Hervé van der Heyden (Phytodata), and Genevieve Marchand (AAFC)

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- ♦ VCR – Vegetable Crop Report – June 23rd, 2022
- ♦ 2022 Ontario Potato Field Day

VCR – Vegetable Crop Report – June 23rd, 2022

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 – Though many counties experienced a heat wave this past week the week GDD continues to match or be slightly above the GDD 10 year average. Daytime temperatures continue to run high this week with forecasts ranging in the twenties to thirties across the province and peaking over the weekend.

Precipitation – Most counties received little to no rain over the past week except for Durham, Peterborough and Kemptville. Some counties may see rain towards the end of the weekend, some with a chances of thunderstorms, and also again midweek.

Crop Updates

Brassica Crops – Harvest has started in early planted broccoli and cabbage this week. Black rot, caused by the pathogen *Xanthomonas campestris* pv *campestris*, is being observed in multiple locations this season (Figure 1). Black rot spreads rapidly during warm, humid weather and enters other plants through wounds or natural openings on the leaf tips. The *Xanthomonas* bacteria often finds it's way to farms in infected seeds and then bacterial cells overwinter on used trays, propagation equipment and crop debris for up to three years. Infected plants have characteristic 'v' shaped lesions and systemically infected plants have chlorotic areas anywhere on the leaf. When leaves are held up to the sun, veins filled with *Xanthomonas* bacteria are stained black in the chlorotic areas on the leaf. The best management strategy is prevention through certified clean seed, sanitation of propagation equipment/tools, a four-year crop rotation, and roguing and then burying all crop debris. To read more about black rot, refer to [CropIPM](#). Damage from imported cabbageworms, cutworms and diamondback moths continues to be observed. Dig up wilted plants and inspect roots for cabbage maggot larvae, nematodes, clubroot or damaged caused by wireworms. Check transplants for bacterial leaf spot and in the field be on the lookout for *Alternaria*, heat canker, aphids and thrips.



Figure 1. Black rot leaf on cauliflower with characteristic 'V' shaped lesion on leaf tip.

Celery – Plants are establishing well. Tarnished plant bugs and aster leaf hoppers are active, and some fields are showing cutworm, Leafminer and slug damage. Scout for yellow/orange scratch marks along the stalk left by carrot weevils. Rogue out yellow plants in the field that show aster yellows symptoms. Dig up stunted and/or wilted plants and inspect roots for nematode cysts, or carrot weevil larvae.

Garlic – Scaping continues across the province. Ensure plants have adequate moisture and consider irrigating over the next two weeks while plants are bulbing for optimal yields. The populations of leek moths in traps is increasing this week which will likely result in an increase in larvae feeding/damage to leaves over the next two weeks. If applying insecticides, a single insecticide application is most effective when it is applied 10 days after the date that corresponds to the peak moth capture. If you plan on two applications, make the first application 3 to 7 days after the date of peak moth capture and the second treatment 14 days later. Dig up plants that show advanced leaf dieback from the base of the plant upward and inspect basal plate for damage caused by stem and bulb nematode (Figure 2) or *Fusarium* basal rot. Leaf yellowing from the top, newest leaves and progressing downward is often caused by Aster Yellows, nitrogen deficiency, *Fusarium* yellows or herbicide damage.

Register for the next **Garlic Production and Pest Management workshop** near **Janetville, ON**, that takes place **Friday, August 19th** from **9:30-4:30**. Register by calling 1-877-424-1300 or filling out this online form: <https://survey.clicktools.com/app/survey/go.jsp?iv=1y59n0qcz8rld>.



Figure 2. Various degrees of stem and bulb nematode damage on garlic. Look for stunted plants with leaf yellowing from the bottom leaves of the plant moving upward.

