



Tuesday, July 23, 2019

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

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



As mentioned in a previous post(<https://onvegetables.com/2019/06/20/current-late-blight-risk-in-ontario-field-tomatoes-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, along with the BliteCast forecasting model. This week, DNA of *Phytophthora infestans* spores, the organism that causes late blight, was detected at 1 of 8 sites for the July 15-18 sampling period.

A summary of fungicides for late blight management is available here(<https://onvegetables.com/2015/08/11/late-blight-update-august-11/>).

If you suspect late blight in your tomato 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).

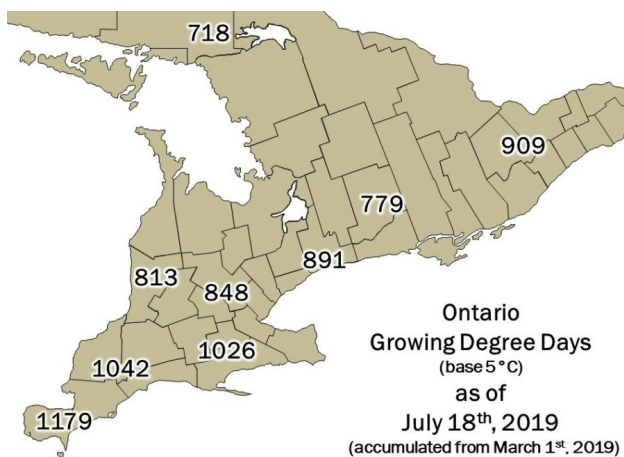
Funding acknowledgement: Ontario Tomato Research Institute, Fresh Vegetable Growers of Ontario, and the Ontario Agri-Food Innovation Alliance.

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July 20th, 2019

VCR – Vegetable Crop Report – July 19, 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 temperatures have continued across the province in the past week with a warm humid air mass settling in across most growing regions in the past few days. Chatham, Essex, and Norfolk counties have all caught up to their 10-year average degree day accumulations while the remaining growing regions are still marginally to significantly behind their 10-year norms

Rainfall – Precipitation has again varied from region-to-region in the province with severe thunderstorms accompanying the hot humid weather and dropping large amounts of precipitation. Norfolk in particular has pushed past its July rainfall averages after receiving 45.9 mm (1.8 inches) of rain on July 17th alone. The remaining growing regions range from

being well below, to on track with their monthly rainfall norms. Regular field irrigation is underway in most regions, especially those who've received little to no rain in the past two weeks.

Crop Updates

Brassica Crops – Diamondback moths, flea beetles, aphids and imported cabbageworm are prevalent in many fields. Continue to scout for Alternaria and incorporate all crop residue into the soil from a block once harvested.

Carrot – With this stretch of hot weather, heat canker has been rampant in many 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. Be on the lookout for celery leaf curl while scouting and rogue out any suspected plants if possible to avoid transmission in the field.

Garlic – Leek moth trap captures have spike and in some cases an insecticide may be worth while to reduce larvae numbers before they reach adults. 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 found with leek moth damage. Managing leek moth levels this year will likely reduce the amount of potential damage seen next year. Some growers have already started harvesting hardneck cultivars. Hardneck cultivars like Music are generally harvested when 40-60% of the leaves have senesced and turned yellow. Remember to refrain from irrigating too close to harvest. If straw mulch is used, it may be helpful to pull the mulch away from plants well before harvest.

Onions – Onion smut has been prevalent this week, small amounts of onion maggot damage, pink root, and bacterial rot have also appeared. Dig up wilted plants and inspect the basal plate and bulb for onion maggot feeding damage. Bacterial soft rots will also cause wilting of the plant and the interior portion of the bulb will break down, often accompanied by a foul odor. Both bacterial rot and pink root may enter plants as a secondary pathogen through insect feeding, or mechanical damage to the plants. Continue to scout for thrips to monitor if or when populations go above thresholds. When populations reach over 1 thrips/lead, two applications of Movento has been found to provide the best control. Conditions have not been favourable for downey mildew development, however stemphylium has continued to show up in fields where irrigation practices are being used.

