



Tuesday, July 14, 2020

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What's Growing ON? – Episode 4



Episode 4: Strawberry Anthracnose & Sweet Potatoes

In this episode, we are joined by Erica Pate, Fruit Crop Specialist for berries to talk weather-based models and how they can be used to manage issues like anthracnose in strawberries. As well, is it a yam or sweet potato? Melanie Filotas, Horticulture IPM Specialist for specialty crops sets the record straight on Ontario sweet potato production. Plus, Ontario crop updates for July 3rd, 2020.

Editor's note: Since the recording of this podcast, cucumber downy mildew has now been detected in Kent County, Ontario.

Listen here: https://www.buzzsprout.com/1111115/4475606-strawberry-anthracnose-sweet-potatoes?client_source=small_player&iframe=true&referrer=https://www.buzzsprout.com/1111115/4475606.js?container_id=buzzsprout-player-4475606&player=small

Music: Aspire by Scott Holmes

Have a question or a topic you would like us to cover? Email us at ONhortcrops@gmail.com

Click here(<https://onvegetables.com/podcast/>) for a list of previous **What's Growing ON?** Episodes

Cucumber Downy Mildew has now been Confirmed in Kent County, Ontario

Andrew C. Wylie, Vegetable Crops Specialist, OMAFRA

July 6th, 2020 – Downy Mildew was identified today in a commercial cucumber field in Kent County, Ontario. The disease had previously been identified in the Great Lakes area, in Michigan on June 22nd(<https://www.canr.msu.edu/news/cucumber-downy-mildew-outbreak-of-2020>). Growers were advised to use a downy mildew specific fungicide program once the disease was found in the Great Lakes area. Risk remains high now that the disease has been confirmed in Ontario despite hot, dry weather.

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- ♦ Cucumber Downy Mildew has now been Confirmed in Kent County, Ontario
- ♦ VCR – Vegetable Crop Report – July 9th, 2020

Cucumber Downy Mildew has now been Confirmed in Kent County, Ontario...con't

As noted in our previous post(<https://onvegetables.com/2020/06/23/cucumber-downy-mildew-confirmed-in-the-great-lakes-region-22-jun-2020/>), trials in Michigan and Ontario have shown that the three most consistently effective downy mildew fungicides are **Orondis Ultra**, **Torrent** and **Zampro**. Where possible, it is important for resistance management for these products to tank mix each application with **chlorothalonil** or **mancozeb**. In addition to tank mixing to delay resistance development, never make back-to-back applications of products from the same chemical family. Follow a 5 to 7-day application interval, and rotation of the three products can be repeated as necessary.

Cucumbers are most at risk, but cantaloupe growers should be aware that downy mildew that infects cucumbers is also a risk. See crop labels for listed cucurbit crops registered on the products below.

If you suspect downy mildew in your field, send for confirmation immediately. Contact either OMAFRA specialist listed below if you have any questions about detection or management.

Table 1. Downy mildew multi-site, broad spectrum fungicides

Common name (FRAC group)	Trade Names	Rate per hectare (Rate per acre)	PHI (days)	Re-entry interval	Max applications
mancozeb (M03)	Dithane Rainshield, Penncozeb 75DF Raincoat Manzate Pro-Stick	1.1-3.25 kg (0.4-1.3 kg)	14	24 hours	-
chlorothalonil (M05)	Bravo ZN Echo	4.8 L (1.9 L)	2	12 hours	2

Table 2. Downy mildew specific fungicides

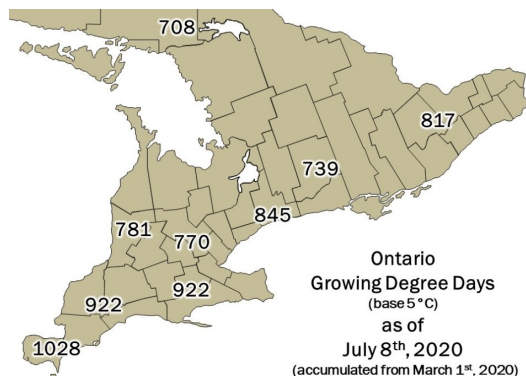
Common name (FRAC group)	Trade Name	Rate per hectare (Rate per acre)	PHI (days)	Re-entry interval	Max applications
cyazofamid (21)	Torrent 400SC	150-200 ml (61-81 ml) + NIS or organosilicone surfactant	1	12 hours	6
ametoctradin (45) + dimethomorph (40)*	Zampro	0.8-1 L (0.3-0.4 L)	1	1 day for hand harvesting, pruning or thinning , 12 hours for other activities	3
oxathiapiprolin (49) + mandipropamid (40)*	Orondis Ultra	0.4-0.6 L (162-243 ml)	0	12 hours	4

