



Tuesday, July 07, 2020

### OMAFRA Vegetable Team:

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

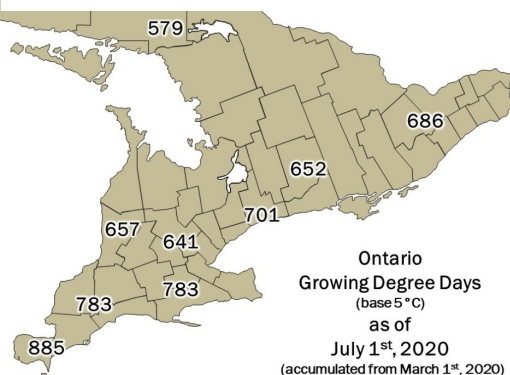
Dennis Van Dyk, Guelph  
519-766-5337  
dennis.vandyk@ontario.ca

Andrew Wylie, Ridgeway  
519-401-5890  
andrew.c.wylie@ontario.ca

Cassandra Russell, Ridgeway  
519-350-7134  
cassandra.russell2@ontario.ca

## VCR – Vegetable Crop Report – July 2nd, 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 are expected throughout the week in all regions. All regions continue following a similar GDD trend to the 10 year average. Onion maggot is at threshold in Sudbury. Seedcorn maggot is at threshold in Huron, Wellington, and Simcoe counties, Peterborough, and Sudbury. Degree day data for each region is shown below.

**Rainfall** – There is a risk of thunderstorms in all regions scattered throughout the week. Sudbury has surpassed its 10 year rainfall average for June. Most other regions lag behind but Durham, Peterborough and Kemptville in particular have received very little rain in comparison to their 10 year averages. Precipitation data for each region is shown below.

### “In This Issue”

- ◆ VCR – Vegetable Crop Report – July 02, 2020
- ◆ Suspect you have herbicide resistant weeds? Participate in a genetic testing sampling project.
- ◆ Bioceres WP Biological Mycoinsecticide label expanded via Minor Use Program for management of whiteflies, aphids and thrips on additional greenhouse-grown crops in Canada
- ◆ GLVPN this Wednesday: Biostimulants

### Crop Updates

**Asparagus** – Continue to scout ferns for insects such as Aphids and Japanese Beetles, as well as fungal disease. Be on the look-out for rust developing, especially on young plantings, which can then move to mature fields.

**Brassica Crops** – Lepidopteran pests continue to be an issue across the province. Eggs laid from the second generation peak of seedcorn maggot is causing damage to small transplants in some areas. Sclerotinia/white mould has been seen in a few fields. The mould tends to start near the ground on plants and as it infects it creates dark, water-soaked areas on the lower leaves near the base at the soil line. As the pathogen progresses you may see white mycelial growth. These water-soaked lesions enlarge and can cause the leaves to wilt. Infected cabbage heads will retain their shape but will be filled with a soft, watery rot. If conditions are favourable for the Sclerotinia, you will see the white mycelial growth followed by small, black spots/spores that look like mouse droppings within the fluffy white growth. These black spores can overwinter in the soil for up to 8 years and the best preventative management strategy is to rotate with non-susceptible crops such as beets, onions, spinach, corn, cereals or grasses. It is also helpful to decrease the plant density of the field to allow for adequate air circulation. Allow the top inch of soil to dry out between irrigation events and incorporate residue from harvested areas as deep as possible. Fontelis, Sercadis, Serenade Opti and Contans WG are registered for suppression.

## VCR – Vegetable Crop Report – July 2nd, 2020...con't

**Beans and Peas** – Insect pressure is building including aphids which can spread viruses. Fields should be scouted for virus symptoms such as mosaic patterned leaves, leaf curling, dwarfing, and irregular pods. Watch for hopper burn from the Potato Leafhopper, as well as the bacterial Common Blight starting in areas that had heavy rain leading to soil splashing before the current dry spell.

