



Tuesday, June 04, 2019

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## "In This Issue"

- ♦ VCR – Vegetable Crop Report – May 29, 2019
- ♦ Is Phytophthora capsici Causing your Tomato Fruit Rot?

## VCR – Vegetable Crop Report – May 29, 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. Continue Reading VCR – Vegetable Crop Report – May 29, 2019

**Temperature** – The cool wet spring has continued to affect temperature and degree day accumulation in many of the growing regions. Sudbury has accumulated just over half of the growing degree days compared to its 10 year average, while Essex, Norfolk, Durham County, and Kemptville are still marginally behind their 10 year averages. Recent warm weather in the past week has brought Chatham on par with its 10 year average, while Huron County, Wellington, Simcoe County and the Peterborough regions have exceeded their 10-year temperature averages at this point. While some regions are now generally receiving average temperatures, the lack of sun, and late planting dates has slowed the growth and development of many crops in most planted areas.

**Rainfall** – The May rainfall for almost all counties is now average to above-average with a couple days yet to go, matching March and April when most regions also exceeded 10-year rainfall averages. Consistent rainfall every few days combined with a lack of drying conditions (no sun/minimal wind) has generally kept fields saturated. Precipitation levels shown in the charts below for 2019 show the precipitation up to May 28th compared to the total monthly average of the previous 10 years. Less frequent rainfall and warmer temperatures this week has allowed some fields to dry, giving some growers the opportunity to enter field to begin planting, however, seeding is still delayed and/or just occurring in many regions.

## Crop Updates

**Brassica Crops** – Transplants are still being planted in many areas. Flea beetles have been found in some fields. The degree day threshold for cabbage maggot emergence will likely be reached in Essex and Chatham-Kent over the next week.

**Carrots** – The cool, wet field conditions are making it difficult to get carrots into the ground. Carrots are a cool season crop so fields that did get seeded are looking OK. The earliest planted fields are progressing nicely. Be mindful of Pythium issues in these conditions which can infect and disrupt taproot establishment. Consider an in-furrow or drench fungicide application if you don't have any resistance issues in your fields.

## VCR – Vegetable Crop Report – May 29, 2019...con't

**Celery** – Transplanting is still underway in many areas across the province and insect pressure is low. The threshold for aster leafhopper and tarnished plant bug has been reached in Essex and Chatham-Kent and will be reached in Norfolk and Kemptville over the next few days.

**Garlic** – Garlic plants are behind across most counties of Southwestern Ontario. Trap counts for leek moth have been sporadic and low. Seedcorn or onion maggot larvae has been identified to be the cause of wilting in a few fields.

**Onions** – Most acres of direct seeded onions have been planted across the province with the earliest seeded onions at the 1st or 2nd leaf stage. The first generation of onion and seedcorn maggot flies are active in most areas except for Sudbury and further North. Check for insect pressure by digging up wilted/stunted plants and scout for maggots or feeding damage.

**Peppers** – Planting began earlier this week and is about 5-7 days behind schedule

**Potatoes** – Potato planting continues to be a slog. Reminder for the remaining acres going into cool/wet ground: if you're using cut seed, allow it to suberize/heal before planting, especially if you're also using a liquid seed treatment. Be on the lookout for emergence and seed piece issues. Some of the early season disease issues that might be more likely are Rhizoctonia, blackleg and any potential seedborne late blight.

### Pest Degree Day Forecasting

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

Essex County(<https://onvegetables.com/2019/05/29/vcr-3/#essex>)

Chatham-Kent County(<https://onvegetables.com/2019/05/29/vcr-3/#chatham-kent>)

Norfolk County(<https://onvegetables.com/2019/05/29/vcr-3/#norfolk>)

Huron County(<https://onvegetables.com/2019/05/29/vcr-3/#huron>)

Wellington County(<https://onvegetables.com/2019/05/29/vcr-3/#wellington>)

Simcoe County(<https://onvegetables.com/2019/05/29/vcr-3/#simcoe>)