*resistance is known to the group 40 fungicides, mandipropamid and dimethomorph. Only the premix partners oxathiapiprolin and ametoctradin in Orondis Ultra and Zampro, respectively, are effective on downy mildew.

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VCR – Vegetable Crop Report – July 9th, 2020

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 – Extreme heat and high temperatures continue this week in all regions. Many regions are also beginning to surpass their GDD 10 year average. Onion maggot and Cabbage maggot have reached the second threshold level in Essex. Seedcorn maggot is at the second threshold in Essex, Chatham-Kent, and Norfolk counties. Degree day data for each region is shown below.

Rainfall – All regions received little to no rain over the past week with the exceptions of Essex county and Sudbury. Sudbury is on track to reach its 10 year average. There is a risk of thunderstorms and possible heavy rain over the weekend in all regions. Precipitation data for each region is shown below.

Crop Updates

VCR – Vegetable Crop Report – July 9th, 2020...con't

Brassica Crops – The dry weather has caused some heat stress that has resulted in wilt in many fields. Not only is wilt caused by extreme temperatures, it can also be caused by cabbage maggots, wireworms, clubroot and other pests/pathogens that are targeting the roots or a combination of several variables. It is a good idea to dig up wilted plants with a shovel and examine roots to see if any pests are present or if the wilt is caused from the heat. Lepidopteran pests are present many fields, mainly imported cabbage worm and diamondback moth. Refer to the newsletter from June 18(<https://onvegetables.com/2020/06/18/2020vcr-8/>) for information on thresholds. Softrot and white mould are active in some areas and Alternaria has been observed in some fields. Keep an eye out for thrips as the hot, dry weather can allow for populations to increase rapidly.

Carrots – It's hot out there. Stands are all over the place. Pre-emerge activity was poor in later seeded carrots due to dry conditions. It's shaping up to be a carrot oil year for weed control. The 'carrot oil' label can be found here: (info(https://prp.hc-sc.gc.ca/lr-re/lbl_detail-eng.php?p_disp_regn=%272076%27&p_regnum=2076)) (label). It might be a good time to think about investing in a band sprayer. Listen to our discussion(<https://onvegetables.com/2020/06/15/whats-growing-on-episode-2/>) on everything carrot weed control while you're out checking irrigation this week (What's Growing ON? Ep. 2 is also available on Spotify(<https://open.spotify.com/episode/2Q3djFQZuyoZq6kJbG6EeJ>) or Apple Podcast(<https://podcasts.apple.com/us/podcast/spotted-wing-drosophila-weed-control-in-carrots/id1517490636?i=1000478110215>))

Cucurbits – Downy Mildew has been found in Ontario: it was found in Kent County on July 6th, (click here to read our post on Cucumber Downy Mildew Confirmed in Kent(<https://onvegetables.com/2020/07/06/cucumber-downy-mildew-has-now-been-confirmed-in-kent-county-ontario/>)) Elgin County on July 7th and Norfolk County on July 7th. There are also confirmed cases in Michigan and New York. Check out our post (Cucumber Downy Mildew Confirmed in Great Lakes Region – June 22, 2020(<https://onvegetables.com/2020/06/23/cucumber-downy-mildew-confirmed-in-the-great-lakes-region-22-jun-2020/>)) for more details including spray recommendations: growers should be using downy mildew specific fungicide programs in the Great Lakes region. Hand-harvest of cucumbers is now underway in all cucumber growing regions.