**Carrots** – Weed control is the topic of the day as pigweed takes advantage of this stretch of warmer weather. If any weeds are escaping control of your herbicides take advantage of the free testing available (see article earlier this week (<https://onvegetables.com/2020/06/29/herbicide-resistant-weeds/>)). Also check out the recent podcast (<https://onvegetables.com/2020/06/15/whats-growing-on-episode-2/>) on carrot weed control (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>)). Carrot weevil activity is drawing to a close

**Cucurbits** – Downy Mildew has now been found in Southeast Michigan, following from last week's confirmed case in Southwest Michigan. Check out our post on cucurbit downy mildew (<https://onvegetables.com/2020/06/23/cucumber-downy-mildew-confirmed-in-the-great-lakes-region-22-jun-2020/>) in the Great Lakes region for more details. We are continuing to monitor for the arrival of both downy mildew spores and downy mildew symptoms in Ontario and will provide updates if it is found. Growers should be using downy mildew specific fungicide programs in the Great Lakes region. Scout for virus symptoms: infected plants should be rogued out before aphid populations build. 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.



Processing cucumbers in flower – June 30, 2020

**Garlic** – Harvest is quickly approaching and there are a few things to consider. Depending on how quickly your soil dries out, avoid irrigating too close to harvest as soil stuck to the bulb will make it more difficult to achieve a clean wrapper. If black plastic has been used for weed control, cutting it open to allow the soil to dry before harvest can also help with wrapper cleaning. 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.

**Onions** – The warm weather has created favourable conditions for Stemphylium leaf blight. For the first application, Sercadis (group 7) or a product containing mancozeb (group M3) may provide protection. Mancozeb products such as Manzate Pro-Stick, Dithane Rainshield, and Penncozeb 75 DF Raincoat are registered for Botrytis and Manzate Pro-Stick is registered for Botrytis and Alternaria/Purple Blotch. Avoid applying products from the same chemical group one after the other. Research has shown that there is very high resistance in Stemphylium to one of the fungicides in Quadris Top (group 11/3) and high resistance to one of the fungicides in Luna Tranquility (group 7/9). The pressure of thrips is low but will increase dramatically as we see more hot and dry weather. 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 1 thrips/leaf, Movento 240 SC could be followed by two applications of Agri-Mek (group 6), and then two applications of Delegate (group 5) and two applications Exirel (group 28). 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.

**Peppers** – Peppers are holding up well with the heat and some of the earlier plantings are just starting to flower. Pepper weevil pheromone traps have been put up across Chatham and Essex counties and no weevils have been caught so far. To sign up for weekly pepper weevil email updates, please send an email to [Cassandra.russell2@ontario.ca](mailto:Cassandra.russell2@ontario.ca).

## VCR – Vegetable Crop Report – July 2nd, 2020...con't

**Potatoes** – potatoes have really popped the last couple weeks and many fields are starting to flower. This is a critical time in development and adequate water is important. See this factsheet for more information about potato water requirements (<http://www.omafra.gov.on.ca/english/crops/facts/dry-potatoes.htm>). With alot of first cuts around the province be on the lookout for a flush of leafhoppers. We've seen high numbers in some fields but no hopperburn symptoms reported yet. We've seen some air pollution injury in some areas as well. Ensure any damage is protected with a fungicide.

**Sweet corn** – Sweet corn harvest is approaching in a few weeks. Lepidopteran and other pest populations are building. Armyworm 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. Check for the presence of parasitoid eggs on the larvae, this 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.

**Tomatoes** – Most tomatoes are just beginning to flower and some early plantings have developed small fruits. Insect pressure overall has been low, but hot/dry conditions are conducive for rapid insect development. Corn earworm (tomato fruitworm) have been caught in low numbers in traps in southeast Michigan and could make their way to Ontario soon. Although not usually of high economic concern in tomatoes, female moths prefer to lay eggs on flowering tomatoes especially if corn is not at an ideal stage. If you have corn earworm pheromone traps in your area, consider adding them to the Great Lakes and Maritimes Pest Monitoring Network Dashboard(<https://ontarioca11.maps.arcgis.com/apps/MapSeries/index.html?appid=df7c044f224e4345825e75d1fa561560>) to track flights of lepidopteran pests.