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Potatoes – Despite the hot weather this week, be vigilant in scouting for late blight, especially in irrigated areas as spores were confirmed in some Ontario counties this week. Early symptoms of late blight include water soaked lesions usually found on the lowest leaves near leaf tips or margins. Later infections will have dark brown or black lesions surrounded by a yellow halo, lesions will eventually coalesce together on both leaves and stems leading to plant collapse. Early blight infection is also still showing up in some fields typically on older leaves. During this time of rapid growth, remain vigilant in both scouting and fungicide applications to ensure new leaves are protected. We are still seeing Colorado potato beetle larvae at various growth stages which have hatched and began feeding on plants. 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. 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

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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*	1408	1291	970	782	540	1073	1291	694
Chatham-Kent*	1264	1150	841	659	409	939	1150	577
Norfolk**	1239	1130	829	653	403	926	1130	573
Huron***	1012	910	637	478	264	721	910	407
Wellington**	1044	945	670	514	301	756	945	446
Simcoe County***	1045	944	673	519	311	757	944	452
Durham***	1088	987	716	564	346	800	987	494
Peterborough	976	875	600	440	235	686	875	373
Kemptville***	1108	1006	730	565	333	818	1006	487
Sudbury***	887	801	570	439	255	640	801	381

*- 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/2019/07/19/vcr-10/#essex>)

Chatham-Kent County(<https://onvegetables.com/2019/07/19/vcr-10/#chatham-kent>)

Norfolk County(<https://onvegetables.com/2019/07/19/vcr-10/#norfolk>)

Huron County(<https://onvegetables.com/2019/07/19/vcr-10/#huron>)

Wellington County(<https://onvegetables.com/2019/07/19/vcr-10/#wellington>)

Simcoe County(<https://onvegetables.com/2019/07/19/vcr-10/#simcoe>)

Durham County(<https://onvegetables.com/2019/07/19/vcr-10/#durham>)

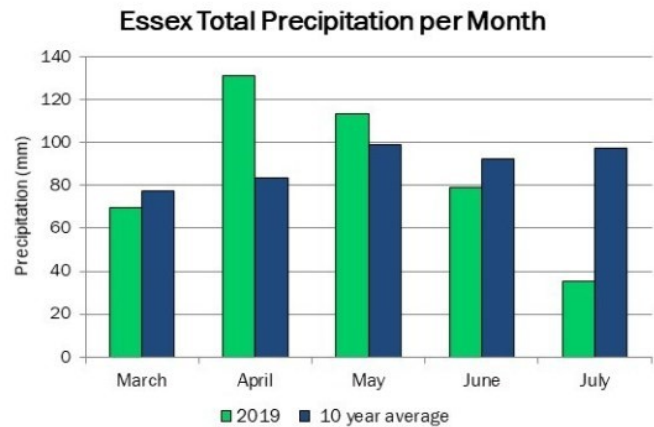
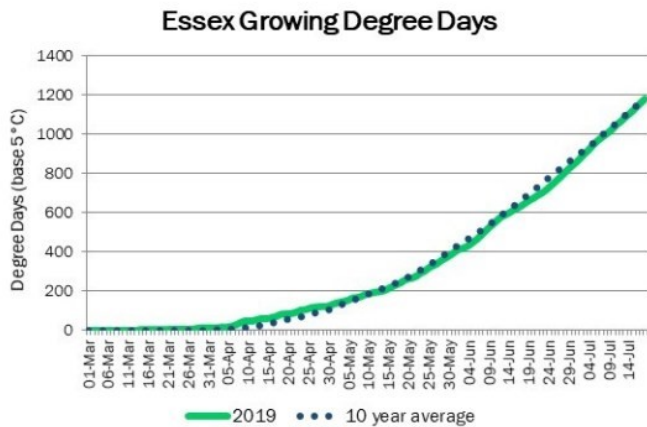
Peterborough(<https://onvegetables.com/2019/07/19/vcr-10/#peterborough>)

Kemptville(<https://onvegetables.com/2019/07/19/vcr-10/#kemptville>)

