

CCOVI News

JANUARY 2008

A NEWSLETTER FROM THE COOL CLIMATE OENOLOGY AND VITICULTURE INSTITUTE, BROCK UNIVERSITY, ST. CATHARINES, ONTARIO



**Brock
University**



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Winter Issue



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Can icewine be too sweet for its own good?

This may come as a tough one to swallow: icewine juice can be too sweet for its own good, says a new study by a researcher at Cool Climate Oenology and Viticulture Institute (CCOVI) at Brock University.

Debra Inglis, a CCOVI researcher and lead author of the study, stressed the value of the research for Canada's role as the global leader in icewine production.

"It's an important step toward setting icewine quality standards so that we can continue to lead the international market. And, by identifying chemical and sensory markers of the product, we're starting to define what truly makes Canadian icewine unique," says Inglis.

Inglis and her team used chemical and microbial analyses of icewine fermentations to show that raising the sugar level of icewine juice above 42 Brix (that is, 42 per cent sugar by weight in solution) hinders yeast growth, fermentation rate and alcohol production. The researchers also found that yeast produce more acetic acid—the primary source of volatile acidity (VA), a wine fault—as a response to greater stress imposed by super-sweet icewine juice.

In fact, say the scientists, icewine juice in excess of 42 Brix is so stressful that yeast have extreme difficulty pro-



Icewine grapes

ducing a minimum of 10 per cent alcohol by volume – the industry standard for icewine. And the researchers advise that, in excess of 52.5 Brix, icewine juice is theoretically non-fermentable by yeast.

Along with finding ideal conditions for icewine fermentations, Inglis and her team are working to better understand yeast metabolism as it relates to acetic acid production.

"Over the past eight years, we have started to unravel the yeast metabolic pathway used to produce acetic acid during icewine fermentation and defined ways to reduce its production," says Inglis. "We are also in the process of screening different yeast strains at the genetic level to identify which ones are best suited for icewine fermentations."

The study and a related one by Inglis appear in the November issue of the *Journal of Applied Microbiology*. ■

Photo: Dominic Rivard

Introducing CCOVI News

New concept for newsletter

We are pleased to introduce the first issue of *CCOVI News*, a newsletter which replaces its predecessor, *CCOVI Connection*.

With a new look and a new focus, *CCOVI News* will feature timely reports on research and outreach activities at CCOVI.

We look forward to a prosperous year in 2008 for all in the grape and wine community.

Best wishes,
From everyone at CCOVI

The *CCOVI News* will be published quarterly in January, April, July and October. To receive the newsletter electronically, send a request by e-mail to:

james.cooper@brocku.ca
Or download the newsletter at: www.brocku.ca/ccovi

Recruit our students

Students for hire

Students in the Oenology and Viticulture program at Brock University are seeking jobs for 2008. If you plan to hire vineyard, winery or wine retail workers in 2008, recruit our students who are skilled in winemaking, viticulture and wine business.

To have a position posted for our students, contact Brian Grant.

tel: 905-688-5550, ext. 3510
e-mail: ebgrant@brocku.ca

The Wine Tasting Challenge

'07 Challenge was best yet

With taste buds primed, more than 200 contenders quenched their thirst for competition at the fourth and best yet installment of the Wine Tasting Challenge, organized by CCOVI.

Wine professionals, Brock students, wine enthusiasts and members of the national media, including the CBC and the Globe and Mail, were on hand at the event, which was hosted at the Fours Seasons in Toronto.

Isabelle Lesschaeve, Director of CCOVI, explains CCOVI's role in the Challenge. "As the organizing and auditing body of this ever growing wine competition, CCOVI ensures stringency and fairness in the results."

In its fourth year, with a prize purse of more than \$120,000, the contest is the largest of its type in the world. Winners were announced in the January issue of Toronto Life.

The winners by category are:

PROFESSIONAL CHALLENGE

1st: Aaron Pitcher
2nd place: Anton Potvin
3rd place: Paul Pender

CCOVI-VQA CHALLENGE

1st place: Lesley Fraser

SPIRITS CHALLENGE

1st place: Allison Vidug

AMATEUR CHALLENGE

1st place: Marlise Ponzio
2nd place: Jayne McMahon
3rd place: Andrea Harrington

The winners, who were announced in this month's edition of Toronto Life, split a prize purse worth more than \$100,000—a world record for a wine event of this type.