**NOTE: Data as of July 1st, 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*	1081	979	719	584	410	799	979	523
Chatham-Kent*	964	868	634	508	322	704	868	450
Norfolk**	967	872	626	500	317	699	872	442
Huron***	810	731	528	410	244	590	731	355
Wellington**	802	718	511	398	240	574	718	347
Simcoe County***	811	729	527	413	257	590	729	361
Durham***	869	782	563	447	277	627	782	393
Peterborough	818	731	519	404	242	582	731	350
Kemptville***	851	767	551	437	275	614	767	385
Sudbury***	705	640	470	376	234	521	640	332

\*- 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/2020/07/02/2020vcr-10/#essex>)

Chatham-Kent County(<https://onvegetables.com/2020/07/02/2020vcr-10/#chatham-kent>)

Norfolk County(<https://onvegetables.com/2020/07/02/2020vcr-10/#norfolk>)

Huron County(<https://onvegetables.com/2020/07/02/2020vcr-10/#huron>)

Wellington County(<https://onvegetables.com/2020/07/02/2020vcr-10/#wellington>)

Simcoe County(<https://onvegetables.com/2020/07/02/2020vcr-10/#simcoe>)

Durham County(<https://onvegetables.com/2020/07/02/2020vcr-10/#durham>)

Peterborough(<https://onvegetables.com/2020/07/02/2020vcr-10/#peterborough>)

Kemptville(<https://onvegetables.com/2020/07/02/2020vcr-10/#kemptville>)

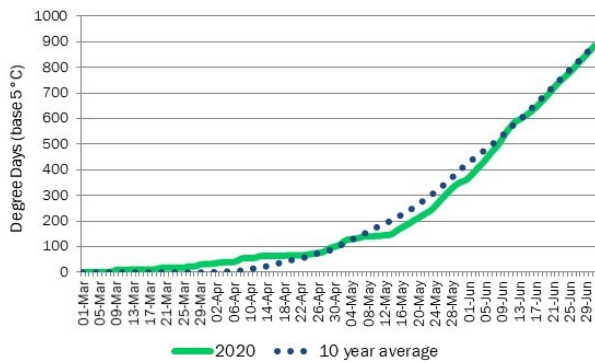
Sudbury(<https://onvegetables.com/2020/07/02/2020vcr-10/#sudbury>)

July 07, 2020

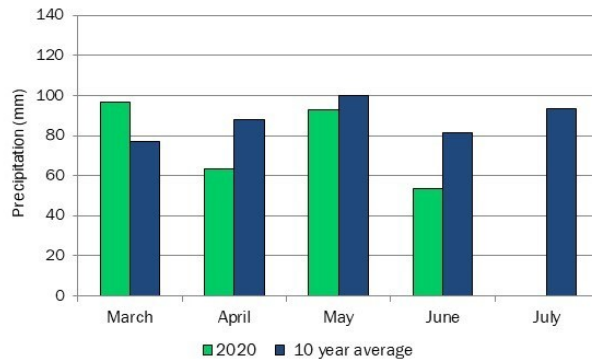
# VCR – Vegetable Crop Report – July 2nd, 2020...con't