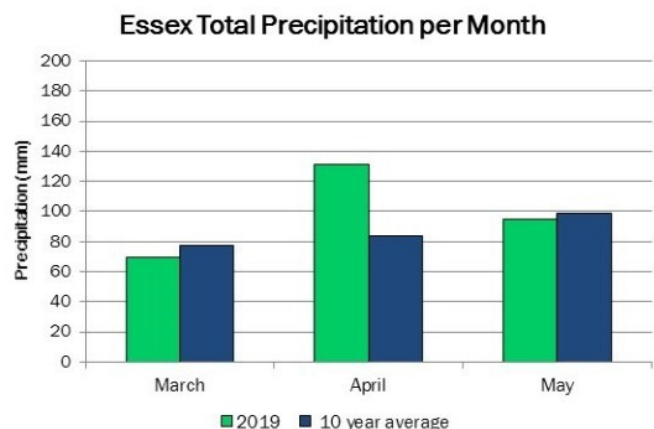
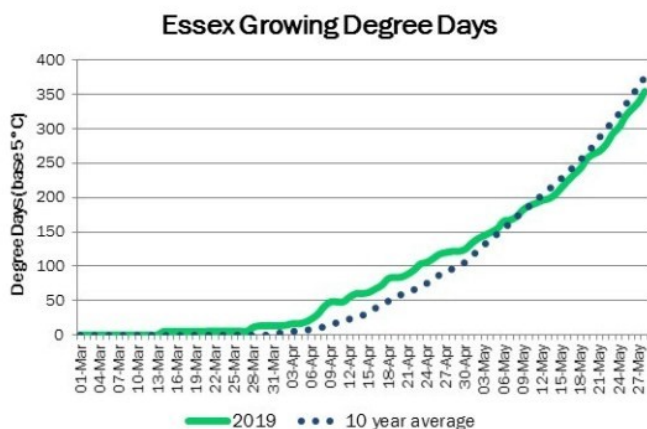
Durham County(<https://onvegetables.com/2019/05/29/vcr-3/#durham>)

Peterborough(<https://onvegetables.com/2019/05/29/vcr-3/#peterborough>)

Kemptville(<https://onvegetables.com/2019/05/29/vcr-3/#kemptville>)

Sudbury(<https://onvegetables.com/2019/05/29/vcr-3/#sudbury>)

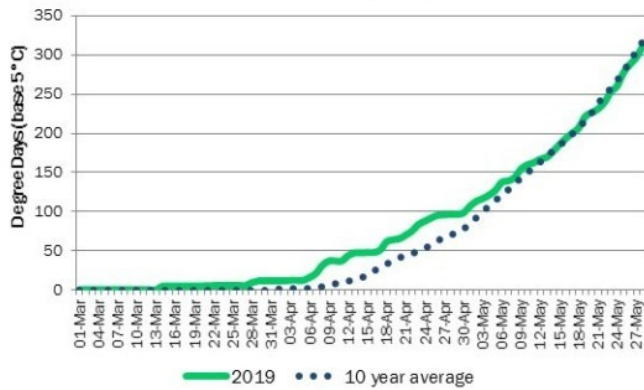
### Essex County



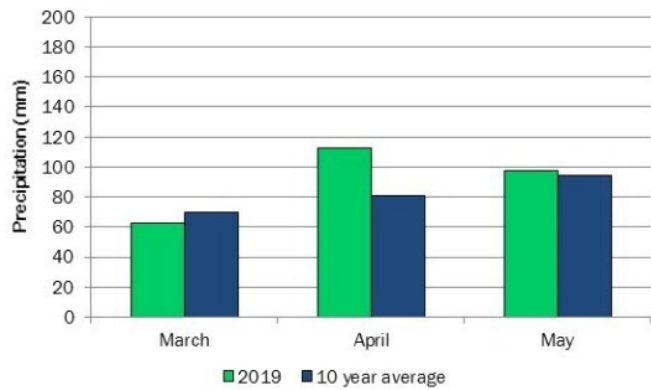
# VCR – Vegetable Crop Report – May 29, 2019...con't

