The Tender Fruit Grape Vine

VOLUME 15, ISSUE 3 JAN/FEB 2011

Winter Injury Update

Ken Slingerland, Tender Fruit & Grape Specialist, OMAFRA

January 20, 2011

Victoria Ave. Farm

		% alive
Harblaze	Ave	96
Garnet Beauty	Ave	96
Harrow Diamond	Ave	99
Vivid	Ave	96
Redhaven	Ave	100
Fenwick		
Redhaven	Ave	100
PF 15	Ave	99
Redhaven	Ave	100
Coralstar	Ave	97

Grape Research Station
Cherry Avenue, Vineland

	% alive
Merlot	67
PN 115	81
Cabernet Franc	67
Chardonnay	13
Riesling	76

Thanks to Brian Piott and Glen Alm, Dept of Plant Agriculture, University of Guelph

Dead peach bud

January 27, 2011

NOL—Creek Rd/Line 6/Conc 2

		% alive	Ave
Loring	High	86	46
Loring	Low	6	
Vivid	High	85	67
Vivid	Low	48	
Redhaven	High	94	85
Redhaven	Low	76	
Loring	High	100	70
Loring	Low	41	
NOL—Church Road			
Harrow Beauty	High	100	99
Harrow Beauty	low	98	
Garnet Beauty	High	92	93
Garnet Beauty	Low	93	
NOL—Lakeshore Road			
Garnet Beauty	High	100	100
Garnet Beauty	Low	100	
Vivid	High	96	97
Low	Low	97	

Grape
NOL Town Line/Carleton

	% alive
Chardonnay (wind machine)	95
NOL East-West Line	
Cabernet Franc (no wind machine)	97

ONTARIO FRUIT & VEGETABLE CONVENTION

IN THIS ISSUE...

Ministry of Agriculture, Food and Rural Affairs

Ontario

THE Tender Fruit Grape Vine is brought to you by the following staff of the Ontario Ministry of Agriculture, Food and Rural Affairs:

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ALL QUERIES, COMMENTS, QUESTIONS AND REQUESTS CAN BE DIRECTED TO THE ABOVE.

For a complete list of Crop Technology Staff visit the OMAFRA web site at: www.ontario.ca/crops

COMING EVENTS

February 1-3, **Mid-Atlantic Fruit and Vegetable Convention and Trade Show**, Hershey Lodge and Convention Center, Hershey, PA. For more information and to register visit http://www.mafvc.org/html/.

Feb 23-24**, Ontario Fruit & Vegetable Convention**, St. Catharines, ON www.ofvc.ca

March 1-2, **Ontario Agricultural Irrigation Conference**, Elmhurst Inn, Ingersoll. Answer all your irrigation questions in just three days. Includes an irrigation trade show on all three days.
March 1—Drip Irrigation mini-course—Ted VanderGulik, BCMAFF
March 2—Multiple presenters on diverse topics including fertigation, irrigation efficiency and water supply, etc.
March 3—Permit to Take Water workshop (OFVGA)
Register for one day or the entire conference. For more information contact Rebecca Shortt at 519-426-4920.

March 4-5, **60th Annual Finger Lakes Grape Growers Conference and Trade Show**, Holiday Inn, Waterloo, NY. For more information visit http://flg.cce.cornell.edu/

Subscribe on-line to view the full coloured newsletter (in pdf format) or to receive notice by email when a new issue of the Tender Fruit Grape Vine is posted. All you need to do is submit your email address at http://www.omafra.gov.on.ca/english/subscribe/index.html

Weather Information

	Maximum °C		Minimum °C		Precipitation (mm)	
Location	Nov	Dec	Nov	Dec	Nov	Dec
Vineland *(85 yr ave)*	17.7 22nd, 23 rd	11 31st	-2.8 29th	-10.9 13th	67.9 *(67.4)*	29.9 *(64.9)*
Harrow	16.4 22nd	10.6 31st	-4.6 24th	-15.5 16th	85.2	72.3
Simcoe	na	na	na	na	na	na

We would like to thank the University of Guelph at Simcoe, Weather INnovations Incorporated, and AAFC Harrow for the weather data

VineAlert - Bud hardiness for January 2011

For most recent bud hardiness and other grapevine cold hardiness information, visit http://www.ccovi.ca/vine-alert