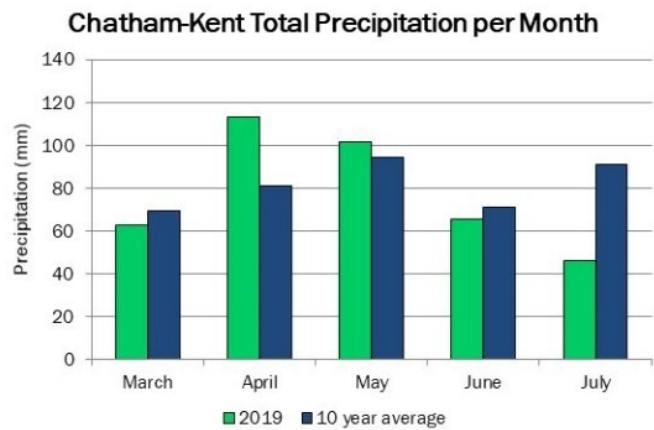
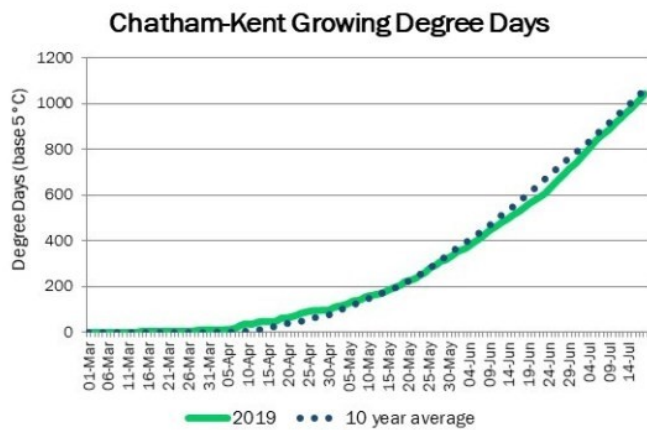
Sudbury(<https://onvegetables.com/2019/07/19/vcr-10/#sudbury>)

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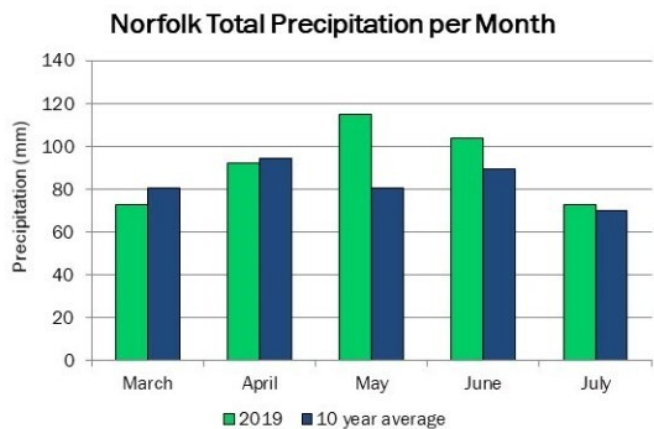
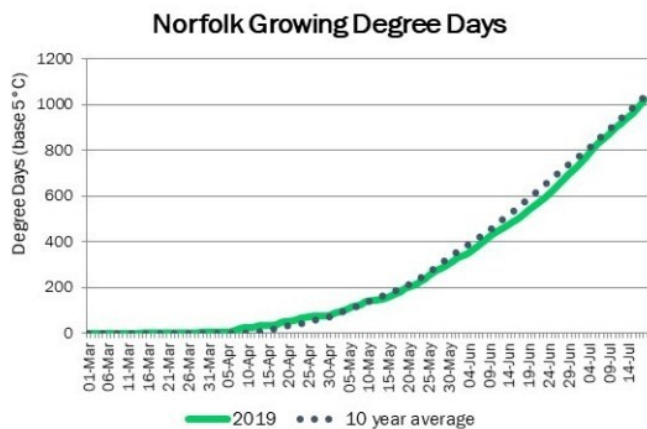
Essex County