## Chatham-Kent County

### Chatham-Kent Growing Degree Days

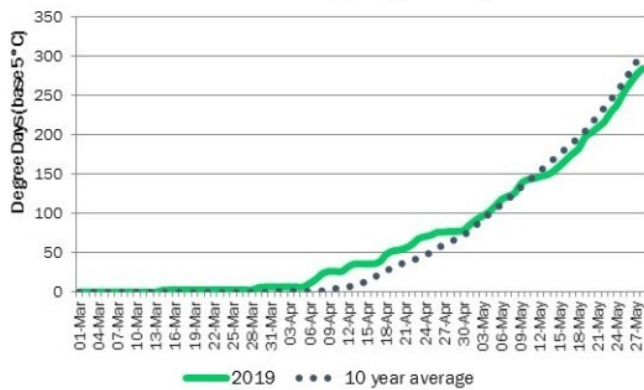


### Chatham-Kent Total Precipitation per Month

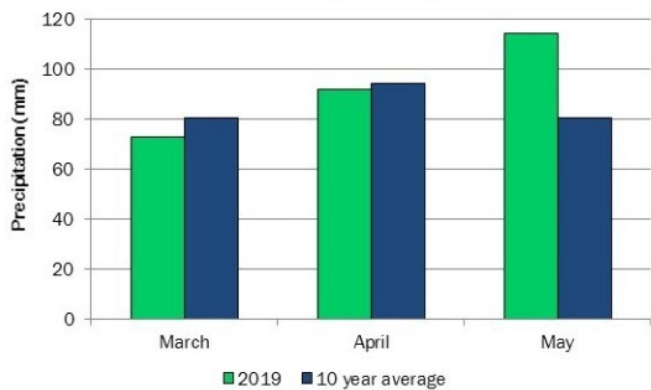


## Norfolk County

### Norfolk Growing Degree Days

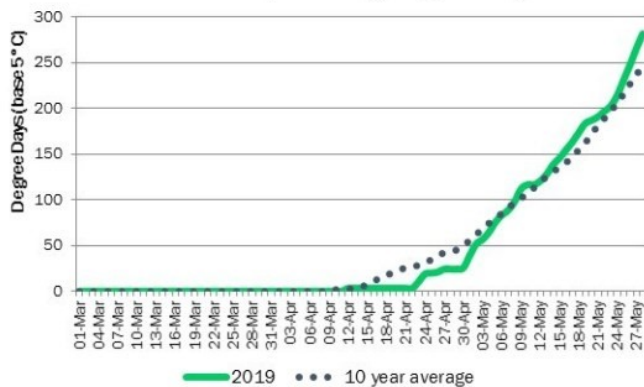


### Norfolk Total Precipitation per Month

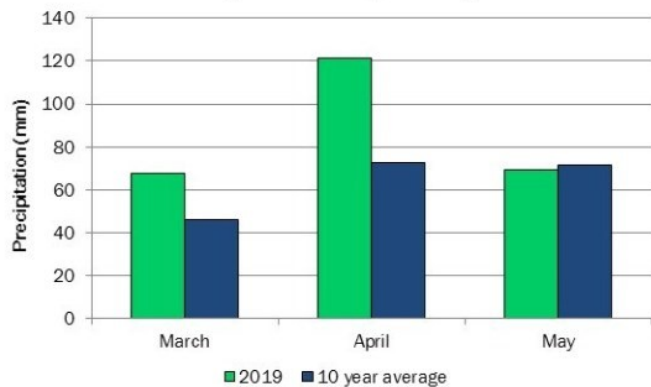