Figure 1. Downy mildew signs and symptoms on cucumber, July 7th 2020, Norfolk County. CCW from top left, mild symptoms on top leaf surface (top image) compared (arrows) to more easily diagnosed signs and symptoms on underside of same leaf (bottom image); sporangia on the underside of angular lesion bounded by leaf veins, note water droplets; moderate symptoms on top of leaf; angular lesions on bottom of leaf with sporangia forming

Continue to scout for virus and bacterial wilt symptoms: infected plants should be rogued out before aphid populations build, and cucumber beetles continue to be active (Listen to our discussion on What's Growing ON? Ep. 3(<https://onvegetables.com/2020/06/23/whats-growing-on-episode-3/>) for more info on cucumber beetle. Also available through Spotify(<https://open.spotify.com/episode/2VGU3x8aUcdu2CtL14f9z9>) and Apple Podcasts(<https://podcasts.apple.com/us/podcast/cucumber-beetle-grape-set/id1517490636?i=1000479224400>)). Look for spider mite damage starting due to hot dry weather: because this can resemble drought stress, look for bronzing as well as the presence of mites, eggs, and webbing. Thrips have been problematic in several cucurbits during this hot, dry spell including pumpkins and watermelon.



Figure 2. Cucumber beetles, July 3, Kent county; Pumpkins enjoying the heat, July 7, Niagara county.

VCR – Vegetable Crop Report – July 9th, 2020...con't

Garlic – With some early cultivars being harvested and the bulk of the crop being harvested over the next couple of weeks there are a few things to keep in mind; the ideal time to harvest porcelain cultivars (such as Music) is when 50% of the leaves have senesced or turned yellow. Since it takes several days to harvest, many growers start at 40% and by the time the crop is fully harvested it may have reached 70%. Harvesting later you risk the plant lodging which makes it more difficult for bulbs to be picked up by belt harvesters. Leaving the crop in the ground longer is also a risk since moisture can degrade the bulb wrapper before trimming and cleaning. If black plastic has been used for weed control, cutting it open to allow the soil to dry before harvest can also help with harvesting and trimming; but be sure to check the weather forecast as opening up the plastic before a heavy rain could have the opposite of the desired effect. There are black spots on the leaf tips in some fields, this is likely *Alternaria* lesions colonizing the senesced parts of the leaves (picture below). If leek moth counts were high last week, consider targeting the larvae that are now feeding on the crop. While you may not have seen a lot of damage while scaping this year, by targeting these larvae on the crop now you are reducing the amount of overwintering moths and the potential damage to future crops. Products such as Matador, Delegate, Entrust, Successs, XenTari, and Bioprotec are most effective when they make contact with the larvae. Be sure to check the pre-harvest interval (PHI) of these products and ensure that the crop will not be harvested before the PHI has elapsed.



Figure 3. *Alternaria* lesions on garlic leaf tips – July 9, 2020.

Onions – With adequate moisture plants are growing quickly with many direct seeded fields past the six leaf stage and some as far as 8 leaf. *Stemphylium* leaf blight has been observed in most fields. Refer to the newsletter from June 25 (<https://onvegetables.com/2020/06/25/2020vcr-9/>) on information about *Stemphylium*. Purple blotch, pink root and onion smut have been observed. The second generation of onion and seedcorn maggot has reached its threshold in several regions. Keep an eye out for thrips as the hot, dry weather can allow for populations to increase rapidly. 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.



Figure 4. *Stemphylium* lesions starting in what appears to be herbicide injury from earlier in the season – July 7, 2020

Potatoes – The drone of irrigation pumps are ringing in grower's ears. We have started to see heat related disorders show up in fields; re-sprouting, tuber chaining and heat sprouts. Many fields are at a critical time of tuber initiation or bulking. The water demands are high and critical to fulfilling yield potential. Be on the lookout for a flush of potato leafhoppers if you have haying in the area.

Sweet corn – Sweet corn is experiencing moisture stress in many areas and current storms should provide some relief. Lepidopteran and other pest populations continue to build: for detailed information refer to the Great Lakes and Maritime Pest Monitoring Network (<https://ontarioca11.maps.arcgis.com/apps/MapSeries/index.html?appid=df7c044f224e4345825e75d1fa561560>) for updates. Armyworm damage continues to be a concern in sweet corn fields that have not been sprayed, but corn is moving into maturity where this crop is more tolerant of armyworm feeding. Presence of parasitoid eggs on the larvae indicates that parasitic wasps are active and sprays may not be required. Look for European Corn Borer damage starting in Univoltine and overlap regions, as well as Corn Earworm, Western Bean Cutworm, and Corn Leaf Aphids. Common Stalk Borer has also been found so check areas adjacent to grasses.