Chatham-Kent County



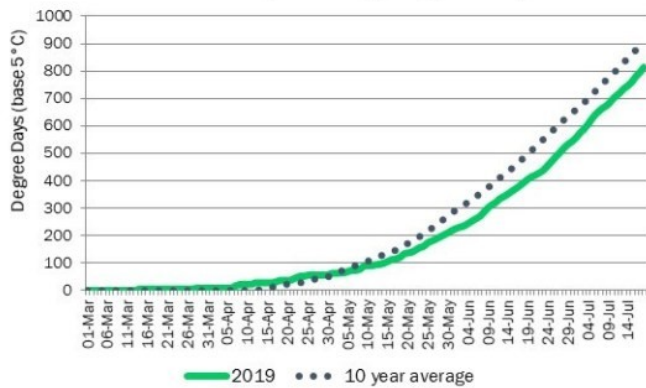
Norfolk County



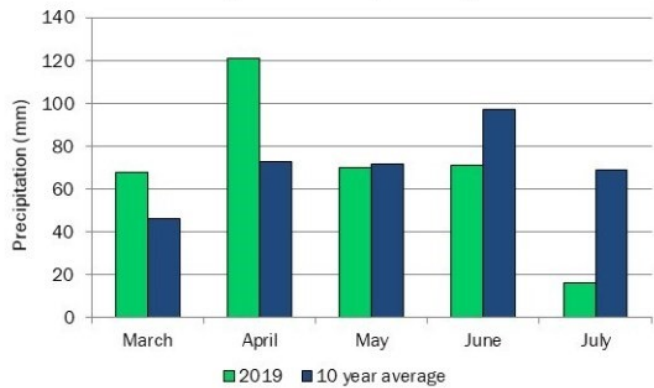
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Huron County