## Huron County

### Huron County Growing Degree Days



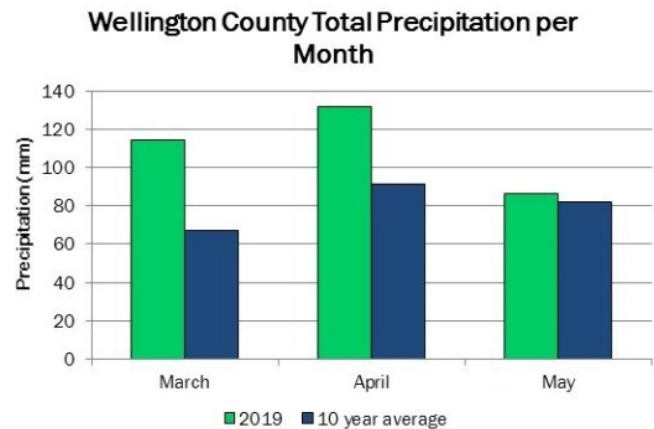
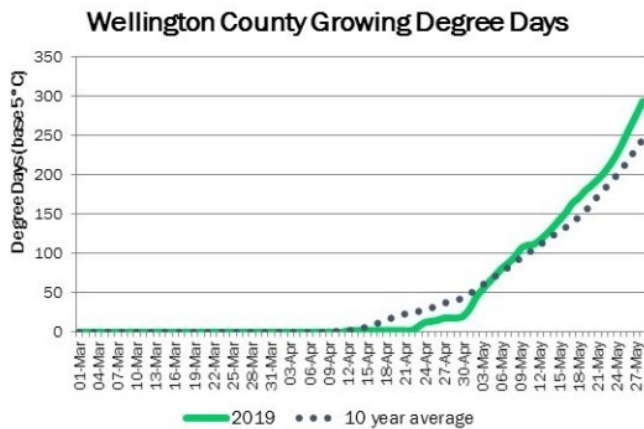
### Huron County Total Precipitation per Month



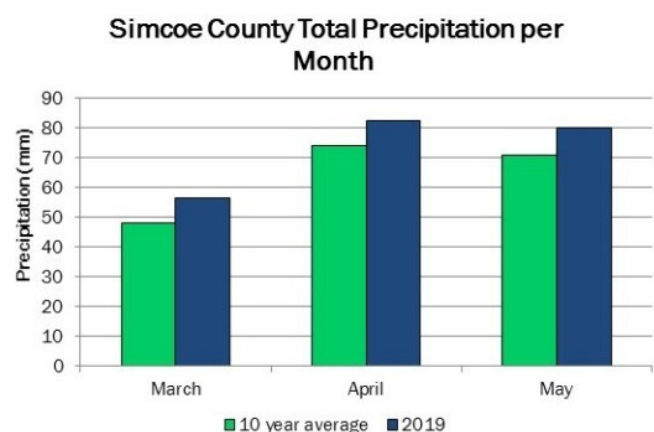
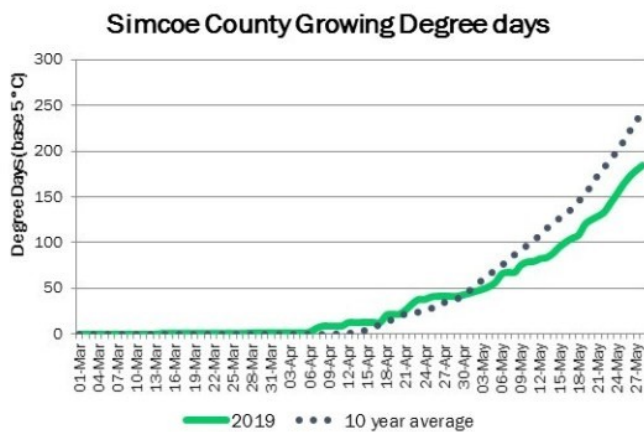


# VCR – Vegetable Crop Report – May 29, 2019...con't

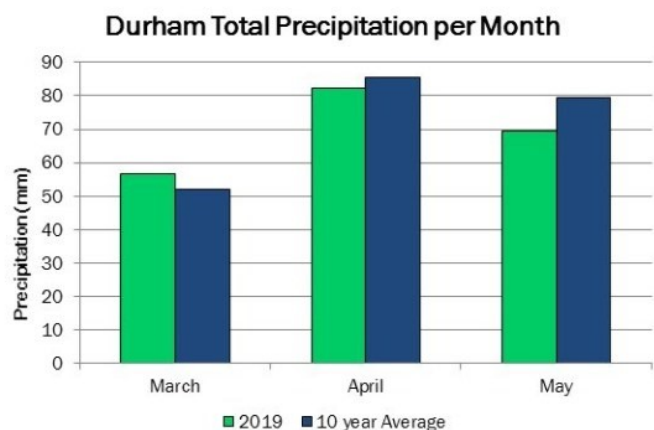
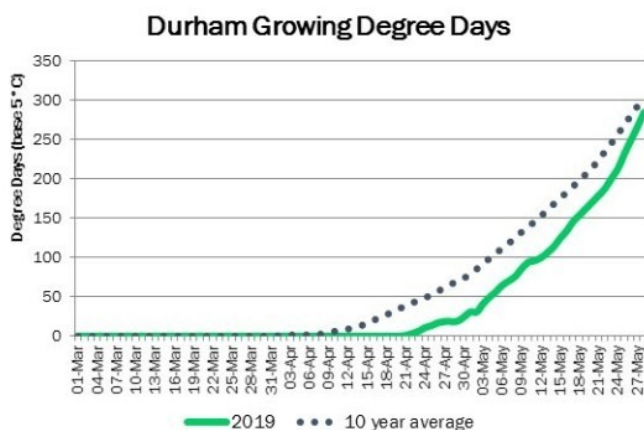
## Wellington County