Jim Willwerth, Staff Viticulturalist, CCOVI, Brock University

Bud Hardiness for Chardonnay–JANUARY

	Date	LTE10	LTE50	LTE90
Niagara River	13-Jan-11	-23.1	-24.4	-25.4
Four Mile Creek	13-Jan-11	-23.0	-24.2	-25.6
Niagara Lakeshore	11-Jan-11	-23.0	-23.9	-25.1
St. David's Bench	17-Jan-11	-23.3	-25.3	-26.5
Creek Shores	18-Jan-11	-19.2	-23.3	-26.1
Short Hills Bench	18-Jan-11	-22.9	-24.5	-26.4
Twenty Mile Bench	20-Jan-11	-21.7	-23.2	-24.8
Lincoln Lakeshore	18-Jan-11	-20.5	-23.2	-25.1
Beamsville Bench	17-Jan-11	-21.9	-23.7	-25.8
Vinemount Ridge	11-Jan-11	-22.1	-23.9	-25.7
Lake Erie North Shore – Colchester	5-Jan-11	-21.5	-22.8	-24.3

Bud Hardiness for Cabernet Franc - JANUARY

Appellations	Date	LTE10	LTE50	LTE90
Niagara River	13-Jan-11	-21.3	-23.6	-25.4
Four Mile Creek	13-Jan-11	-21.8	-24.5	-25.6
Niagara Lakeshore	11-Jan-11	-21.7	-23.6	-24.9
St. David's Bench	17-Jan-11	-21.8	-24.0	-25.2
Creek Shores	18-Jan-11	-20.4	-22.8	-24.9
Short Hills Bench	18-Jan-11	-21.8	-23.5	-24.6
Twenty Mile Bench	20-Jan-11	-22.5	-23.4	-24.5
Lincoln Lakeshore	18-Jan-11	-21.1	-23.0	-24.3
Beamsville Bench	17-Jan-11	-21.5	-23.6	-24.9
Vinemount Ridge	11-Jan-11	-22.4	-23.8	-24.9
Lake Erie North Shore – Colchester	5-Jan-11	-20.7	-22.2	-23.9

Bud Hardiness for Sauvignon blanc - JANUARY

Appellations	Date	LTE10	LTE50	LTE90
Niagara River	10-Jan-11	-21.0	-22.8	-24.1
St. David's Bench	17-Jan-11	-20.9	-23.4	-24.8
Short Hills Bench	11-Jan-11	-21.2	-23.0	-23.9
Twenty Mile Bench	20-Jan-11	-21.6	-22.8	-23.9
Creek Shores	14-Jan-11	-22.2	-23.6	-25.2

Bud Hardiness for Syrah - JANUARY

Appellations	Date	LTE10	LTE50	LTE90
Niagara River	10-Jan-11	-21.2	-22.6	-24.0
Creek Shores	13-Jan-11	-19.9	-23.0	-24.5
St. David's Bench	14-Jan-11	-20.1	-22.6	-24.1

Bud Hardiness for Riesling - JANUARY

Appellations	Date	LTE10	LTE50	LTE90
Niagara River	13-Jan-11	-22.3	-24.3	-25.9
Creek Shores	17-Jan-11	-20.0	-24.2	-25.9
Beamsville Bench	17-Jan-11	-21.6	-23.8	-26.0
Vinemount Ridge	11-Jan-11	-21.7	-24.6	-26
Short Hills Bench	05-Jan-11	-21.3	-23.5	-24.6

Bud Hardiness for Merlot - JANUARY				
Appellations	Date	LTE10	LTE50	LTE90
Niagara Lakeshore	11-Jan-11	-21.6	-22.8	-24.1
St. David's Bench	17-Jan-11	-20.5	-22.9	-24.4
Creek Shores	13-Jan-11	-20.3	-22.8	-24.4
Lincoln Lakeshore	17-Jan-11	-21.1	-22.7	-24.4

Bud Hardiness for Pinot Noir - JANUARY				
Appellations	Date	LTE10	LTE50	LTE90
Niagara Lakeshore	11-Jan-11	-22.7	-24.0	-25.0
St. David's Bench	17-Jan-11	-23.6	-25.7	-26.7
Creek Shores	13-Jan-11	-18.9	-24.0	-26.6
Twenty Mile Bench	20-Jan-11	-22.7	-24.4	-25.4

Appellations	Date	LTE10	LTE50	LTE90
Creek Shores	13-Jan-11	-20.1	-22.4	-23.7

For the most up-to-date information and regular sampling for bud hardiness and bud survival. visit the CCOVI website at: www.ccovi.ca/vine-alert. Data posted across Niagara region and adding data soon for Lake Erie North Shore and Prince Edward County.

