

January 2011

CCOVInews

A newsletter from
the Cool Climate Oenology
and Viticulture Institute



CCOVI

Brock University

Warm news for the problem of winter kill

When Niagara vineyards feel the harsh grip of winter, a familiar question confronts growers: When do I turn on the wind machines?

A new tool developed by CCOVI scientists takes the guesswork out of that challenge and may help growers avoid losing thousands of dollars worth of vines to winter kill. It's a database called VineAlert, and it's free to anyone who logs on to ccovi.ca/vine-alert.

By recording temperatures and compiling them with previous readings for the same area, VineAlert helps researchers track bud hardiness for vinifera grape varieties in different locations.

The data, which helps determine critical lethal temperatures for buds, can be accessed by growers. This information will help growers monitor bud winter hardiness during the dormant period from late October to mid-April.

CCOVI Viticulturist Jim Willwerth has been one of those at the forefront of this project along with team members Dr. Kevin Ker (CCOVI Professional Affiliate), Ryan Brewster (KCMS) and Dwight Follick (CCOVI). This initiative led by CCOVI and the Grape Growers of Ontario was possible with funding from Agriculture and Agri-Food Canada.

"For too long, growers have had to try to predict how to use best winter protection techniques, with very little information to rely on," says Willwerth.

"During the growing season,

it's easy to see some changes such as veraison. However, it's a totally different story during the dormant season. Externally, the buds look the same and one cannot simply look at a bud to determine how cold hardy it is. This is where our research comes into play."

Currently, VineAlert has data for the 10 designated sub-appellations of the Niagara Peninsula. Research trials for other areas such as Lake Erie North Shore and Prince Edward County are in the works.

The system offers timely information in one central location. The web-based database is comprised of four main sections: Bud hardiness, Bud survival, Alerts and Resources.

Bud hardiness data allows growers to determine critical lethal temperatures for buds. With this information in hand, growers are able to make an informed decision of when to turn on the wind machines and for how long.

"This is much more economical for growers," says Willwerth.

Bud survival helps track the survival rates of grape buds prior to the growing season.

Growers who sign up on Alerts obtain information based on location, time and cultivar and receive up-to-date notices on new data postings.

The Resources section offers a variety of useful information such as a glossary of terms and links on winter bud injury.

This past December, Willwerth presented the first training session on VineAlert to Niagara growers. A second session has been scheduled for **Jan. 25 at 10 a.m.** in the NOTL Public Library (Computer Room) for a "hands-on" workshop. Spaces are limited so book early by emailing ccovi@brocku.ca

There will be additional sessions in Prince Edward County on Jan. 22 as well as one in Lake Erie North Shore.

For more information on VineAlert or training sessions, please contact Jim Willwerth at 905-688-5550 x5477 or jwillwerth@brocku.ca.



Jim Willwerth explains how the VineAlert system works

Students for hire

Students in the OEVI program at Brock University are seeking jobs for 2011.

To have a position posted for our students call:
905-688-5550 x4949
or e-mail:
jennifer.roberts@brocku.ca

The Wine Tasting Challenge

Congratulations to the competitors at the challenge.

Results will be posted on the website winetastingchallenge.com

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Top students to attend Cuvée

Niagara Community Foundation announced that the top 10 students from the OEVI program at Brock University will attend the Cuvée Gala this March through the generous sponsorship of the Grape Growers of Ontario.

David Ledderhof, M.Sc. candidate in viticulture, attended last year's event. "This was my first chance to attend this event and I was blown away by the entire experience. The chance to meet and greet with top professionals in the Ontario grape and wine industry, to taste the best-of-the-best of Ontario's wines and to taste so many delicious foods was unparalleled," says Ledderhof.

Congratulations to our students on their accomplishments and thank you to the Grape Growers of Ontario for this opportunity and recognition.

