



HORT MATTERS

OMAFRA Specialists in Horticulture and Specialty Crops.

VOLUME NO. 9, ISSUE NO. 18

AUGUST 13, 2009



European Corn Borer - Accumulated Growing Degree Days

Elaine Roddy, Vegetable Crop Specialist



Univoltine corn borer adult populations peak at 650-700 GDD. Growers in the Hamilton, Waterloo, Peterborough and Ottawa areas will be experiencing peak flights and egg-laying at this time.

Location	GDD ¹⁰ (Aug 3 rd)	Location	GDD ¹⁰ (Aug 3 rd)
Windsor	946	Waterloo	675
London	745	Peterborough	649
Hamilton	692	Ottawa	731

The second generation of bivoltine European Corn Borer adults usually emerge at 700 GDD. The population peaks at 1050-1100 GDD. Growers in Southwestern Ontario can expect to see increased corn borer activity over the next few weeks.

IN THIS ISSUE...

- Vine Crop Update
 - Corn Earworm
 - Gummy Stem Blight
 - Alternaria
 - Downy Mildew
 - New resource for pumpkin growers
- Late blight of potatoes in Ontario

European corn borers controls are most effective when targeted at the very young larvae. Monitor fields regularly for egg masses and signs of windowpane or pin-hole feeding. Apply insecticides at the first sign of activity in the field. The spray threshold for this pest is 5% of the plants with either egg masses or feeding damage.



Windowpane Feeding



European Corn Borer Eggs

OMAFRA STAFF working for you

Horticulture Technology

Mike Celetti	Pathologist	519-824-4120,x58910
Jim Chaput	Minor Use Coordinator	519-826-3539
Hannah Fraser	Entomologist	905-562-1674
Kristen Callow	Weed Management	519-674-1335
Christoph Kessel	Nutrition	519-824-4120, x52480
Donna Speranzini	Nutrient Management Planning Spec.	905-562-1170
Anne Verhallen	Soil Management Specialist	519-674-1614
Hugh Martin	Organic Crop Production	519-826-4587
Denise Beaton	Crop Protection Program Lead	519-826-6594
Jason Deveau	Application Technology Spec	519-426-8934

Horticulture Crops

Marg Appleby	IPM Systems Specialist	613-475-5850
Eugenia Banks	Potato Specialist	519-826-3678
Wendy McFadden-Smith	Tender Fruit & Grape IPM Spec.	905-562-3833
Jennifer DeEll	Fresh Market Quality	519-426-1408
Pam Fisher	Berry Crop Specialist	519-426-2238
Janice LeBoeuf	Vegetable Specialist	519-674-1699
Elaine Roddy	Vegetable Specialist	519-674-1616
Ken Slingerland	Tender Fruit & Grape Specialist	905-562-1639
Leslie Huffman	Apple Specialist	519-738-1256
Kathryn Carter	Pome Fruit IPM Specialist	519-426-4322
Jennifer Allen	Vegetable Crop Specialist	519-826-4963

Greenhouse, Agroforestry & Specialty Crops

Jim Todd	Transition Crops Specialist	519-426-3823
Melanie Filotas	Specialty Crops IPM Specialist	519-426-4434
Sean Westerveld	Ginseng & Medicinal Herbs Spec.	519-426-4323
Evan Elford	New Crop Development Specialist	519-426-4509
Wayne Brown	Greenhouse Floriculture Specialist	905-562-4141, x179
Graeme Murphy	Greenhouse Floriculture IPM Spec.	905-562-4141, x106
Shalin Khosla	Greenhouse Vegetable Specialist	519-738-1257
Gillian Ferguson	Greenhouse Vegetable IPM Spec.	519-738-1258
Pam Charbonneau	Turfgrass Specialist	519-824-4120, x52597
Jennifer Llewellyn	Nursery Crops Specialist	519-824-4120, x52671
Todd Leuty	Agroforestry Specialist	519-826-3215
Mahendra Thimmanagari	Crop Bioproducts Specialist	519 826-4593

<http://www.ontario.ca/crops>

COMING EVENTS

August 18, **Simcoe Vegetable and Alternative Crop Open House**, 1:30 p.m., Simcoe Research Station. Please RSVP by Aug 14 to 519-426-7127, ext 323. For more info see page 4 or visit: <http://www.omafra.gov.on.ca/english/crops/conferences/20090818.htm>

August 20, **Ontario Potato Field Day**, H.J. VanderZaag Farm, Alliston. For more information contact Eugenia Banks at eugenia.banks@ontario.ca

September 23, 24, **Handle with Care Symposium, Guelph Food Technology Centre, Guelph**. Connect with innovation and global experts in gentle processing. For more information about registration, contact Denise Horseman 519-821-1246 ext. 5068 or dhorseman@gftc.ca

Permit to Take Water Workshop—9:00 a.m. or 1:00 p.m., Simcoe OMAFRA office.