This initiative is supported by funding under Agriculture and Agri-Food Canada's (AAFC) Developing Innovative Agri-Products initiative, which supports industry-led research and innovation. This outreach project is a collaboration between AAFC, the Grape Growers of Ontario and Brock's CCOVI and is part of CCOVI's heightened emphasis on outreach to the grape and wine industry.

Dr. K. Helen Fisher 2010 "Award of Merit"

Presented by Niagara Peninsula Fruit and Vegetable Growers' Association

You are invited to join the directors of the NPF&VGA as they honour Dr. K. Helen Fisher with the 2010 Award of Merit for her many years of service to the grape industry of Ontario.

Cocktail Reception
Tuesday, March 1, 2011

7:00 to 9:00 pm
Presentation at 8:00 pm

Niagara College Bench Mark Restaurant
135 Taylor Road, Niagara-on-the-Lake Campus

Helen's career has touched many people in the grape and wine industry in Ontario and beyond. Her research has been applied in nature and readily understood by the industry. Her career started as a research student under Ollie Bradt at Vineland, then five years as a Fruit Crop Advisor at Harrow, two years as an instructor at Fairview, Alberta, then back to Vineland for the rest of her career as researcher in breeding and plant physiology with OMAFRA and currently as Associate Professor of Viticulture, Department of Plant Agriculture, University of Guelph.

Helen Fisher – Extension advisor, researcher, teacher and friend of the NPF&VGA

For complimentary tickets or more information, please call Glenna Cairnie at 905.945.5363
or glennacairnie@sympatico.ca

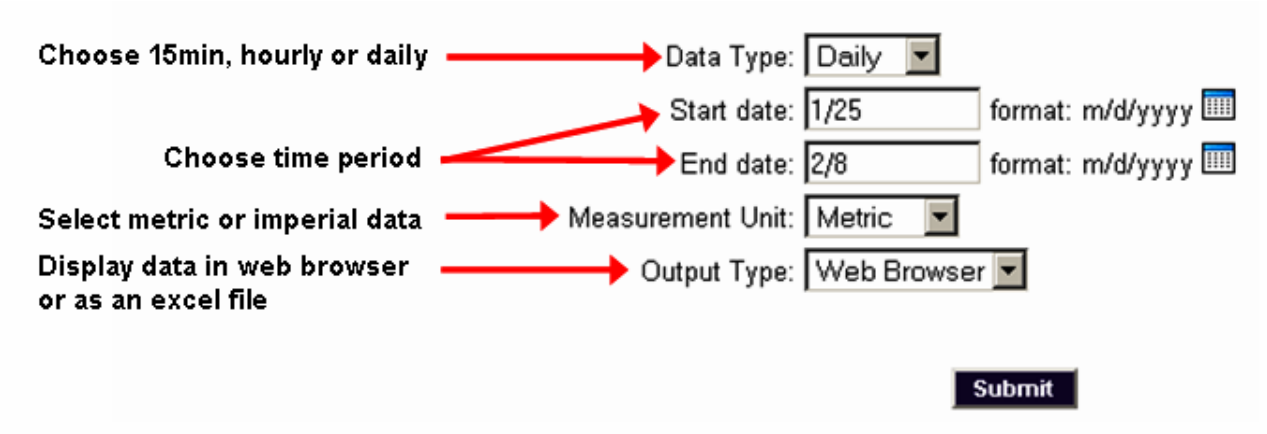
Looking for January 16/17 Temperature Data?