Huron County Growing Degree Days

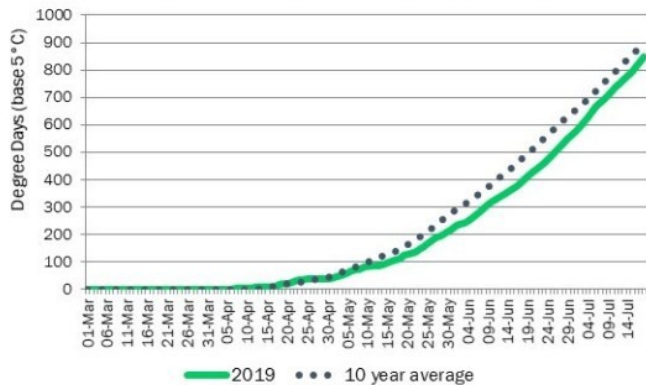


Huron County Total Precipitation per Month

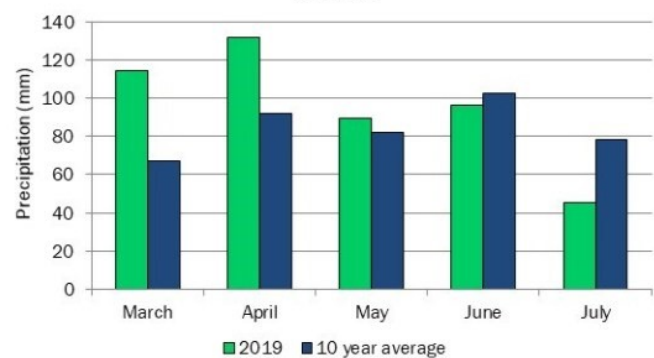


Wellington County

Wellington County Growing Degree Days



Wellington County Total Precipitation per Month

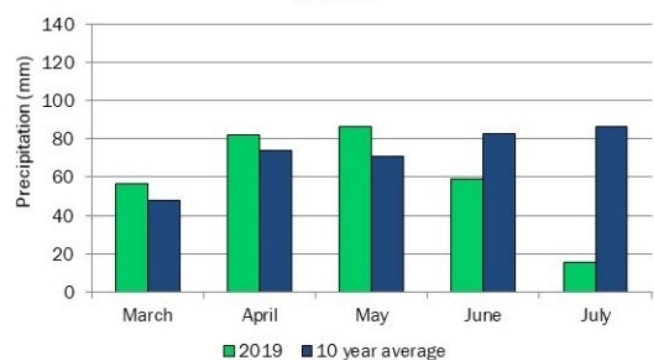


Simcoe County

Simcoe County Growing Degree days



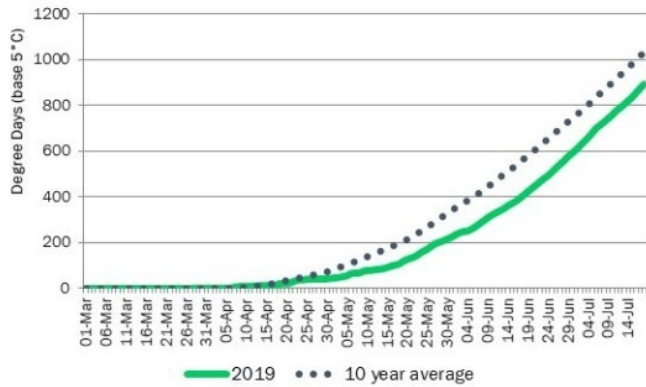
Simcoe County Total Precipitation per Month



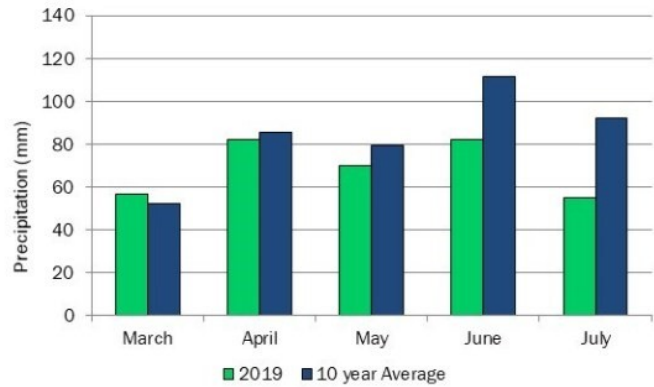
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Durham County