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Onions – The largest direct seeded onions are reaching the 6th leaf stage while most fields are still around the 4th leaf stage. Transplant onions are taking off with some fields at the 8th leaf stage. The pressure of thrips has continued to be low in direct seeded onions, but higher levels are being observed in transplants. Be mindful that onion fields next to hay or overwintering rye are at a greater risk to thrips once they are cut and include counts from at least one location near the field border when scouting for thrips. Past research has shown that Movento 240 SC (group 23) has some residual activity that works better against larvae when it is applied earlier in the season. If the spray threshold exceeds 3 thrips/leaf, Movento 240 SC could be followed by two applications of Delegate (group 5) or Agri-Mek (group 6). Malathion 85E (group 1B), Dibrom (group 1B), Entrust (group 5), Success (group 5), and Exirel (group 28) are also registered. Using a penetrating surfactant can be useful to maximize the effectiveness of products against thrips. Apply no more than two consecutive insecticides from the same IRAC crop as thrips have a relatively short life cycle with multiple generations through the summer months and are at a high risk of developing insecticide resistance. Stemphylium leaf blight is likely to be observed over the next couple of weeks. If Penflufen was part of the seed treatment, do not start with a foliar group 7 fungicide. For the first application, a product containing mancozeb (group M3s, such as Manzate Pro-Stick, Dithane Rainshield, and Penncozeb 75 DF Raincoat) may provide protection against Stemphylium if it is being applied to manage onion smut, Botrytis or Alternaria/Purple Blotch. Avoid applying products from the same chemical group one after the other to manage Stemphylium. For the second foliar product, products containing a group 7 show the best efficacy, such as Sercadis, Aprovia, or Miravis Duo (group 7/3). Research has shown that there is very high resistance in Stemphylium to one of the fungicides in Quadris Top (group 11/3) and in Luna Tranquility (group 7/9). Over the next couple of weeks, monitor for new cutworm damage, wilt caused by onion maggot larvae, and white rot as conditions have been favourable for white rot development in some areas.

Pest Degree Day Forecasting

*NOTE: Data as of June 22, 2022

County	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*	1010	921	675	539	372	752	921	479
Chatham-Kent*	867	783	556	432	264	628	783	379
Norfolk**	881	798	571	439	263	644	798	382
Huron***	764	685	469	348	190	536	685	294
Wellington**	742	665	451	332	179	519	665	283
Simcoe County***	749	671	461	340	189	527	671	290
Durham***	801	718	496	371	202	566	718	315
Peterborough	737	660	447	330	169	514	660	277
Kemptville***	803	718	498	378	208	564	718	323
Sudbury***	611	551	380	280	144	435	551	236

*- 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/2022/06/23/vcr2022-8/#essex>)

Chatham-Kent County(<https://onvegetables.com/2022/06/23/vcr2022-8/#chatham-kent>)

Norfolk County(<https://onvegetables.com/2022/06/23/vcr2022-8/#norfolk>)

Huron County(<https://onvegetables.com/2022/06/23/vcr2022-8/#Huron>)

Wellington County(<https://onvegetables.com/2022/06/23/vcr2022-8/#wellington>)

Simcoe County(<https://onvegetables.com/2022/06/23/vcr2022-8/#simcoe>)

Durham County(<https://onvegetables.com/2022/06/23/vcr2022-8/#durham>)

Peterborough(<https://onvegetables.com/2022/06/23/vcr2022-8/#peterborough>)

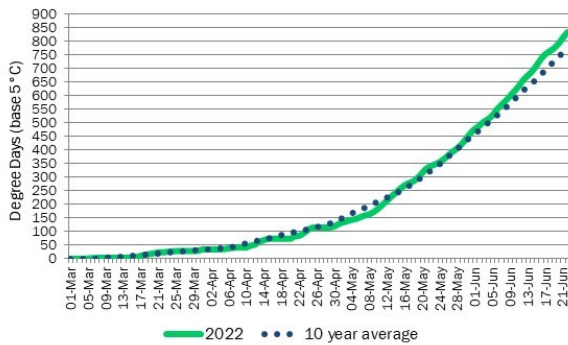
Kemptville(<https://onvegetables.com/2022/06/23/vcr2022-8/#kemptville>)

Sudbury(<https://onvegetables.com/2022/06/23/vcr2022-8/#sudbury>)