Contact Wayne Heinen, Weather INnovations Incorporated for assistance
Cell: 289-241-6338 Email: wheinen@weatherinnovations.com

The critically low temperatures experienced recently in the Niagara and Prince Edward County regions have many growers searching for local temperature data. The www.vineandtreefruitinnovations.com website is sponsored by the Grape Growers of Ontario and offers freely available weather data to any user who creates an account. Follow the steps below to access 15-minute average, hourly average or daily max & min temperatures, as well as a number of weather-based products:

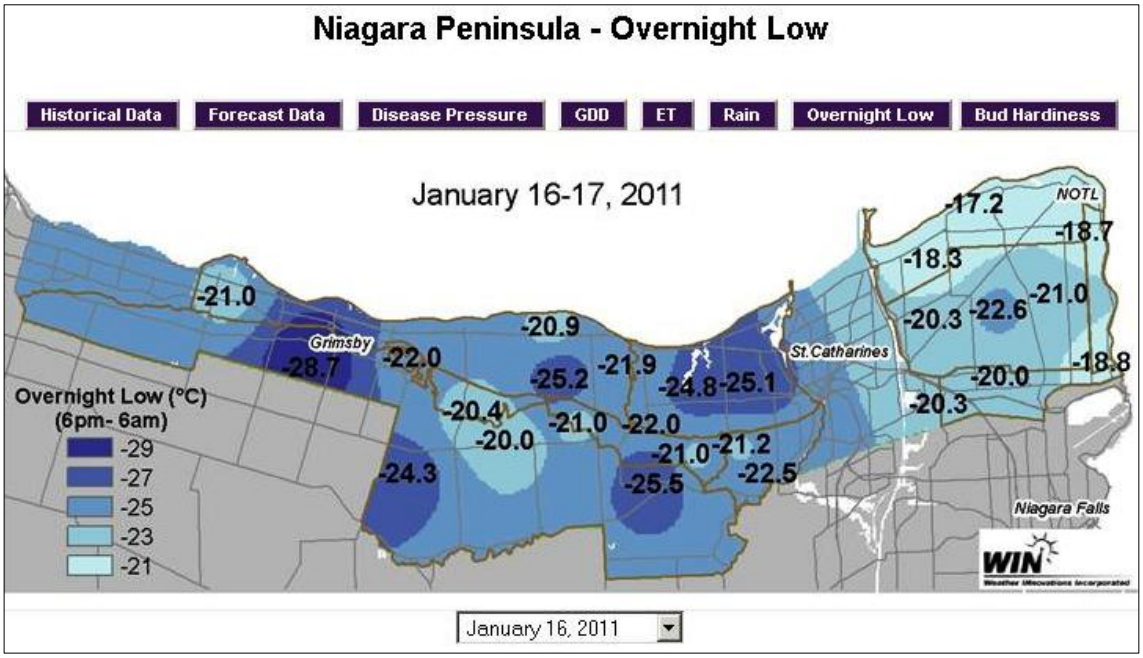
- Go to www.vineandtreefruitinnovations.com
- If you are a previous user, log in with your username and password. If you are new to the website, click on "Register Now" to create an account
- Once signed in, click on the Niagara Region (or PEC or LENS) on the appellation map or ensure that the Niagara map is visible.
- The purple tabs located above the map are the products that are available. Click on the purple tab of interest and then click on a station name to retrieve the site-specific information. Note that the title of the map changes to indicate the information that will be provided when you click on a station name.