- October 15, November 19, December 17

For more information call 519-426-4920 or visit http://www.omafra.gov.on.ca/english/engineer/facts/pttw_course.htm

September 12, **Centennial Open House, Greenhouse and Processing Crops Research Centre, Harrow**, 10:00 a.m.—4:00 p.m.. For more information call 519-738-1219

September 16, **Ontario Berry Growers' Association season wrap-up and farm tour**, Whittamores Farm, Markham. Contact Kevin Schooley, kconsult@allstream.net, 613-238-4587

Subscribe on-line to receive notice by email when a new issue of Hort Matters is posted. All you need to do is enter your email address at <http://www.omafra.gov.on.ca/english/subscribe/index.html> and submit.

To receive a fax version of Hort Matters, send your fax number to: OMAFRA, Vineland Resource Centre, Box 8000, 4890 Victoria Avenue N, Vineland Station, ON L0R 2E0 or fax to 905-562-5933.

Edited by:

Donna Speranzini, Nutrient Management Program Lead (Hort)

Prepared by:

Carolyn Prieur, Client Service Rep, Vineland Resource Centre

Suggestions?

We'd like to hear from you

Hort Matters
OMAFRA, Box 8000,
4890 Victoria Avenue N,
Vineland Station, ON L0R 2E0
Ph. 905-562-1674 Fax 905-562-5933
Email:

donna.speranzini@ontario.ca
hannah.fraser@ontario.ca

Corn Earworm

Researchers in the Southern United States have been reporting very high levels of corn earworm activity. The current weather forecasts indicate that there is a moderate risk of these populations moving into the mid-western states over the next 3-5 days. Ontario is at the edge of the predicted flight zone; however growers should be aware of the potential for increased activity over the next few weeks.

Corn earworm must be controlled before they enter the protection of the husk. Insecticide applications made on freshly silking corn will help to control this pest as it hatches. A high level of pyrethroid resistance has been documented in the corn earworm population across North America. Coragen insecticide is an effective alternative to the commonly used pyrethroid sprays.

Gummy Stem Blight

Gummy stem blight infects the leaves, stem and fruit of all cucurbits; however melons, pumpkins and winter squash are most susceptible to this disease. Foliar infections often start as an oblong canker on the stem. Under severe infections the cankers can girdle the stem, causing the entire plant to die.

The stems of infected plants may ooze a gummy brown sap. The presence of this sap does not always indicate a gummy stem blight infection. Other cucurbit diseases, such as fusarium wilt, can also produce this gummy, brown exudate. Look for the accompanying stem lesions to determine if it is indeed gummy stem blight.

Infected plants may or may not develop obvious foliar symptoms. Symptoms first appear on the leaf margins as circular, brown, necrotic lesions surrounded by a yellow halo. Foliar infections cause premature defoliation, resulting in lower yields and poor fruit quality.

Low levels of gummy stem blight in the crop can result in harvest rots, especially during cool wet fall conditions. On most cucurbits, fruit infections cause black rot. Water-soaked circular lesions on the fruit surface develop copious sooty, black spores. On butternut squash the gummy stem blight fungi cause a superficial bronzing on the skin with distinct circular patterns.

Fungicides such as Cabrio, Lance and mancozeb will control gummy stem blight infections. This pathogen can survive on infected crop residue for several years. It can also become seed borne. Follow a 2-3 year rotation away from all cucurbit crops and always purchase certified, treated seed.



Gummy Stem Blight Stem Lesions

Alternaria

Alternaria is a common disease of melons. It may also infect cucumbers and other cucurbit crops. Alternaria lesions normally form on the older leaves first. The initial infection causes small, yellow-to-brown flecks with a light yellow halo. As they enlarge, the flecks turn brown and necrotic; they also develop concentric rings.

In muskmelons, Alternaria lesions may grow as large as 2 cm (3/4 in.) in diameter. Watermelons lesions are a darker brown and somewhat smaller (5 mm or 1/4 in.). If left untreated, the lesions often grow together causing the entire leaf to turn brown, wither and die. The resulting reduction in the leaf canopy often causes an increase in sunscald and damage to mature fruit.

Alternaria mycelium can survive for 1 to 2 years in cucurbit residue. Under humid weather conditions, dormant mycelium become active and produce conidia spores which then infect the current year's crop. Secondary spores are spread to neighbouring plants by splashing water. They may also become airborne resulting in the further spread across the field.

Broad spectrum fungicides such as mancozeb, Cabrio, Lance and Bravo will control alternaria infections. As with all crop diseases, alternaria fungicides are most effective when applied preventatively.



Alternaria on Cantaloupe



Alternaria on Cucumber

Downy Mildew Update

The weather conditions continue to present a high risk of downy mildew infection across the North-Eastern US and Eastern Canada. Infection levels in Southwestern Ontario remain comparatively low thanks to a diligent spray program. Cucumber and melon growers should continue to spray Ranman and Tattoo C on a 7-day interval.