CCOVI congratulates all of the winners and raises a glass to all participants, volunteers and sponsors who made this year's Challenge the best yet.

More information on the Challenge and the complete list of wines and prizes in the 2007 event can be found at: winetastingchallenge.com ■



Photo: Isabelle Lesschaeve

Matthieu Marciniak, a CCOVI grad student, puts his senses to the test at the 2007 Wine Tasting Challenge at the Four Seasons in Toronto.

Promoting the Promoters '08

Call for nominations for the '08 Promoting the Promoters Awards

Your opinion matters - Help us recognize individuals for their outstanding achievements in the promotion of VQA wines.

Who can nominate? Anyone who works at a VQA winery is invited to make nominations. [Submit as many nominations as you wish.](#)

To submit your nomination, go to:
www.brocku.ca/ccovi/nominations/

Award recipients will be announced at the Cuvée Awards at Fallsview Casino Resort on February 29th and the Experts' Tasting at Brock University on March 1st.

For more information, contact Barb Tatarnic.
tel: 905-688-5550, ext. 4652; e-mail: ccovi@brocku.ca

CCOVI hosts icewine book signing

Canadian wine mogul Dr. Donald Ziraldo held a book signing for his new release, *Icewine: Extreme Winemaking*, which he co-authored with Dr. Karl Kaiser, at the Cool Climate Oenology and Viticulture Institute.

Guests from Brock, the community and the local media, gathered in Inniskillin Hall's wine cellar for food and drink, which of course included icewine, and a chance to have copies of the book signed by Dr. Ziraldo.

In the book, Drs. Ziraldo and Kaiser, both recipients of honorary doctorate degrees from Brock, acknowledge Isabelle Lesschaeve, Director of CCOVI, Gary Pickering, Chair of Biological Sciences, and Debra Inglis, Associate Professor of Biological Sciences, for their advice and icewine expertise.

"I couldn't find a lot of [icewine] research, other than what's being done at [Brock University]," said

Dr. Ziraldo.

The authors specifically thank Inglis for working closely with Dr. Kaiser in writing the book's chapter devoted to the science of icewine.

Inglis said the book does well to convey the complexities of making icewine.

Dr. Terry Boak, Provost and Vice President, Academic, was on hand to give a welcoming address for Dr. Ziraldo. Dr. Boak said that Dr. Ziraldo, as co-founder of Inniskillin wines with Dr. Kaiser, is well deserving of the many honours he has received for his role in bringing icewine, among other Canadian wines, to the world.

Dr. Kaiser was on vacation with his many grandchildren and could not attend the event.

The illustrated hardcover book, listed at \$50, is published by Key Porter Books and is available at The Campus Book Store. ■

CCOVI Research Q&A

Multicoloured Asian Lady Beetle (MALB)



Photo: Cheryl Moorehead

MALB

Gary Pickering, a CCOVI researcher, has released new findings from ongoing MALB research projects at CCOVI.

Previously, Pickering's team reported that the culprit behind 'lady bug taint' (LBT) is the compound, 2-isopropyl-3-methoxy-pyrazine (IPMP), produced by MALB.

At what stage of processing is LBT imparted by MALB to wine?

Unless MALB comes into direct contact with juice, it has a minimal effect on the flavour, aroma and chemical profiles of tested wines. It's advised to avoid juice contact with beetles during crushing/destemming, whole cluster pressing or any stage in which juice is not inside intact berries.

What's the limit for MALB?

Based on the research, we suggest a more conservative quality control limit of 200 to 400 beetles per tonne of grapes. That translates to a general rule of thumb in the vineyard of 'no more than one beetle per vine.'

Does it matter if MALB is alive or dead?

MALB contributes far more LBT to wine when alive than when dead. It seems the beetles that have been dead for three days or more do not affect wine quality.