## Essex County

Essex Growing Degree Days

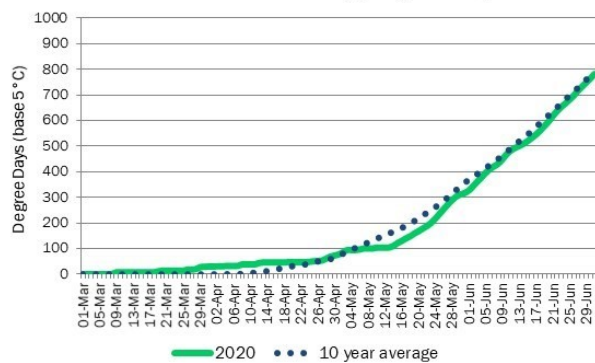


Essex Total Precipitation per Month

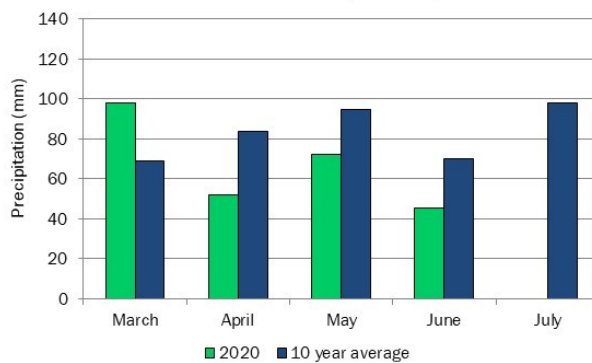


## Chatham-Kent County

Chatham-Kent Growing Degree Days

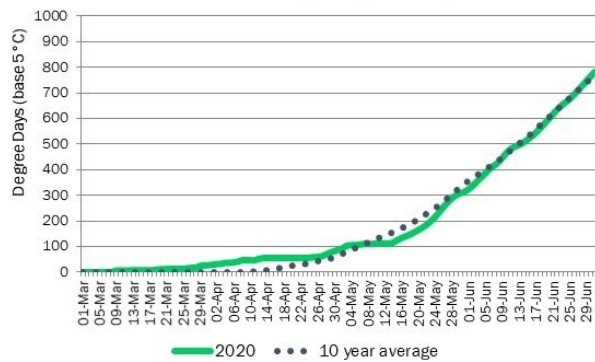


Chatham-Kent Total Precipitation per Month

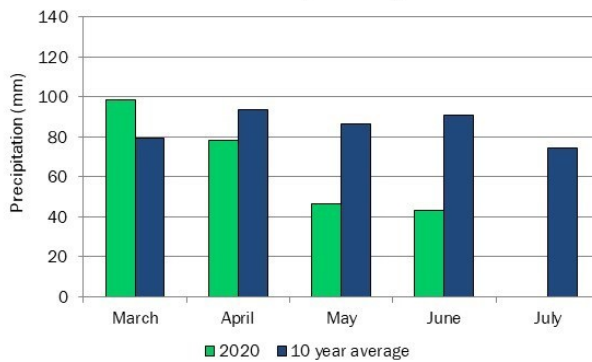


## Norfolk County

Norfolk Growing Degree Days

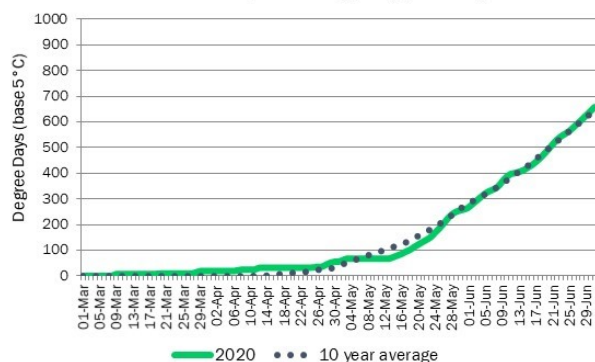


Norfolk Total Precipitation per Month

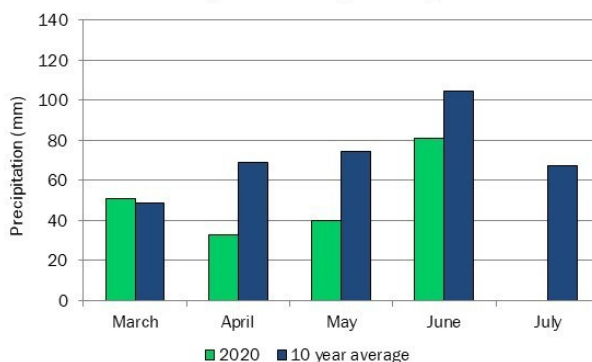


## Huron County

Huron County Growing Degree Days



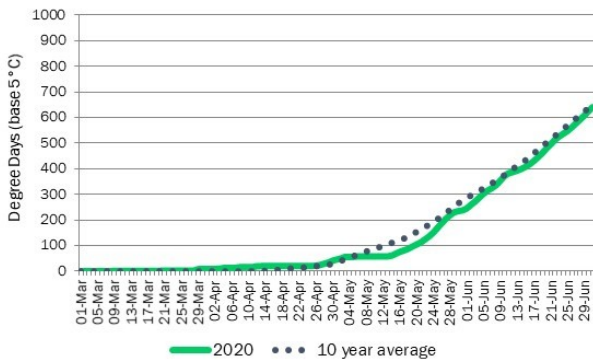
Huron County Total Precipitation per Month