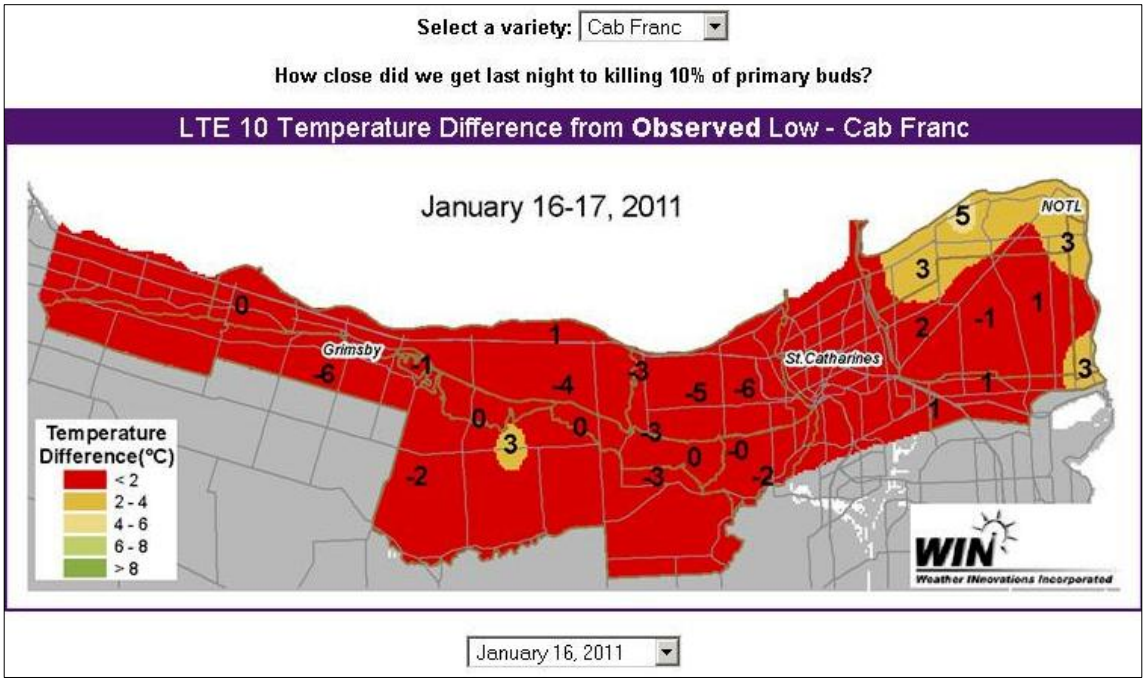
For Historical Temperature Data: Click on the "Historical Data" tab. Next, click on a station name to retrieve the desired data from that particular station. The following screen should appear. After changing your desired data type, start & end dates, etc, click on **Submit** and then **Get Data**



The following blue map is a product available on a daily basis at www.vineandtreefruitinnovations.com, showing the minimum 15-minute average overnight temperature reached at each station. The overnight period on January 16-17 brought challenging temperatures for growers in the Niagara Peninsula. Temperatures had already dipped to -20°C by 7:15PM at the Grimsby, West Lincoln and Jordan Escarpment stations. Nearly all stations, except for those in parts of NOTL, experienced temperatures below -20°C at some point during the night. The coldest temperature reached -28.7°C at the Grimsby station. The five areas in darkest blue on this map are at the highest risk for experiencing significant bud damage.

To further illustrate the risk of bud damage, the following red map is another product provided on a daily basis, showing the temperature difference between the LTE10 values (the temperature at which 10% of primary buds would die) and the overnight low. A positive number on the map indicates the number of degrees that the station remained above the LTE10 value; a negative number indicates the number of degrees the overnight low fell below the LTE10 value. A value of zero on the LTE10 map indicates that a particular station reached the LTE10 value. St. Catharines 3rd Ave and Grimsby show the greatest temperature difference (minus 6°C) from the LTE10 values for Cabernet Franc. Therefore, temperatures during this overnight period fell 6 degrees below the LTE10 values for these stations. In fact, these stations, along with Vineland Cherry Ave and Jordan Escarpment, actually reached the LTE90 values for Cabernet Franc. The St. Catharines Glass Ave and West Lincoln stations fell below the LTE50 value for Cabernet Franc. Please note that individual conditions will vary based on site-specific temperature, soil and viticultural practices. WIN gratefully acknowledges Brock's CCOVI as the source for the bud hardiness data: http://www.ccovi.ca/vine-alert. Monitoring bud cold hardiness is supported by funding under Agriculture and Agri-Food Canada's (AAFC) Developing Innovative Agri-Products initiative.


Niagara Peninsula - Overnight Low
Historical Data
Forecast Data
Disease Pressure
GDD
ET
Rain
Overnight Low
Bud Hardiness
January 16-17, 2011
Overnight Low (°C)
(6pm- 6am)
-29
-27
-25
-23
-21
Grimsby
St.Catharines
Niagara Falls
NOTL
-21.0
-28.7
-22.0
-20.9
-25.2
-21.9
-24.8
-25.1
-20.4
-20.0
-21.0
-22.0
-21.0
-21.2
-24.3
-25.5
-22.5
-17.2
-18.7
-18.3
-20.3
-22.6
-21.0
-18.8
-20.0
-20.3
WIN
Weather INnovations Incorporated
January 16, 2011