## Simcoe County



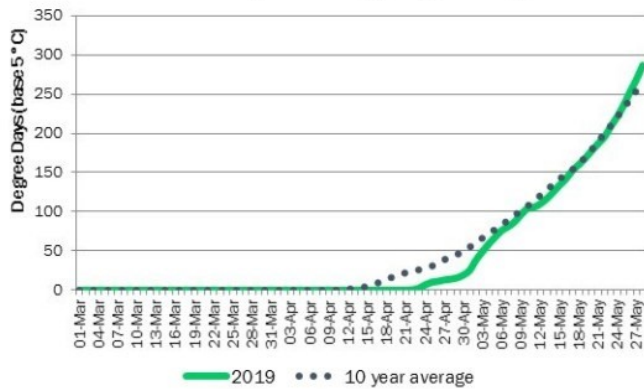
## Durham County



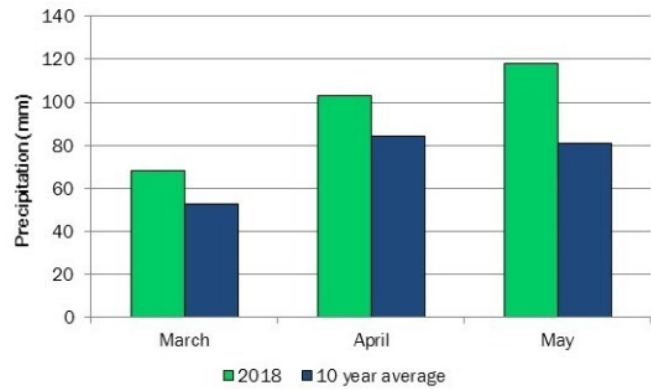
# VCR – Vegetable Crop Report – May 29, 2019...con't