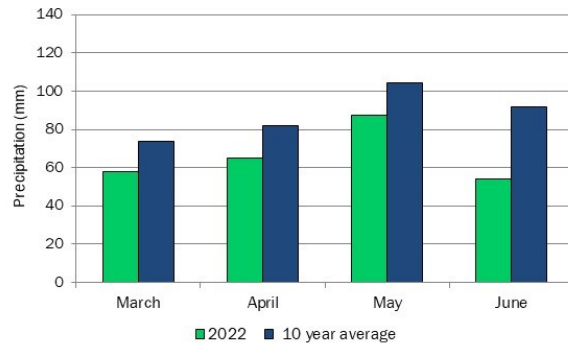
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Essex County

Essex Growing Degree Days

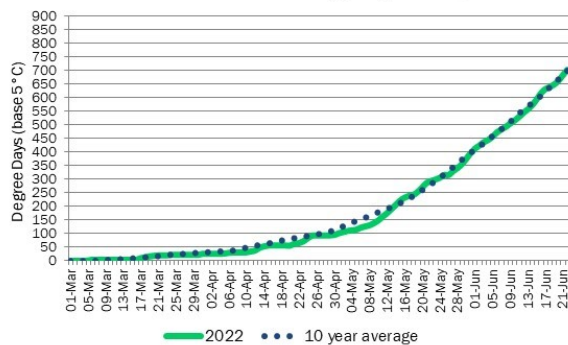


Essex Total Precipitation per Month

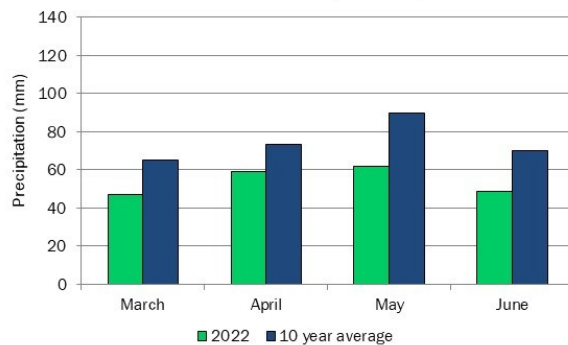


Chatham-kent County

Chatham-Kent Growing Degree Days



Chatham-Kent Total Precipitation per Month

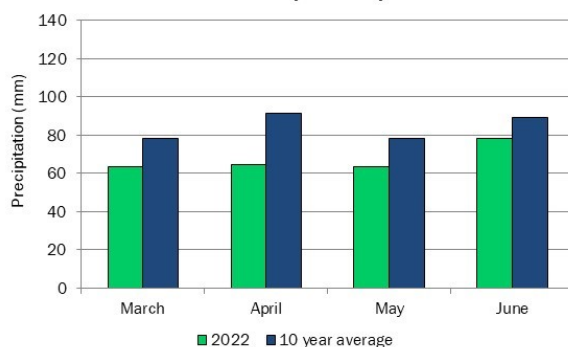


Norfolk County

Norfolk Growing Degree Days

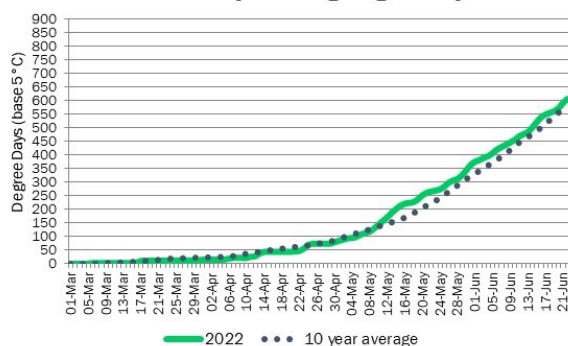


Norfolk Total Precipitation per Month

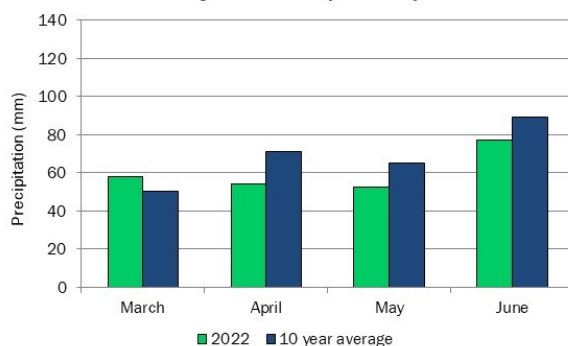


Huron County

Huron County Growing Degree Days



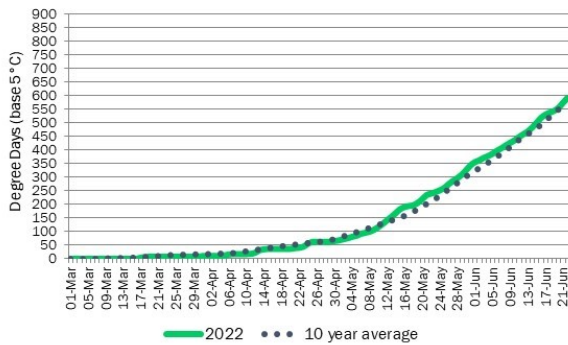
Huron County Total Precipitation per Month



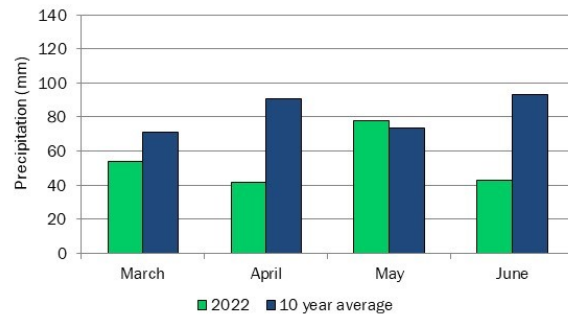
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Wellington County