Select a variety:
Cab Franc
How close did we get last night to killing 10% of primary buds?
LTE 10 Temperature Difference from Observed Low - Cab Franc
January 16-17, 2011
Temperature
Difference(°C)
< 2
2 - 4
4 - 6
6 - 8
> 8
Grimsby
St.Catharines
NOTL
0
-6
-1
1
-4
-3
-5
-6
0
3
-0
-3
0
-0
-2
-3
-2
5
3
3
2
-1
1
3
1
1
WIN
Weather INnovations Incorporated
January 16, 2011


Ontario Fruit and Vegetable Convention
Canada's Premier Horticultural Event
Brock University, St. Catharines, ON
February 23 & 24, 2011

Wednesday, February 23 - Room 203

Chair: Dr. Wendy McFadden-Smith

2:00 p.m. **Development and Management of Fungicide Resistance in NY Vineyards**
Dr. Wayne Wilcox, Cornell University, NY

2:30 p.m. **Vine Winter Hardiness – the Influence of Crop Management and the Previous Growing Season on Vine Hardiness**
Dr. Kevin Ker, KCMS Inc.

3:00 p.m. **Vine Alert and New Vineyard Research/Outreach Projects at CCOVI**
Jim Willwerth, Brock University

3:30 p.m. **Agri-Chemical update – What's new for 2011? -** *Chemical Reps.*

Thursday, February 24 - Room 203

Chair: Dr. Wendy McFadden-Smith

9:30 a.m. **2010 IPM Challenges**
Dr. Wendy McFadden-Smith, OMAFRA

10:00 a.m. **Cool IPM Tools for Grapes**
Margaret Appleby, OMAFRA

10:30 p.m. **Agricultural Occupational Health and Safety Act - 5 Years After Its Implementation, Where Are We?**
Laurel Woodhouse, Marwood Consulting

11:00 a.m. **Soft Pruning Techniques**
Riccardo Turata, Consultant, Italy

Chair: Ken Slingerland

2:00 p.m. **Organic Amendments and Nutrients**
Donna Speranzini, OMAFRA

2:30 p.m. **Vineyard Nutrition – Am I Spending Too Much**
Dr. Kevin Ker, KCMS Inc.

3:00 p.m. **Vision Robotics in the Vineyard**
Tony Koselka, Vision Robotics, California

3:30 p.m. **Grape Growing in BC**
Robert (Bob) Heiss, Operations Manager, Gray Monk Estate Winery, BC

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2011 OFVC Winery Program

Wednesday, February 23 - Room 217

9:30 a.m. Welcome, introductions, announcements

9:45 a.m. **Fine Winemaking & Techniques for Success**
Gordon Specht, Lallemande

11:00 a.m. **Ontario consumers' mindsets for purchasing local and red wines**
Dr. Isabelle Lesschaeve, Vineland Research and Innovation Centre

11:30 a.m. **Soft Pruning Against Vineyard Deterioration**
Riccardo Turata, Consultant, Italy

2:00 p.m. **A View of the West**
Bob Heiss, Gray Monk Estate Winery, British Columbia

2:30 p.m. **Brand positioning: What makes you different, and why should the consumer care?**
Carey George and Sue McCluskey, Up Inc.

3:15 p.m. **iYellowWineClub.com**
Angela Aiello, iYellowWineClub.com

3:45 p.m. **Understanding Wine Consumers**
Wendy Cheropita, Wine Country Ontario

2011 OFVC Tender Fruit Program

Wednesday, February 23—Room 215

Chair: Wendy McFadden-Smith

9:30 a.m. **Organic Amendments and Nutrients**
Donna Speranzini, OMAFRA

10:00 a.m. **Agricultural Occupational Health and Safety Act - 5 years after its implementation, where are we?**
Laurel Woodhouse, Marwood Consulting

10:30 a.m. **Consumer perception of peach quality based on appearance**
Dr. Ben Campbell, Vineland Research and Innovation Centre

11:00 a.m. **Vision robotics in the orchard**
Tony Koselka, Vision Robotics, California

Chair: Ken Slingerland

2:00 p.m. **New Cherry Developments in Michigan**
Dr. Nikki Rothwell, District Horticulturalist and NWMHRS Coordinator, Michigan State University