## Peterborough

Peterborough Growing Degree Days

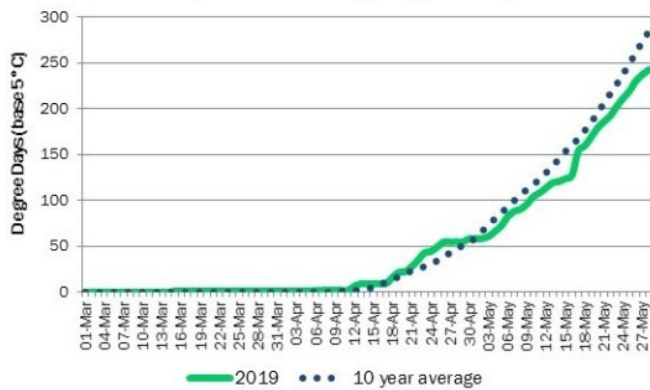


Peterborough Total Precipitation per Month

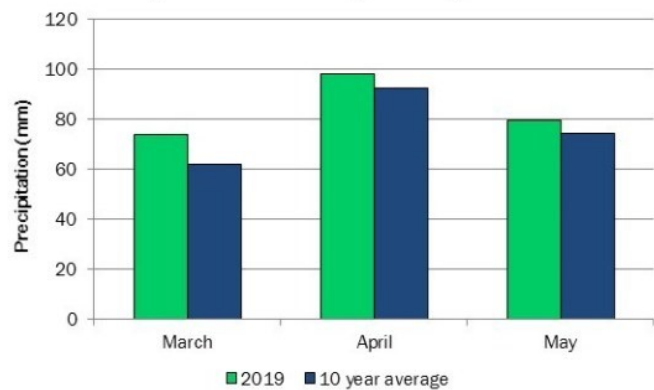


## Kemptville

Kemptville Growing Degree Days

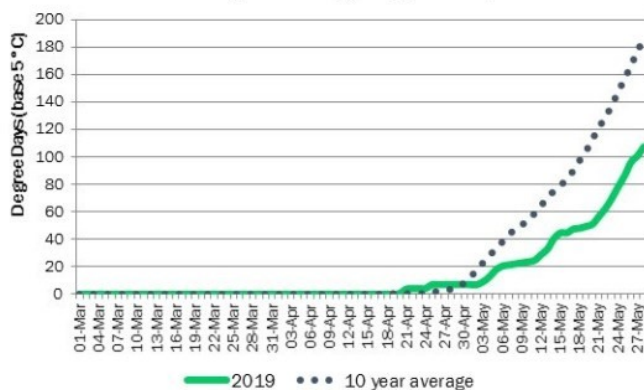


Kemptville Total Precipitation per Month

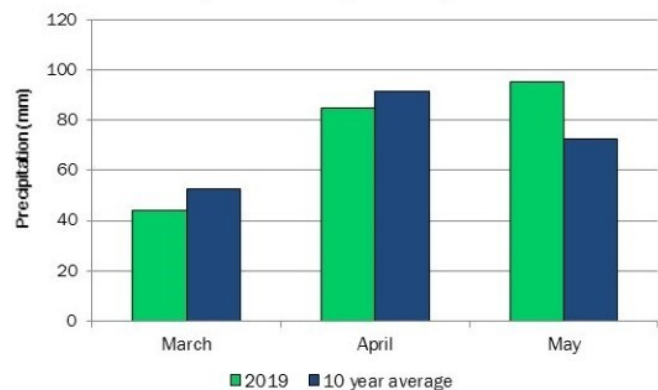


## Sudbury

Sudbury Growing Degree Days



Sudbury Total Precipitation per Month



## VCR – Vegetable Crop Report – May 29, 2019...con't

Pest	Carrot Rust Fly	Onion Maggot	Carrot Weevil	Aster Leafhopper	Tarnished Plant Bug	Cabbage Maggot	Seedcorn Maggot
<b>THRESHOLD</b>	<b>329-395</b>	<b>210</b>	<b>138-156</b>	<b>128</b>	<b>40</b>	<b>314</b>	<b>200</b>
Essex	482	417	248	163	73	301	417
Chatham-Kent	432	368	213	132	51	260	368
Norfolk	397	338	191	116	39	236	338
Huron	292	241	121	64	17	155	241
Wellington	289	240	119	64	20	154	240
Simcoe County	280	230	112	60	17	145	230
Durham	298	248	130	78	27	163	248
Peterborough	307	256	134	73	21	170	256
Kemptville	340	289	166	103	37	203	289
Sudbury	174	139	60	29	4	80	139

### Thresholds

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

## Is *Phytophthora capsici* Causing your Tomato Fruit Rot?

**Cheryl Trueman, Ridgetown Campus – University of Guelph and Amanda Tracey, Vegetable Crop Specialist, OMAFRA**



### *Phytophthora capsici* biology

*Phytophthora capsici* is a type of organism belonging to the group Oomycete or “water-moulds,” which are more closely related to algae than the fungi they are often confused with. It has a wide host range, including sweet and hot peppers, tomatoes, eggplants, all cucurbits, snap beans, lima beans and even some weed species. *P. capsici* reproduces best in warm and humid or wet conditions. On the surface of infected plants, it produces a large number of lemon-shaped structures called sporangia. Sporangia can be transmitted between plants and from soil to plants by splashing water, or through flowing water (i.e. irrigation water). Sporangia can also produce motile zoospores, which can swim short distances to plant roots in saturated soils or standing water. Sporangia and zoospores are produced annually, meaning

they are not long-lived and don’t persist in the environment. Oospores, another spore which can be produced by *P. capsici*, are thick-walled and are able to resist degradation. Oospores can remain dormant in the soil for up to 10 years.