Grad wins Best Dessert Wine at the 2010 International Wine & Spirit Competition

OEVI and CCOVI alumnus Derek Kontkanen, Winemaker of Icewine & White Wines at Jackson-Triggs Okanagan Estate, was singled out this year for his Jackson-Triggs Proprietors' Grand Reserve Riesling Icewine 2007. The Icewine won best in the Dessert Wine category of the International Wine & Fortified Wine Trophies in London, England. This competition is considered to be the most prestigious wine and spirit competition in the world.

To ferment his award-winning wine, Derek used a yeast rehydration and acclimatization method he developed specifically for Icewine production during his M.Sc. studies at CCOVI, Brock University.

"What a great example of knowledge transfer from CCOVI's research into industry practices for our grape and wine sector," says CCOVI Director Debbie Inglis.

Congratulations to Derek on this great accomplishment.

11 new researchers at CCOVI

CCOVI is pleased to announce that 11 researchers became new CCOVI Fellows and Professional Affiliates.

New CCOVI Fellows:

Dr. Lester Kwong, Assistant Professor, Economics, Brock University

Dr. Annette Nassuth, Associate Professor, Molecular and Cellular Biology, University of Guelph

Dr. Michael Ripmeester, Professor, Geography, Brock University

Dr. Narongsak (Tek) Thongpapanl, Associate Professor, Marketing,

International Business and Strategy, Brock University
New CCOVI Professional Affiliates:

Carl Bogdanoff, Viticulture Biologist, PARC

Dr. Margaret Cliff, Research Scientist, PARC

Dr. Tom Lowery, Research Scientist, PARC

Alexandra Mayeski, Lawyer, Heenan Blaikie LLP, Toronto

Dr. Gerry Neilsen, Research Scientist, PARC

Daniel O'Gorman, Research Biologist, PARC

Dr. Kevin Usher, Research Scientist, PARC

Continuing Education at CCOVI

OEVI ON02 - Introduction to the Wines of Ontario

This course focuses on the wines of Ontario. Become familiar with VQA wines and the viticultural areas in which they are grown.

Mondays at 7 p.m. starting Jan. 17, 2011 (9 wks).

OEVI ON04 - Certification Program in Wine Sales and Service

Insight into the wine consumer, practice the dimensions of quality service and learn how to 'sell' wine through facilitation rather than the 'hard' sell.

Wednesdays at 7 p.m. starting Feb. 9, 2011 (9 wks).



OEVI ON06 - WSET Level 2: Intermediate Certificate in Wines & Spirits

Geared to those employed in the beverage industry or anyone wishing to broaden their knowledge of wine and spirits in a structured way.

Wednesdays at 6 p.m. starting April 6, 2011 (9 wks).



OEVI ON07 - WSET Level 3: Advanced Certificate in Wines & Spirits

This course will provide in-depth knowledge and analysis of a wide range of wines and spirits.

Tuesdays at 6 p.m. starting Jan. 18, 2011 (14 wks).

For more information on these courses, contact:

Barb Tatarnic at 905-688-5550 x4652 or ccovi@brocku.ca
For a complete list of courses or to register online go to brocku.ca/ccovi then click on Continuing Education.

Visit to Quebec wine region

This past November, CCOVI Director Debbie Inglis and Viticulturist Jim Willwerth met and discussed potential partnerships with Vignobles Brome-Missisquoi, the organization representing 17 wineries in that region of Quebec.



From left to right, back to front: Alphonso Gagliano, Jim Willwerth, Léon Courville, Denis Paradis, Simon Naud, Mario Thibeault; Lynn Brault, Debbie Inglis, Véronique Hupin

Research Q&A

Global warming and Ontario's vineyards



CCOVI Fellows Drs. Tony Shaw and Don Cyr are investigating the effect of climate change on Ontario's wine regions. Dr. Shaw is also involved in collaborative work with Dr. Adam Fenech, Adaptation & Impact Research Group, Environment Canada.

How does global warming affect Ontario's climate?

For the last 50 years, the Earth has been getting warmer.

For instance, most wine regions in Ontario have seen warmer than normal temperatures, longer frost-free seasons and increased humid conditions.