Durham Growing Degree Days

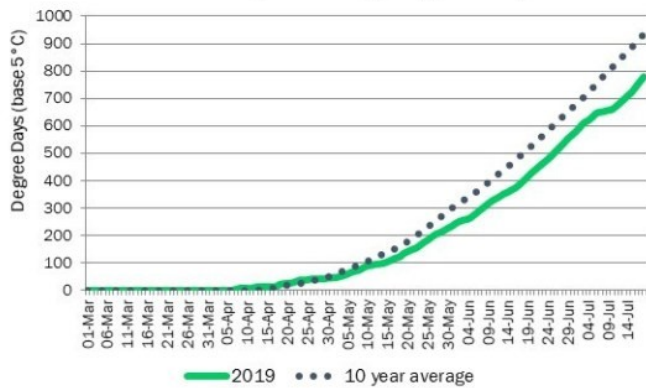


Durham Total Precipitation per Month

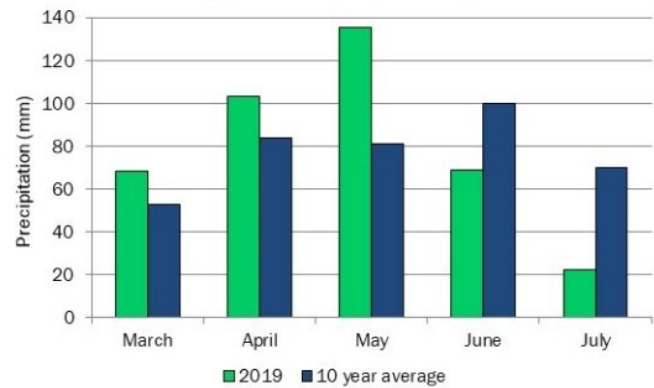


Peterborough

Peterborough Growing Degree Days

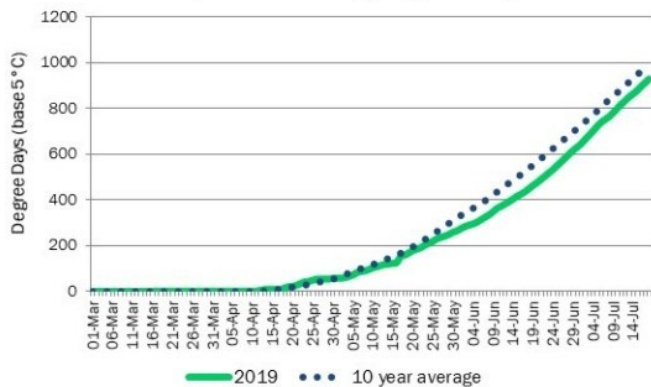


Peterborough Total Precipitation per Month

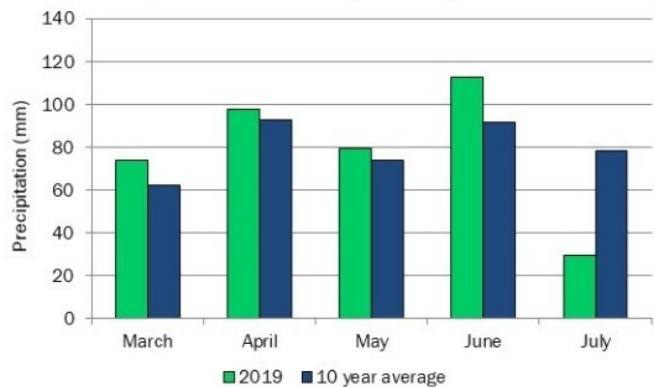


Kemptville

Kemptville Growing Degree Days

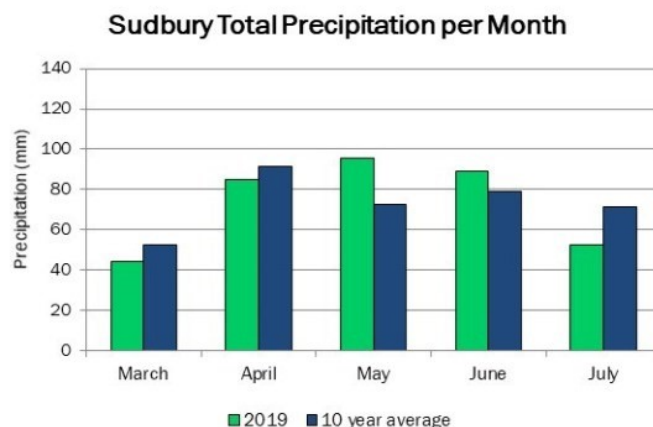
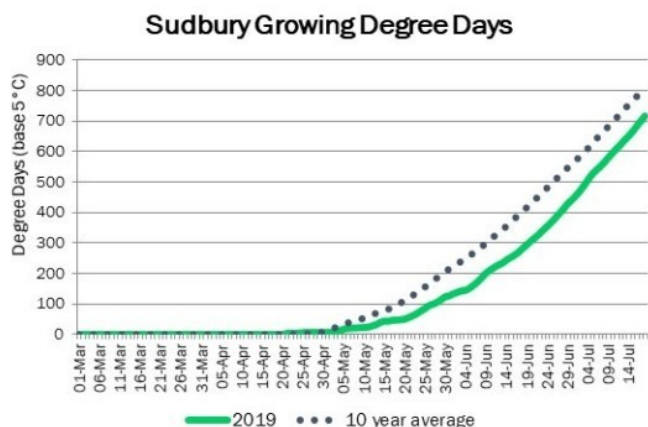


Kemptville Total Precipitation per Month



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Sudbury



Cucurbit Downy Mildew Update – July 20th, 2019



For the week of July 15-19, 2019 there was no downy mildew reported in the Norfolk/Elgin or Kent County areas.

Looking at the IPM pipe website, the disease has now progressed as far north and New Jersey. Over the past week, there have been strong weather fronts originating in the Southern US. In the past, downy mildew often arrives in the great lakes basin after such events.

Click here to visit the IPM pipe website (<http://cdm.ipmpipe.org/>)

The 2019 downy mildew scouting program is funded by the Ontario Cucumber Research Committee. In Norfolk, the scouting services are provided by the Norfolk Fruit Growers Association. In Kent County, the program is managed by Tomecek Ag Services.