2:30 p.m. **Growing Blue Plums**
Ken Slingerland, OMAFRA

3:00 p.m. **Tender Fruit Cultivar Panel**
Moderator : Ken Slingerland, OMAFRA
Paul Friday, Flamin Fury Peaches, Michigan
Annette Bjorge, Stellar Peaches, Michigan
Tom Callahan, Adams County Nursery, Pennsylvania

Thursday, February 24—Room 215

Chair: Ken Slingerland

9:30 a.m. **Mechanical Blossom Thinning to Reduce Labour**
Dr. John Cline, Kendra Sauerteig, University of Guelph

10:00 a.m. **Ontario Consumers preferences for peaches**
Dr. Isabelle Lesschaeve, Vineland Research and Innovation Centre

10:30 a.m. **An Innovative Marketing Strategy for the Sundown Pear**
Darlene Homonko, Director Business Development, Vineland Research and Innovation Centre

11:00 a.m. **Emerging opportunities in food and health**
Mr. John F.T. Scott, President and CEO, Canadian Federation of Independent Grocers (CFIG)

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Organic Fruit Production at the OFVC

The challenges of organic fruit production are being met, one step at a time. Learn about some of the more recent research in organic fruit production a this ½ day program at the Ontario Fruit and Vegetable Conference in St. Catharines, Thursday Feb 24, 2011. This follows a morning program on composts for soil health.

For more information, contact Hugh Martin, OMAFRA Organic Crop Production Program Lead (519-826-4587, hugh.martin@ontario.ca)…… or visit the website www.ofvc.ca

Thursday, February 24, 2011 - Room 204

Chair: Hugh Martin, OMAFRA

2:00 p.m. **Ontario Consumers' Motivations for Buying Local and Organic Produce**
- Dr. Ben Campbell, Vineland Research & Innovation Center, Vineland

2:30 p.m. **Economics of Organic Agriculture**
- Dr. Gregory Peck, Cornell University, NY

3:00 p.m. **Orchard Floor Management Options for Organic Fruit**
- Dr. Ron Perry, Michigan State University

3:30 p.m. **Grower Panel - the Challenges of Growing Organic**

Permit to take Water Workshop at OFVC

Harald (Hal) Schraeder the Permit To Take Water (PTTW) Program Specialist for the Ministry of the Environment's (MOE) will provide tips on filling out a successful application for a permit to take water. An opportunity to ask one on one questions from Hal will be provided at the end of the workshop.

Water: Out of your watershed and out of your reach

Access to a secure, uninterruptible, useable water source is a crucial part of many horticultural operations. A common belief of many standing in their irrigated fields is that there is plenty of water, just look around. But it is time to wake up and smell the Nestle's; water out of your watershed is water out of your reach.

This year's Ontario Fruit & Vegetable Convention, hosts a Water Session on Thursday, February 24. This session will challenge you to think about the security and reliability of your own water resources.

Dr. Beth Parker, from the University of Guelph Groundwater Research and Innovation Group, and Ontario Federation of Agriculture's Don McCabe will set the bigger picture for Ontario's water resources. Dr. Parker will highlight the susceptibility of Ontario's ground water to contamination, too often overlooked in agriculture. Don will raise your awareness regarding Ontario's Clean Water Act, the mandated source water protection committees, and why producers need stay informed and engaged in their local source water protection.

Three Ontario producers will share their experiences of what happened to them when their "tap got turned off" and how they managed to ensure their future water security.

The date again is Thursday February 24 at the Ontario Fruit and Vegetable Convention held at Brock University in St. Catharine's. For more information on this session as well as the entire two day conference programme, visit www.ofvc.ca.

Darwin Mechanical Blossom Thinning Update

Ken Slingerland, Tender Fruit and Grape Specialist , OMAFRA

Several peach orchards and one apple orchard in Ontario were blossom thinned in the Spring of 2010. Data were collected with positive results: 32-76% of the bloom was removed

The goals of the project were to repeat the trial that initiated in 2009 and to analyze and compare the effectiveness of the Darwin to remove peach blossoms using different orchard training systems, tractor speeds, string orientation, rotation speeds of the strings, etc. Approximately 50% of the blossoms should be removed to attain positive benefits of improved fruit size and reduced time compared to hand thinning. All trees were pruned except part of a row of Harrow Diamond and the blossom thinning was done once at full bloom between April 22 and 26 for the peaches and April 28 for the apples. Based on the 2009 mechanical peach thinning trials and the previous reports from the trials at Penn State in Biglerville, Pennsylvania, 2.5 to 3 miles per hour tractor speed and 180 to 220 rpm had the most desired affect for mechanically thinning peaches.