The national average temperature during the winter of 2009/2010 increased 4°C above normal, making it a nationwide record year.

Spring temperatures have also increased in southern Ontario, shortening the periods of freezing temperatures.

Such climate change can dramatically affect vineyard productivity.

Is there any good news out of this?

Warmer climates allow for longer growing seasons. As a result, wine grape

production increases both in quantity and quality since grapes have the time to ripen better.

In the future, global warming could allow Ontario growers the ability to cultivate successfully new cold-sensitive grape varieties.

A warming climate also means that areas in Ontario that previously were too cold to grow grapes can become vineyards of the future.

What is the bad news of global warming?

Warmer temperatures could actually increase winter damage in vineyards. For instance, bud vine injury could result from reduced cold tolerance during the fall.

Global warming also brings temperature fluctuations. An increase in the frequency of winter freeze-thaw events can occur and result in decreased hardiness of the vines while increasing their sensitivity to colder temperatures in late winter.

Climate change can also jeopardize the Icewine industry if there is a decrease in the number of days reaching temperatures of less than -8°C.

We have found in our studies that there has been a declining trend for Icewine events (i.e. at least 8 days with temperatures less than -8°C) between the years of 1970 to 2007. The most pronounced trends appeared in February followed by January and December.

What's next?

Our next phase is to develop a climate system to determine long-term trends in climatic variations. This will be an invaluable tool for growers when planning new vineyards and winter protection strategies.

Brock harvests two new grads



Martha Bajec and Dr. Gary Pickering, Supervisor

Martha Bajec, graduate of the Biological Sciences Doctoral program at Brock University, defended her thesis in November.

Her dissertation "Astringency and other oral sensations: biological sources of individual variation and association with food and beverage behaviour" can be used to determine the extent to which genetic and biological differences between people influence their sensory

perception of food/beverage and their behaviour towards those products.

Martha defended her thesis before Examining Committee members: Dr. Joffre Mercier, Chair; Dr. John Hayes, External Examiner, Pennsylvania State University; Dr. David Battista, Internal Examiner; Drs. Debbie Inglis and Stefan Brudzynski, Committee Members; Dr. Gary Pickering, Supervisor.



Dr. Andrew Reynolds, Supervisor and Amy Bowen

Graduate of the Biological Sciences Doctoral program at Brock University, Amy Bowen defended her thesis in December.

Her dissertation "Elucidation of odour-potent compounds and sensory profiles of Vidal blanc and Riesling Icewines from the Niagara Peninsula: effect of harvest date and crop level" helps to understand better the sensory characteristics and odour-active volatiles of Niagara Vidal and Riesling

Icewines.

Amy defended her thesis before Examining Committee members: Dr. Heather Gordon, Chair; Dr. Terry Acree, External Examiner, Cornell University; Dr. Martin Lemaire, Internal Examiner; Drs. Debbie Inglis and Douglas Bruce, Committee Members and Dr. Andrew Reynolds, Supervisor.

CCOVI and Brock University congratulate Martha and Amy in completing their PhD.

CCOVI Briefs

VITICULTURE

- Nassuth, A. Vitis CBF pathway genes – Proposed functions in stress tolerance and development and their use as molecular markers. University of Santiago de Compostela, Campus de Lugo, Spain, Nov. 2010.
- Nassuth, A. Proposed functions of Vitis CBF transcription factors in plant stress tolerance and development. Université Paul Sabatier, Toulouse, France, Oct. 2010.
- Moody, M., Siddiqua, M., Jetha, Z. and A. Nassuth. Newly developed in vivo vector system to analyze promoter activities. CSPP Eastern Regional Meeting, Brock University, Dec. 2010.
- Huber, C., McFadden-Smith, W. and D. Inglis. Management and etiology of grape sour rot in the Niagara region. North Eastern Division of the American Phytopathological Society Conference, Northampton, MA, Oct. 28, 2010.