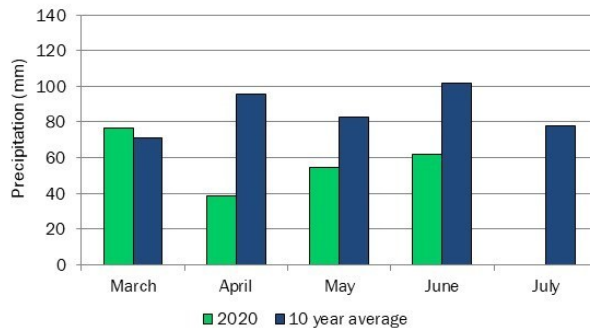
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## Wellington County

Wellington County Growing Degree Days

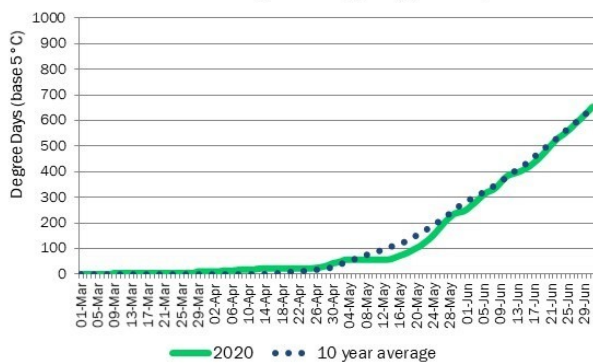


Wellington County Total Precipitation per Month

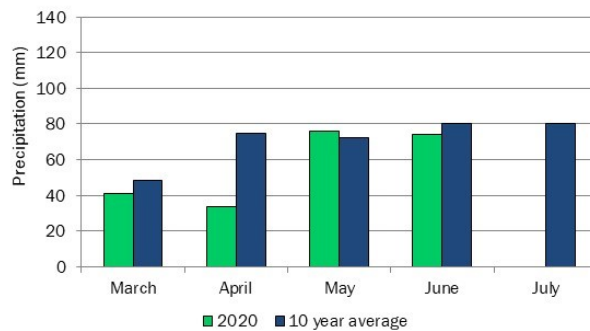


## Simcoe County

Simcoe County Growing Degree Days

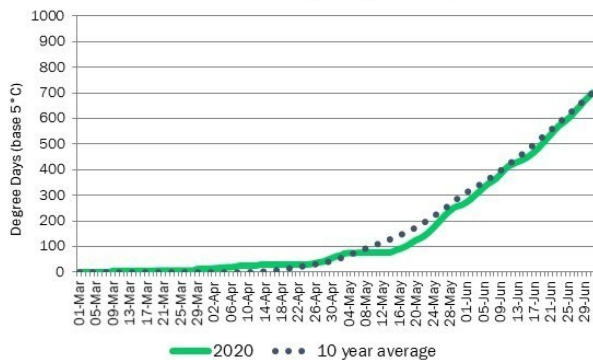


Simcoe County Total Precipitation per Month