VCR – Vegetable Crop Report – July 9th, 2020...con't

NOTE: Data as of July 8th, 2020

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*	1237	1129	848	698	503	934	1129	631
Chatham-Kent*	1118	1015	759	619	410	836	1015	555
Norfolk**	1120	1018	751	611	404	831	1018	546
Huron***	948	862	639	506	317	707	862	445
Wellington**	945	853	626	499	317	695	853	440
Simcoe County***	954	864	641	514	334	711	864	455
Durham***	1027	933	693	563	369	764	933	502
Peterborough	919	825	592	462	277	662	825	402
Kemptville***	996	904	667	539	353	737	904	481
Sudbury***	848	775	585	477	311	643	775	426

*- 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/2020/07/09/2020vcr-11/#essex>)

Chatham-Kent County(<https://onvegetables.com/2020/07/09/2020vcr-11/#chatham-kent>)

Norfolk County(<https://onvegetables.com/2020/07/09/2020vcr-11/#norfolk>)

Huron County(<https://onvegetables.com/2020/07/09/2020vcr-11/#huron>)

Wellington County(<https://onvegetables.com/2020/07/09/2020vcr-11/#wellington>)

Simcoe County(<https://onvegetables.com/2020/07/09/2020vcr-11/#simcoe>)

Durham County(<https://onvegetables.com/2020/07/09/2020vcr-11/#durham>)

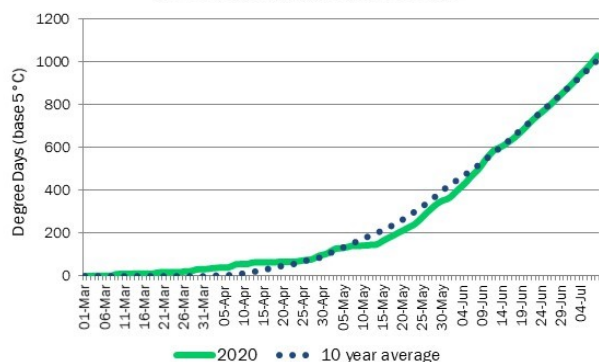
Peterborough(<https://onvegetables.com/2020/07/09/2020vcr-11/#peterborough>)

Kemptville(<https://onvegetables.com/2020/07/09/2020vcr-11/#kemptville>)

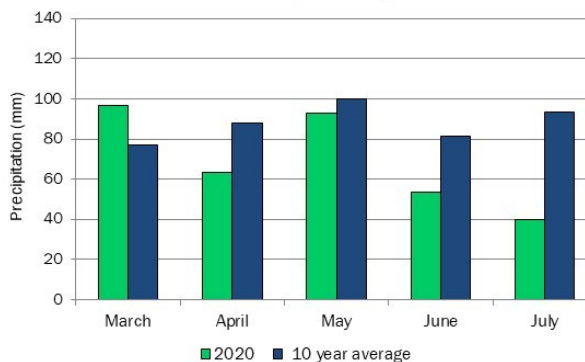
Sudbury(<https://onvegetables.com/2020/07/09/2020vcr-11/#sudbury>)