These findings should help in setting timing guidelines for insecticide spray treatments of MALB.

Does the Seven Spot Lady Beetle (SSLB) cause LBT?

The SSLB has only two to three per cent of the IPMP potency of MALB.

Pickering's team is working to identify acceptable population levels of SSLB in vineyards.

Regular updates on the MALB projects will be posted at: www.brocku.ca/ccovi ■

Vineyard irrigation

Andy Reynolds, a CCOVI researcher, and his team evaluated five irrigation treatments (non-irrigated; irrigation cut-offs imposed at post bloom, lag phase and veraison; and full season irrigation) in an Ontario Chardonnay vineyard over a four year period.

Did irrigation affect crop yield?

The full season irrigation treatment increased yield by nearly 20 per cent in two of the four years, mostly due to larger berry sizes, as compared to the non-irrigated treatment.

Were Brix, acidity and pH affected by irrigation?

Brix levels were increased by irrigation with the full season irrigation treatment, showing similar or greater Brix than all other treatments in two of the years. Berry titratable acidity (TA) and pH were within suitable ranges for all five treatments, but TA was slightly higher in irrigated treatments in two of the years.

Did irrigation impact wine flavours and aromas?

Wines from irrigated treatments had greater intensities

of apple, citrus and floral aromas and flavours, as well as lower levels of earthy aroma and flavour.

With potential for simultaneous increases in yield, Brix and desirable wine aromas and flavours, these results strongly suggest that irrigation is a practical option for Ontario vineyards. ■

Terroir

In a four year study, Reynolds' team categorized sample vines in a Riesling vineyard in Niagara, according to their relative sizes and the soil textures they were grown in. The vineyard had been mapped for soil texture using global positioning systems and geographic information systems. Wines were made from the sample vines' crops each year and tested for composition, including pH, TA and potentially volatile terpenes (PVI). The wines were also assessed by a tasting panel for aroma and flavour.

What were the effects on terroir?

Soil texture and vine size affected wine composition, aroma and flavour, though the effects were not consistent from vintage to vintage.

Vintage and wine age had greater impacts on wine aroma and flavour attributes than either vine size or soil texture. ■



Photo: Jason Chiu

Vineyard in Niagara

New consumer behavior lab

Consumer Perception and Cognition Laboratory

CCOVI has expanded its research capacities with its new Consumer Perception and Cognition Laboratory. Isabelle Lesschaeve, Director of CCOVI, was awarded \$68,922 through the Canadian Foundation for Innovation's Leading Opportunity Fund, which was matched by the Ontario Research Fund.

The 1,000 square-foot lab, located in the Brock Research and Innovation Centre, will host leading edge research to understand consumer preferences, values and attitudes towards wine, and consumer cognitive processes when choosing, buying and tasting wines.

The lab's design will be similar to a movie set, says Lesschaeve, in which the environment of a wine boutique, restaurant or tasting bar could be simulated.

Different settings will be created to test consumers' reactions to various stimuli in their surroundings.

Lesschaeve says research from the lab will be made available to assist development in the Canadian grape and wine industry.

Lesschaeve has teamed with Antonia Mantonakis, from Brock Business School's, Department of Marketing, International Business and Strategy. Erika Neudorf, Research Assistant, will work with the two researchers to coordinate the use of this facility.

The new lab is due to open in early 2008. ■

CCOVI grad comes 'home' to be Communications Officer

Isabelle Lesschaeve, Director of the Cool Climate Oenology and Viticulture Institute at Brock University, is pleased to announce the appointment of James Cooper to the new role of CCOVI Communications Officer.

Cooper is coming back 'home' to CCOVI after graduating from Brock's Oenology and Viticulture program in 2001. Since then he has worked in the wine industry, completed graduate studies in Science Communication at Laurentian University and interned with the Discovery Channel as a science news writer. Cooper is looking forward to working with the CCOVI team to advance the Institute's communications at local, national and global levels.

"Mr. Cooper's dual training in oenology and viticulture, and science communication positions him perfectly to tackle



Photo: Brian Grant

James Cooper

our new communications plan, which aims to add value to CCOVI's role as a key resource for the grape and wine community," said Lesschaeve.