Wellington County Growing Degree Days

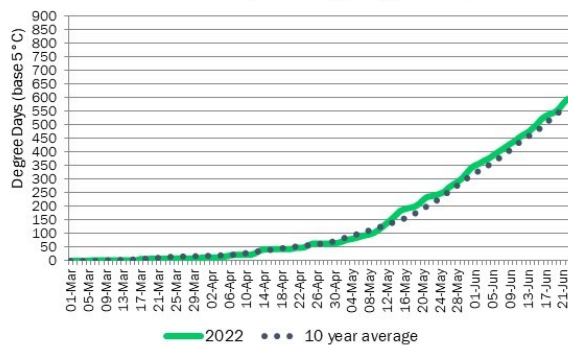


Wellington County Total Precipitation per Month

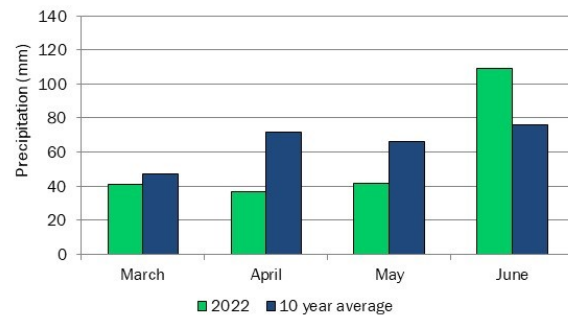


Simcoe County

Simcoe County Growing Degree days



Simcoe County Total Precipitation per Month

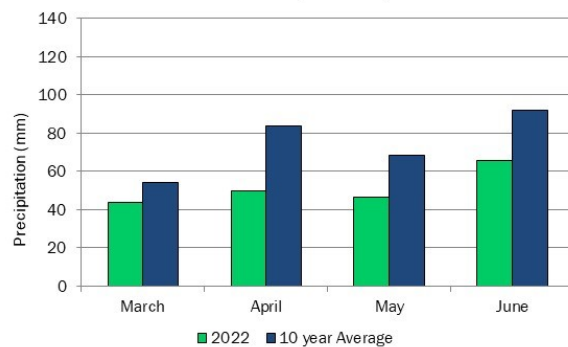


Durham County

Durham Growing Degree Days

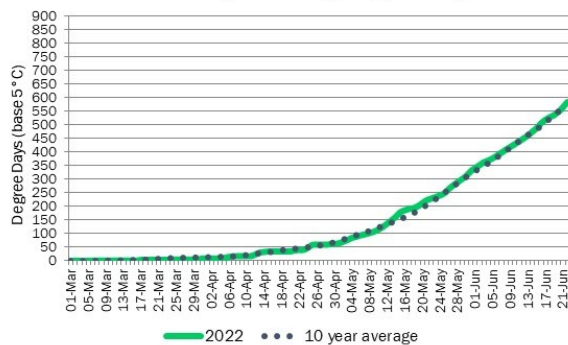


Durham Total Precipitation per Month

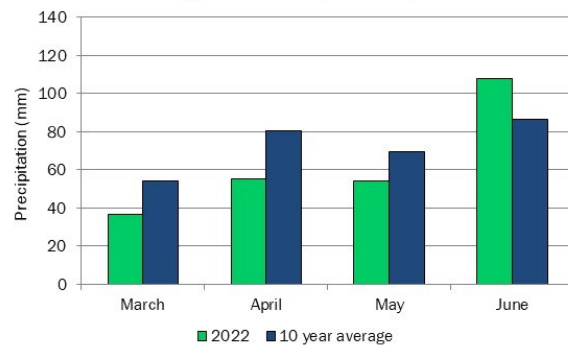


Peterborough

Peterborough Growing Degree Days



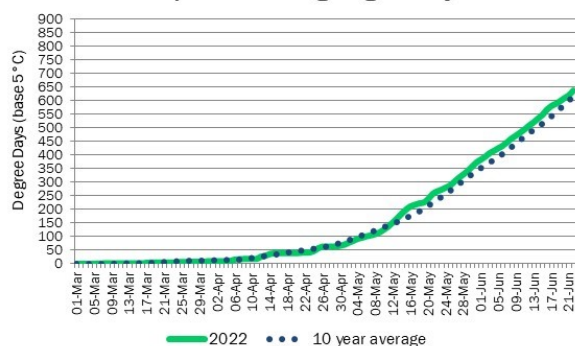
Peterborough Total Precipitation per Month



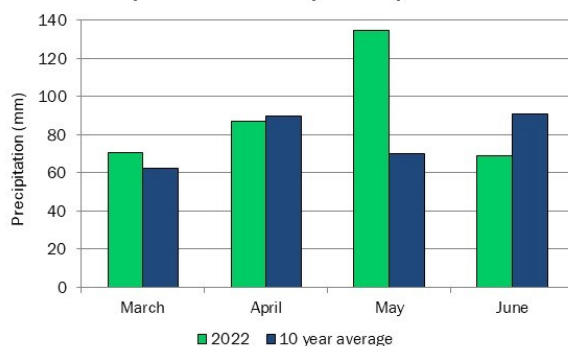
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Kemptville

Kemptville Growing Degree Days



Kemptville Total Precipitation per Month

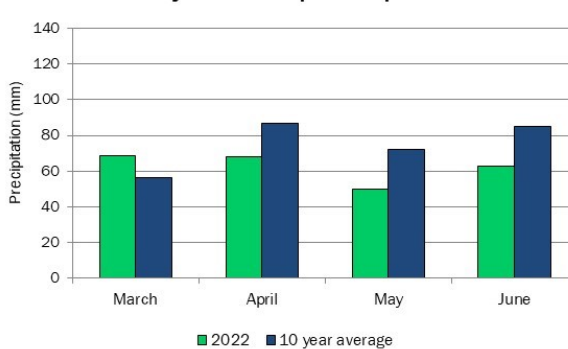


Sudbury

Sudbury Growing Degree Days



Sudbury Total Precipitation per Month



2022 Ontario Potato Field Day

The 2022 Ontario Potato Field Day will be held on Thursday, August 18 at HJV Equipment in Alliston.

For more information, contact eugeniabanks@onpotato.ca

**2022
Ontario Potato Field Day
Thursday, August 18**

Hosted by HJV Equipment
5900 Simcoe Rd 10, Alliston

Starts at 3:00 pm
BBQ at 5:30 pm
Sponsored by







Agenda

- Display of Potato Equipment
- Display of New Potato Varieties
- Trade Show and much more

Do not miss this important summer event for potato growers!
Friendly atmosphere, lots of exchange of ideas on farm equipment
and crop progress! At 5:30pm a delicious BBQ sponsored by Syngenta.

Contact: eugeniabanks@onpotato.ca



<https://onvegetables.com/wp-content/uploads/2022/06/2022-ON-Potato-Field-Day-August-18.pdf>