Essex County

Essex Growing Degree Days



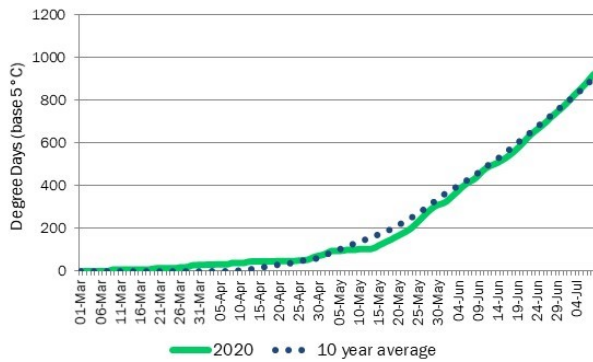
Essex Total Precipitation per Month



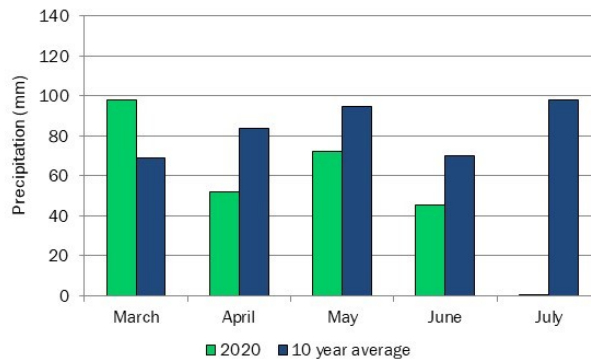
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Chatham-Kent County