Downy mildew has been confirmed in a pumpkin field in Norfolk county, near Simcoe. This is the first incidence of downy mildew in pumpkins in Ontario for 2009. Pumpkin and squash growers should consider adding a downy mildew fungicide (Ranman or Tattoo C) to their spray rotation. Keep in mind that these products will not control other foliar diseases, including powdery mildew, scab or alternaria.

New Resource for Pumpkin Growers

The August 2009 (volume 93 No. 8) issue of Plant Disease has a feature article on post harvest rots of pumpkins. *Fruit Rots of Pumpkin: a serious threat to the pumpkin industry* by Mohammad Babadoost and Tom Zitter is an excellent resource for pumpkin growers. It contains excellent photographs of diseases such as phytophthora, black rot and fusarium.

The article is posted on the Plant Disease website at: <http://apsjournals.apsnet.org/toc/pdis/current> or you can contact OMAFRA at 519 674 1616 or elaine.rodgy@ontario.ca for a paper or pdf copy of this excellent article.

OMAFRA Crops Content Corner

For Fruit Growers: Summer pruning is another management tool to manage vigour and improve fruit quality in apples. Read more about this technique in "August - Time for Pruning Apples?", now online at <http://www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2009/17hrt09a1.htm>.

And For Berry Growers: Raspberry harvest is in full swing, and one problem that shows up at harvest is crumbly berries that fall apart in your hand when picked. Read about several things that could cause this condition in "Raspberry Crumble", now online at <http://www.omafra.gov.on.ca/english/crops/hort/news/hortmatt/2009/17hrt09a2.htm>

For Vegetable Growers This season has certainly been interesting, and now we find black aphids – wait! Aphids are usually green. Read more about the "Cowpea Aphid", now online at <http://apps.omafra.gov.on.ca/scripts/english/crops/agriphone/article.asp?ID=1746#cowpea>

For Specialty Crop Growers: Ontario is home to one of the most ethnically diverse populations in North America and this diversity offers great market opportunities for locally-grown, non-traditional crops. Read more about "Growing Non-traditional Crops in Ontario", now online at <http://www.omafra.gov.on.ca/english/crops/facts/09-043w.htm>

Brought to you by your OMAFRA Crops Content Team - Visit us online at www.ontario.ca/crops/

Celebrating 12 years of putting you in touch with the information you need!

Check our new postings for meetings at our Crops Conferences and Meetings at <http://www.omafra.gov.on.ca/english/crops/conferences/index.html>

Late Blight of Potatoes in Ontario

Eugenia Banks, Potato Specialist

Background

Late blight, caused by the fungus *Phytophthora infestans*, is a devastating disease of tomatoes and potatoes. If the weather is wet and no effective control methods are applied, late blight can completely destroy the canopy of potato field in a week. Tubers may become infected if spores are washed into cracks in the soil and come in contact with tubers.

Management Strategies

The best defense against late blight is to keep the disease from establishing in the field.

The fungus survives only in living tissue. The first late blight outbreaks are usually caused by infected seed. Late blight may also start from diseased tubers in cull piles or from volunteers in field that grew potatoes the previous year.

Late blight can be spread long distances by wind, especially during rain storms. This wind-borne infection pops up in scattered parts of fields.

Growers should start spraying fungicides early, when the plants are 10-15 cm tall, in order to cover the stems. Regular spraying is necessary to protect the plants as they grow. Regular scouting is also necessary to detect late blight early.

The 2009 Season

Last year, late blight developed in all seed production areas in Canada, so the risk of planting infected seed this year was high. The growing season has been cool and wet, great for the potato crop but also just the weather that favors the development of late blight.

The first late blight outbreak was found on July 8 in a field near Grand Bend. Stem lesions and radial spread indicated that the disease was seed-borne. On July 9, a second outbreak was detected in the Alliston area that also looked to be seed-borne. An intensive spray program has kept these two outbreaks under control.

Near the end of July, a 30-acre infected field was found near Delhi. The field had not been sprayed before a wet period, and late blight killed the canopy in a week. The grower started harvesting the field this week and runs the risk of infected tubers, but the crop is not a total loss.

By the beginning of August, wind-borne late blight was turning up in small areas of potato and tomato fields in many areas of the province. Intensifying the spray programs in commercial potato fields has kept these outbreaks under control.

The main concern is organic tomatoes and potatoes because there are no effective late-blight fungicides allowed. Organic growers must pull and compost infected plants, but the disease can spread quickly and overwhelm growers. Several organic tomato and potato fields in Ontario are now infected.

Economic Losses

Due to the wet weather and the late blight risk, growers have had no alternative but to follow a tight fungicide program. It is expensive to spray every 5-7 days and to use late-blight specific fungicides that are more expensive than the regular protectant fungicides, but it is necessary. The added costs will result in economic losses this year for many potato growers.



Late blight lesion on underside of leaf