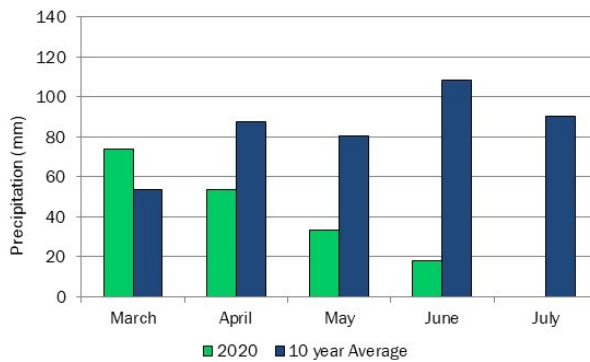


## Durham County

Durham Growing Degree Days

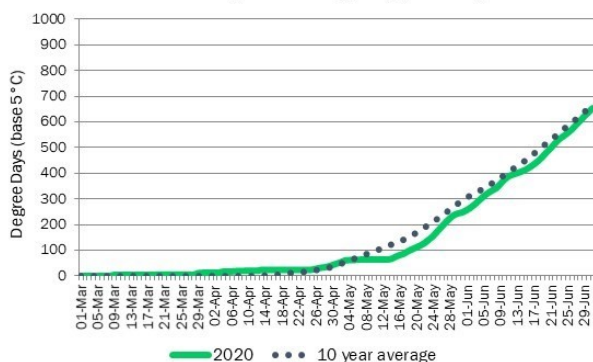


Durham Total Precipitation per Month

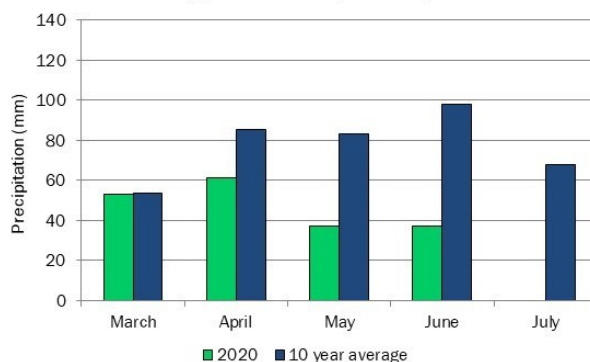


## Peterborough

Peterborough Growing Degree Days



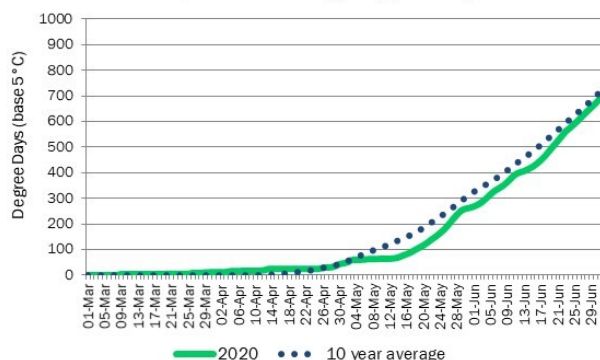
Peterborough Total Precipitation per Month



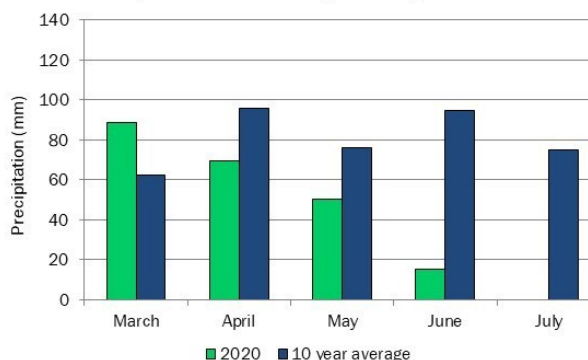
# VCR – Vegetable Crop Report – July 2nd, 2020...con't