Chatham-Kent Growing Degree Days

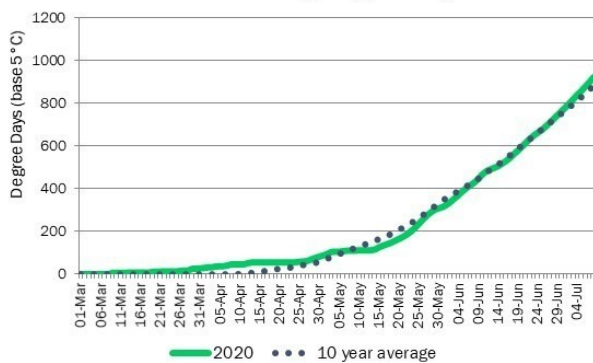


Chatham-Kent Total Precipitation per Month

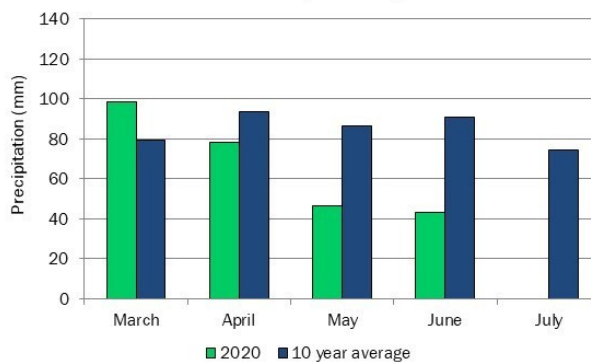


Norfolk County

Norfolk Growing Degree Days

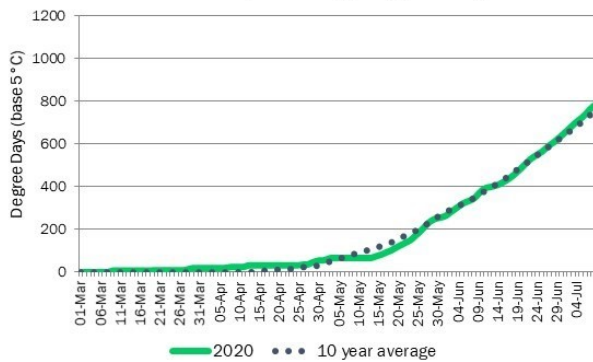


Norfolk Total Precipitation per Month

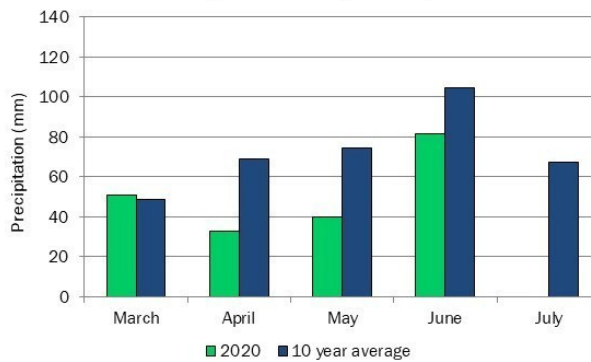


Huron County

Huron County Growing Degree Days

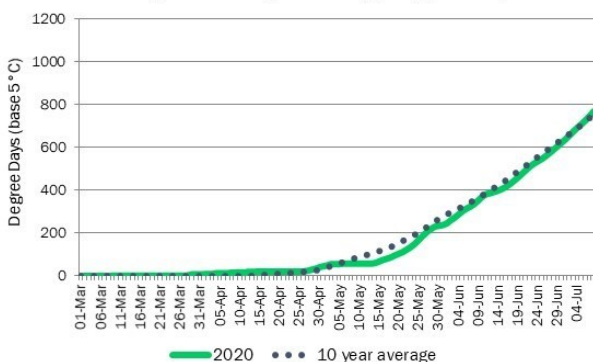


Huron County Total Precipitation per Month

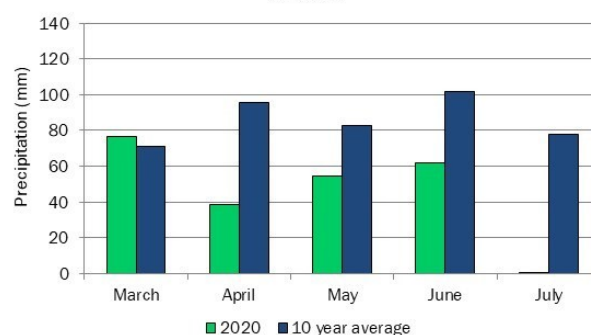


Wellington County

Wellington County Growing Degree Days



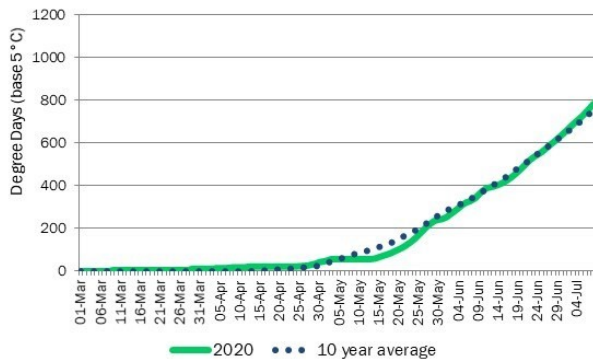
Wellington County Total Precipitation per Month



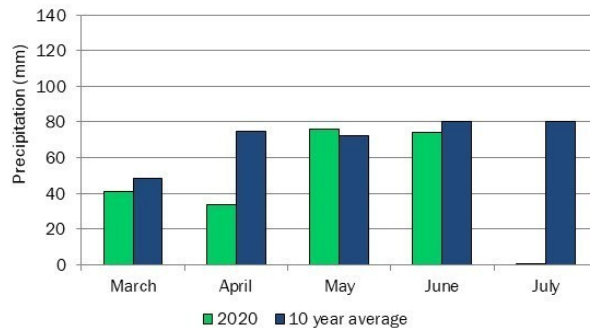
VCR – Vegetable Crop Report – July 9th, 2020...con't