OENOLOGY

- Pickering, G.J. Food, flavour and phantoms: individual variation in taste perception. Brock University, Psychology, Oct. 8, 2010.
- Pickering, G.J. Managing green flavours and mouthfeel post harvest. Proc. 16th Romeo Bragato Conference, New Zealand Winegrowers, Marlborough, New Zealand, Aug. 24-28, 2010, p. 93 (invited presentation).
- Pickering, G.J. Introduction to mouthfeel: measurement, manipulation and marketing. Plenary lecture. Proc. 16th Romeo Bragato Conference, New Zealand Winegrowers, Marlborough, New Zealand, Aug. 24-28, 2010.
- Inglis, D. Harvesting innovation for the grape and wine industry. 60th Annual Essex County Associated Growers Trade Show, Leamington, Ontario, Nov. 23-24, 2010.

CCOVI Publication

OENOLOGY

- Botezatu, A. and G.J. Pickering. 2010. Ladybug (*Coccinellidae*) taint in wine. *IN Reynolds, A. G. Understanding and Managing Wine Quality and Safety*. Woodhead Publishing Limited, Cambridge, U.K.

CCOVI seasonal celebration

On Dec. 9, members of the grape and wine industry and academia attended CCOVI's annual seasonal celebration. In the spirit of the holidays, people socialized with their peers, shared a glass of Ontario VQA wine and celebrated the holidays. The addition of the 11 new CCOVI Fellows and Professional Affiliates to the CCOVI network was also recognized at the event.



2011 CCOVI Annual Lecture Series

Featuring talks by CCOVI Researchers, Fellows and Professional Affiliates.

The free lectures are Wednesdays at 3 p.m. EST in Mackenzie Chown Complex, room H313, Brock University.

Visit brocku.ca/ccovi, "Outreach Services", "CCOVI Lecture Series" for more information.

Debbie Inglis

CCOVI Director & Associate Professor, Biology, Brock U.

Date: Jan. 19

Topic: *Methoxy-pyrazine (MP) removal from grape juice using MP-binding proteins*

Linda Bramble

Wine writer, author, educator

Date: March 16

Topic: *The paradoxical story of VQA*

Annette Nassuth

Associate Professor, Molecular & Cellular Biology, University of Guelph

Date: Jan. 26

Topic: *Molecular tools to select for freeze-tolerant grapes*

Gary Pickering

Professor, Biology, Brock U.

Date: March 23

Topic: *Super-tasters, winemakers and other freaks: the taste genetics of alcoholic beverage behaviour*

Alexandra Mayeski

Lawyer

Date: March 30

Topic: *Legal barriers to market access for Canadian wine*

Michael Ripmeester

Professor, Geography, Brock University

Date: Feb. 2

Topic: *Heritage, identity and wine in Niagara*

Carl Bogdanoff,

Pat Bowen, Tom Lowery, Kevin Usher

Research scientists, Pacific Agri-Food Research Centre

Date: April 6

Topic: *Science: a key ingredient in BC wine production*

Tony Shaw

Professor, Biology, Brock U.

Date: Feb. 9

Topic: *Climate change in Ontario's wine regions: the good and bad news*

Tek Thongpapanl

Associate Professor, Marketing, Brock U.

Date: Feb. 16

Topic: *What does it take for local restaurants to promote local wines?*

Lester Kwong

Assistant Professor, Economics, Brock U.

Date: April 13

Topic: *The pricing of organic wines*

Janet Dorozynski

Global Practice Lead, Foreign Affairs & International Trade

Date: March 2

Topic: *The future of Canadian wine exports*

Ronald Jackson

Wine writer, author

Date: April 20

Topic: *Botrytis—the Jekyll-and-Hyde fungus*

Jim Willwerth

Viticulturist, Brock U.

Date: March 9

Topic: *Coming out of the cold: the state of the vine*

Gerry Neilsen,

Daniel O'Gorman

Research scientists, Pacific Agri-Food Research Centre

Date: April 27

Topic: *Grape quality and vine health*