# Is *Phytophthora capsici* Causing your Tomato Fruit Rot?...con't

## Common in Essex County field tomatoes

Due to increasing reports of fruit rot issues, a survey of 14 processing tomato fields was completed in 2018 to survey for buckeye rot and soft rot in tomato fruit. Fruit were collected in late August and early September in Essex County. A DNA multiscan (Univ. of Guelph Pest Diagnostic Clinic) was used to identify the presence of microorganisms. *Phytophthora capsici* was detected at 13 of 14 sites and 87% of fruit samples tested. Symptoms observed included crown rot, buckeye rot, white mycelial growth, and soft rot (Figure 1).



**Figure 1.** Fruit rot symptoms observed in Essex County processing tomato fields including a) crown rot, b), buckeye rot, c) and d) soft rot and white mycelial growth.

## Management of *Phytophthora* fruit rot in field tomatoes

We worked with two growers to evaluate the value of *P. capsici* specific fungicides to reduce *Phytophthora* fruit rot in 2018. Strips trials were completed at two commercial processing tomato fields. At both sites, the standard fungicide program, which included no fungicides with activity against *P. capsici*, was supplemented with fungicides with specific activity against this pathogen. Fruit rot incidence was too low at one site to determine the effectiveness of fungicides, but at the second site, fungicides reduced rot yield by an average of 61% (Table 1. In 2019, we will compare the five application foliar program (program 3 in Table 1) to a three application program.

**Table 1.** Yield (tons/acre) of tomatoes treated with different fungicides for management of *Phytophthora* fruit rot, Site 2, Essex County, 2018.

Program (product rate per 100 m or row (A) or Ha (BCDEF)) <sup>a</sup>	Yield (tons/acre) <sup>b</sup>			
	Reds	Greens	Rots	Total
<b>1. No <i>P. capsici</i> specific fungicides</b>				
Control	38.3 a	1.5 a	3.7 a	43.6 a
<b>2. In-furrow + foliar <i>P. capsici</i> fungicides</b>				
Presidio @ 2.2 mL + Revus @ 5.4 mL (A)				
Orondis Ultra @ 600 mL + Phostrol 2.9 L (B)				
Zapro @ 1 L + Phostrol @ 2.9 L (C)				
Torrent @ 200 mL + Phostrol @ 2.9 L (D)				
Orondis Ultra @ 600 mL (E)				
Zapro @ 1 L (F)				
<b>3. Foliar <i>P. capsici</i> fungicides only</b>	46.9 a	2.7 a	1.3 b	50.9 a
Orondis Ultra @ 600 mL + Phostrol 2.9 L (B)				
Zapro @ 1 L + Phostrol @ 2.9 L (C)				
Torrent @ 200 mL + Phostrol @ 2.9 L (D)				
Orondis Ultra @ 600 mL (E)				
Zapro @ 1 L (F)				

<sup>a</sup> All treatments received the standard grower program which did not include fungicides with activity against *P. capsici*. Application timings: A = in-furrow June 1, B = July 5, C = July 16 D = July 25, E = Aug 4, F = Aug 15. <sup>b</sup> Three 2 m sections per plot were harvested and the average analysed. <sup>c</sup> Numbers in a column followed by the same letter are not significantly different at  $P \leq 0.05$ , Tukey's HSD.

# **Is *Phytophthora capsici* Causing your Tomato Fruit Rot?...con't**

Even though certain fungicides can help reduce *Phytophthora* fruit rot, an integrated approach to management is important. For example, rotation with non-host crops will help prevent the pathogen population from building up in soil. Also, limiting the time that the soil is saturated, by using raised beds with plastic mulch and drip irrigation, has been shown to reduce losses due to *P. capsici*. If you are not able to use raised beds, tiling and subsoiling fields can help to improve drainage. Also, be aware of the source of your irrigation water. *P. capsici* has been found in water sources such as ditches, streams, rivers and ponds in other primary growing regions. Using well water or passing irrigation water through a carbon-based filter can help to reduce the likelihood of introducing *P. capsici* into your field every time you irrigate.

## **Acknowledgements:**

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