Simcoe County

Simcoe County Growing Degree days

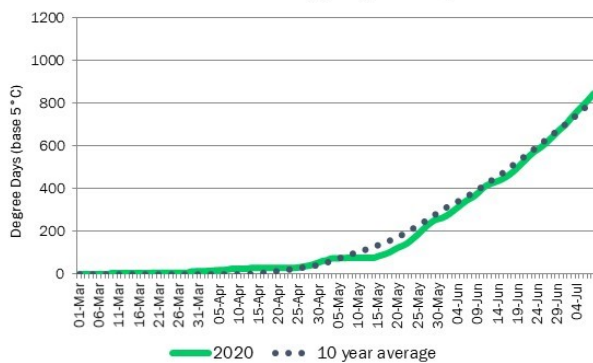


Simcoe County Total Precipitation per Month

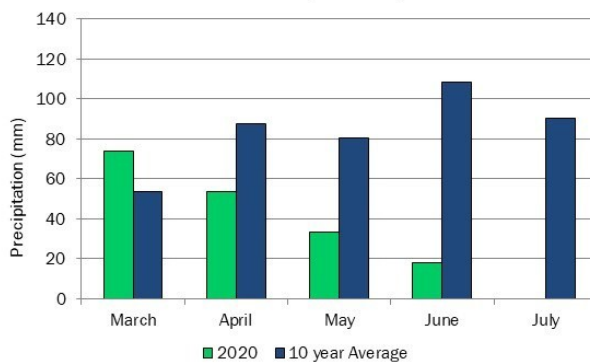


Durham County

Durham Growing Degree Days

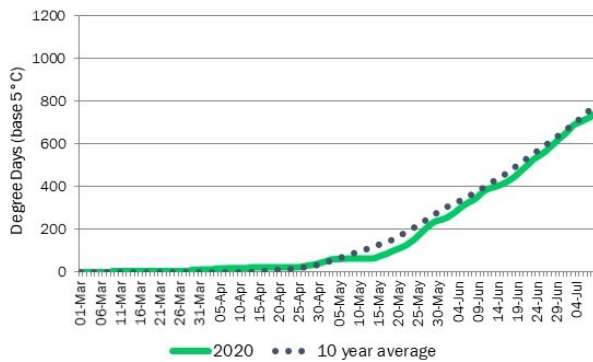


Durham Total Precipitation per Month

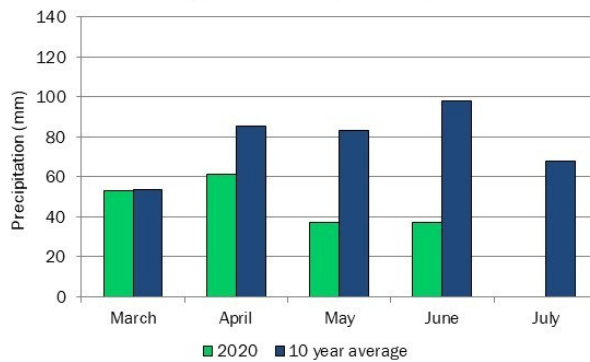


Peterborough

Peterborough Growing Degree Days

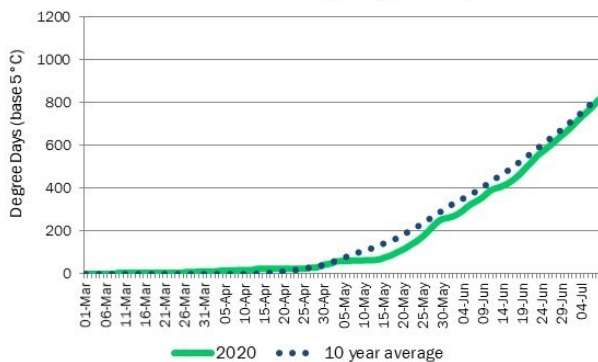


Peterborough Total Precipitation per Month

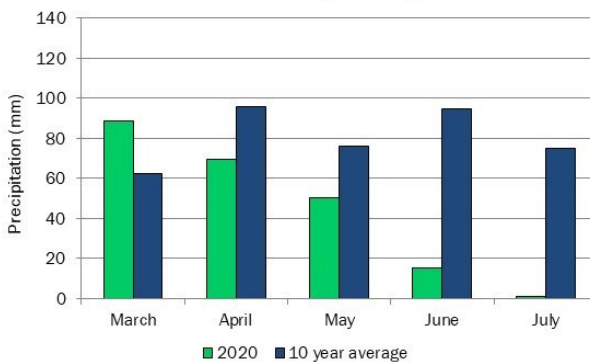


Kemptville

Kemptville Growing Degree Days



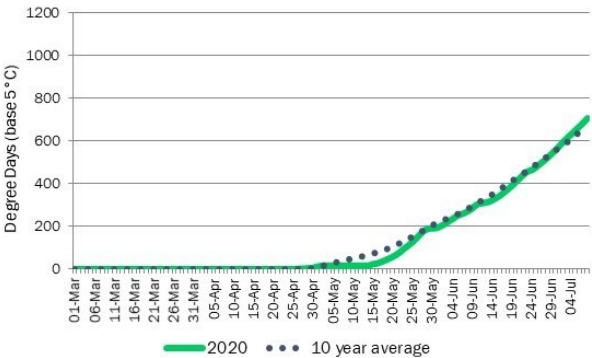
Kemptville Total Precipitation per Month



VCR – Vegetable Crop Report – July 9th, 2020...con't

Sudbury

Sudbury Growing Degree Days



Sudbury Total Precipitation per Month