## Kemptville

Kemptville Growing Degree Days

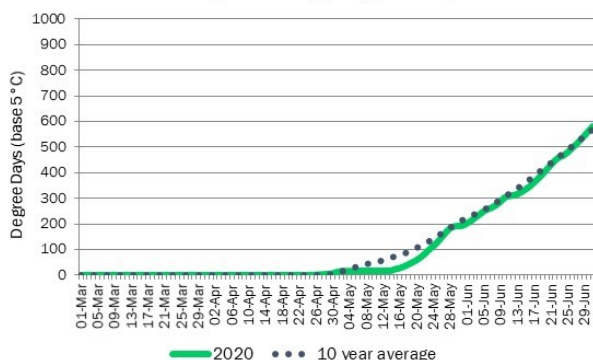


Kemptville Total Precipitation per Month

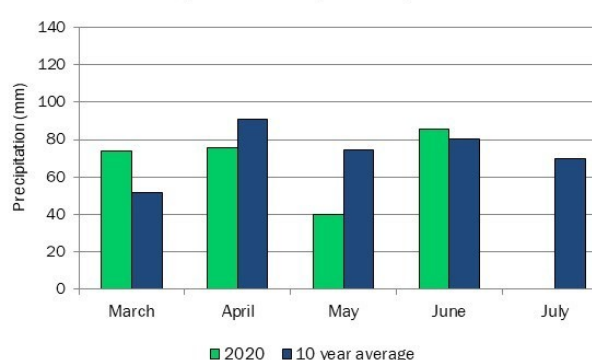


## Sudbury

Sudbury Growing Degree Days



Sudbury Total Precipitation per Month



## Suspect you have herbicide resistant weeds? Participate in a genetic testing sampling project.

**Kristen Obeid, Weed Management Specialist–Horticulture, OMAFRA**



Do you suspect that you have herbicide resistant weeds on your farm? If so, why not get them tested for free through a genetic testing sample project. So far there are 16 (5 more in progress) genetic quick tests to assist in identifying herbicide resistance in 12 weed species. Some of these tests were implemented from scientific literature. Two are new discoveries. These tests deliver a diagnostic and a recommendation to the grower within the same growing season. Traditional resistance testing in the greenhouse can take from three months to a year to get results back to growers. Now, leaf tissue instead of seed is collected. DNA is extracted from the leaf tissue to determine if there is a

change in the sequencing resulting in a mutation conferring resistance. Tests have also been developed to differentiate between *Brassica* and *Amaranthus* (pigweed) species. Tests differentiating pigweed species have been instrumental in confirming new cases of waterhemp in Ontario (25), Manitoba (7) and Quebec (9). Once confirmed, the waterhemp was tested for Groups 2, 5, 9 and 14 resistances.

# Suspect you have herbicide resistant weeds? Participate in a genetic testing sampling project...con't

## Genetic Tests Available

Weed Species	Herbicide Group	Resistance & Tests
Large crabgrass	1	Target-site: ACCase gene amplification
Common chickweed	2	Target-site (P197Q & unpublished)
Common ragweed	2	Target-site (W574L)
Eastern black nightshade	2	Target-site (A205V)
Green pigweed	2	Target-site (S653N & W574L)
Giant foxtail	2	Target-site (unpublished)
Redroot pigweed	2	Target-site (S653N & W574L)
Waterhemp	2	Target-site (S653N & W574L)
Common ragweed	5&7	Target-site (V219I)
Green pigweed	5&7	Target-site (A251V, S264G**, V219I & F274L)
Lamb's-quarters	5	Target-site (S264G)
Redroot pigweed	5&7	Target-site (A251V, S264G**, V219I & F274L)
Waterhemp	5&7	Target-site (A251V, S264G**, V219I & F274L)
Brassica spp.	9	Presence of transgene
Canada fleabane	9	Target-site (P106S)
Waterhemp	9	Target-site: EPSPS gene amplification
Waterhemp	14	Target-site ( $\Delta$ G210 in PPX2L)
Amaranthus spp.	–	Species identification
Brassica spp.	–	Species identification

*\*Several of these tests were developed by other researchers (Francois Tardif) and reproduced from the scientific literature.*

*\*\*S264G mutation only induces resistance to Group 5 herbicides, not Group 7*

If you suspect you have any of the above herbicide resistant weeds and would like to get your fields tested for free (through project funding) contact Kristen Obeid for sample collection kits and sampling protocols:

[kristen.obeid@ontario.ca](mailto:kristen.obeid@ontario.ca) or 519-965-0107

**DUE TO COVID-19 we have a new process this year.**

Samples need to be sent directly to the lab and a submission form filled in on-line at: <http://www.harvestgenomics.ca>

## Harvest Genomics

c/o Chris Grainger, 5420 Highway 6 N, Orchard Park, Guelph, Ontario, N1H 6J2, 519-635-4470

For all samples, please send an email to myself and Chris Grainger to let us know that a sample is being sent to the lab. Please document the tracking number of the package in the email.

If you would like to drop off a sample to the lab you must call ahead and let Chris Grainger know it is coming.