Cooper says it's pertinent to continue growing the Institute's communications and outreach efforts.

Cooper can be reached at tel: 905-688-5550, ext. 5222 e-mail:

james.cooper@brocku.ca

He welcomes your inquiries. ■

CCOVI Briefs

CCOVI is now on Facebook.

Go to: <http://www.facebook.com/group.php?gid=6982886301>

Isabelle Lesschaeve, CCOVI Director, visited South Africa recently to participate in a restructuring review panel at the Institute for Wine Biotechnology at Stellenbosch University.

Tom Green, a 2001 CCOVI graduate, was recently appointed as the new Vice President of Winemaking & Winery Operations.

Conor van der Reest, a 2001 CCOVI grad, was recently appointed as head winemaker at Moorilla Winery in Tasmania.

CCOVI Publications

G. J. Pickering, A. Karthik, D. Inglis, M. Sears and K. Ker. (2007). "Determination of Ortho- and Retro-nasal Detection Thresholds for 2-isopropyl-3-methoxy-pyrazine in Wine." *Journal of Food Science*, 72(7), pp. S468-S472.

D.L. Inglis, G.M. Pigeau, E. Bozza and K. Kaiser. (2007). "Concentration effect of Riesling Icewine juice on yeast performance and wine acidity." *Journal of Applied Microbiology*, 103 (2007), pp. 1691-1698.

A.G. Reynolds, P.A. Kilmartin, V. Pagay, C. Nurgel and R. Johnson. (2007). "Polyphenol content and browning of Canadian icewines." *Journal of Food, Agriculture & Environment*, 5 (3&4), pp. 52-57.

CCOVI Events

CCOVI Fellows and Professional Affiliates Lecture Series

Admission is free and all are welcome.

All lectures are at Brock University (parking is \$5.00 per entry).

Dr. Pat A. Bowen, CCOVI Fellow and Plant Physiologist, Viticulture, Pacific Agri-Food Research Centre, Summerland

Date: Wednesday, February 20, 2008

Time: 11:00 a.m. Location: H313

Topic: Applications of GIS Techniques to Study Terroir

Dr. George Soleas, CCOVI Professional Affiliate and VP Quality Assurance LCBO

Date: Wednesday, March 5, 2007

Time: 11:00 a.m. Location: H313

Topic: Global Survey of Levels of Undesirable Metabolites in Wine

Dr. Tony Shaw, CCOVI Fellow and Associate Professor, Department of Geography, Brock University

Date: Wednesday, March 12, 2008

Time: 12:00 p.m. Location: H313

Topic: Climatic Trends in Ontario's Wine Industry

Dr. Linda Bramble, CCOVI Professional Affiliate and Wine Writer, Author and Wine Educator

Date: Wednesday, March 19, 2008

Time: 11:00 a.m. Location: H313

Topic: How We Got Here from There

Dr. Carman Cullen, CCOVI Fellow and Associate Professor of Marketing, Faculty of Business, Brock University

Date: Tuesday, March 25, 2008

Time: 11:00 a.m. Location: H313

Topic: Sparkling Wine and Generation 'Y'

Dr. Ralph Brown, CCOVI Fellow and Professor, School of Engineering, College of Physical and Engineering Science, Univ. of Guelph

Date: Wednesday, April 2, 2008

Time: 11:00 a.m. Location: H313

Topic: Remote Sensing and Precision Viticulture

Dr. Karl Kaiser, CCOVI Professional Affiliate and Co-founder, Inniskillin Wines

Date: tbd Topic: tbd

Dr. Richard Smart, CCOVI Professional Affiliate and "the Flying Vine Doctor"

Date: tbd Topic: tbd

The Lecture Series is coordinated by Barb Tatarnic, tel: 905-688-5550, ext. 4652; fax: 905-688-3104;

e-mail: ccovi@brocku.ca

For complete event listings, go to: www.brocku.ca/ccovi

CCOVI *News* is a publication of the Cool Climate Oenology and Viticulture Institute at Brock University. The newsletter is produced quarterly.

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