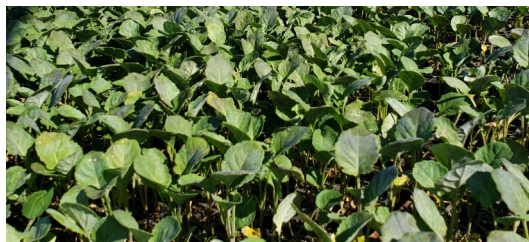
## Collaborators:

- Ontario Ministry of Agriculture Food and Rural Affairs: Kristen Obeid and Mike Cowbrough
- Saint-Jean-sur-Richelieu Research and Development Centre: Dr. Marie Josée Simard and Dr. Martin Laforest
- Harrow Research and Development Centre: Dr. Robert Nurse and Dr. Eric Page
- Pest Management Centre: Dr. Cezarina Kora
- Ministère de l'Agriculture, des Pêcheries et de l'Alimentation du Québec (MAPAQ) Pest Diagnostic Lab: David Miville
- University of Guelph: Dr. Darren Robinson and Dr. Peter Sikkema
- Since September 2019: Ontario Fruit and Vegetable Growers Association, Ontario Apple Growers, Fresh Vegetable Growers of Ontario, Ontario Processing Vegetable Growers, Bayer, FMC and Syngenta Canada.

This project was partly funded through the Pest Management Centre's Pesticide Risk Reduction Program(<https://www.agr.gc.ca/eng/scientific-collaboration-and-research-in-agriculture/agriculture-and-agri-food-research-centres-and-collections/ontario/pest-management-centre/pesticide-risk-reduction-at-the-pest-management-centre/?id=1288277891464>).

# Bioceres WP Biological Mycoinsecticide label expanded via Minor Use Program for management of whiteflies, aphids and thrips on additional greenhouse-grown crops in Canada

J. Chaput, Minor Use Coordinator, OMAFRA



The Pest Management Regulatory Agency (PMRA) recently announced the approval of a minor use label expansion registration for Bioceres WP Biological Mycoinsecticide for reduction in numbers of whiteflies, aphids and thrips on greenhouse-grown eggplant, lettuce, mint, onion and Brassica transplants, Asian water spinach and greenhouse-grown strawberries in Canada. Bioceres WP Biological Mycoinsecticide was already labeled for use on a variety of crops in Canada for management of these pests.

These minor use projects were submitted by Ontario and Quebec as a result of minor use priorities established by growers and extension personnel.

The following is provided as an abbreviated, general outline only. Users should be making pest management decisions within a robust integrated pest management program and should consult the complete label before using Bioceres WP Biological Mycoinsecticide.

Crop(s)	Target	Rate (g/L)	Application Information	PHI (days)
GH lettuce, GH eggplant, GH mint, GH onion transplants, GH Brassica transplants, GH Asian water spinach, GH Strawberries	Reduction in numbers of whiteflies, aphids and thrips	2-4	Use spray volume sufficient to cover foliage infested with insect pests. Crop size and spray equipment will determine spray volume needed. Depending on crop treated 500 to 1000 L of spray volume will typically be required for 1 ha. Reapply at 7 day intervals or at 3 – 5 day intervals if pest pressure is high.	0

Do not apply or allow drift of Bioceres WP Biological Mycoinsecticide to other crops or non-target areas. Bioceres WP Biological Mycoinsecticide is toxic to bees exposed to direct treatment or drift and may be toxic to some beneficial insects. Do not contaminate off-target areas or aquatic habitats when spraying or when cleaning and rinsing spray equipment or containers.

Follow all other precautions, restrictions and directions for use on the Bioceres WP Biological Mycoinsecticide label carefully.

For a copy of the new minor use label contact your local crop specialist, regional supply outlet or visit the PMRA label site: <https://www.canada.ca/en/health-canada/services/consumer-product-safety/pesticides-pest-management/registrants-applicants/tools/pesticide-label-search.html>

## GLVPN this Wednesday: Biostimulants

# GLVPN

GREAT LAKES VEGETABLE PRODUCER'S NETWORK

Interested in biostimulants to help mitigate crop stress and boost the plant health of your crop? Both organic and conventional growers will be interested in our chat about biostimulant products: What they are, what they do, and what they can do to help your crop get through this heat and drought.

Call in at (1 647-374-4685) or join the broadcast here: [bit.ly/glvpnlive](https://bit.ly/glvpnlive)

When: every Wednesday @ 12:30

Where: <https://www.glveg.net/listen>

July 07, 2020