Highlights of the blossom thinning include:

- EP 51 nectarine (approximately 6th leaf) which has a very heavy bloom was thinned at 3 mph and 200 rpm rotation speed of the strings. The trees were pruned to central leader. 41% of the bloom was removed from the top half of the tree and 47% was removed from the lower half.
- Allstar (4th leaf) was thinned at 2.5 mph and 185 rpm which resulted in 36% blossom thinning on the east side and 47% on the west side.
- Harrow Beauty (6th leaf), was thinned at 2.5 mph and 200 rpm at the same site which resulted in a higher thinning rate at 76% on the east side and 66% on the west side.
- Harrow Diamond, (mature tree) was thinned at 3.5 mph and 190 rpm which resulted in 37% thinning in the higher part of the tree and 33% thinning in the lower part of the tree. The same row with the same treatment for unpruned trees resulted in a slightly lower rate of thinning at 32%. In follow up counts prior to hand thinning, 66% of the unpruned branches had been removed by pruning. Blossom thinning unpruned trees does not have the desired effect. Many of the thinned blossoms on the outer branches are pruned off and the remaining inner branches are usually missed or partially thinned by the mechanical blossom thinner.
- Idared apples were also thinned at the "King" bloom stage with 23% of the apple flower clusters removed and 39% of the blossoms removed

Highlights of EP 51 nectarine after blossom thinning:

- Only 8-15% of peach blossoms are needed to set a commercial crop
- **Prior to fruit thinning** – average of 33% of the blossoms/fruit remained (38% in the high part of the tree and 28% in the lower part) after the mechanical thinning treatment and after the normal June drop.
- **After fruit thinning –** average of 11% of the fruit remained (12% in the high part of the tree and 10% in the lower part)

Summary

Previous data from 2009 resulted in labour savings of 12 to 51% in thinning costs. There was also an increase in fruit size of 5 to 18% using mechanical blossom thinning versus no blossom thinning at all (after they were both hand thinned).

Most of the results have been positive for growers using the Darwin in commercial orchards. Future peach trials will continue as growers look forward to new technology to reduce labour costs in the orchard and increase profitability. To date, there is not a single solution for tractor speed or string rotation speed for each site, cultivar, tree age and training system. Trial and error needs to continue to see what fits best. Try different travel and string speeds in your orchard to determine which gives the best results.

Mechanical String Thinner Reduces Crop Load at Variable Stages of Bloom Development of Peach and Nectarine Trees

T. Auxt Baugher, K. Ellis, J. Remcheck, K. Lesser, J. Schupp, E. Winzeler, K. Reichard

Thinning of blossoms or fruitlets is a labor-intensive requirement in the production of peach and nectarine (*Prunus persica*) fruit of optimum size and quality. Prior research conducted by the authors on string blossom thinners for managing peach tree crop load demonstrated that this new technology reduces labor requirement and improves fruit size. The research reported in the current article was conducted over 2 years on 'Sugar Giant' peach and 'Arctic Sweet' nectarine to evaluate string blossom thinner efficacy at variable stages of bloom development ranging from pink to petal fall. Blossom removal at the pink stage of bloom development was lower than at other stages in 2008; however, a 150-rpm versus 120-rpm spindle rotation speed resulted in blossom removal similar to the 80% full bloom (FB) treatment in 2009. Blossom removal at the petal fall stage was similar to the open bloom stage with the exception of the 2009 'Sugar Giant' trial, in which blossom removal was higher at 80% FB. Flower density and fruit set of the bloom stage compared with hand-thinned control treatments followed a similar trend with the exception that there were fewer differences in 2009 and in lower canopy regions. Follow-up hand thinning time was reduced by all string thinning/year combinations except 'Arctic Sweet' at pink in 2008 and 2009 and at petal fall in 2009. The best treatments reduced follow-up hand thinning time compared with green fruit hand thinning alone by 51% and 41% for 'Sugar Giant' and by 42% and 22% for `Arctic Sweet' in Years 1 and 2, respectively. In 2008, the percentage of fruit in the "7.0 cm or greater" size category was increased by all bloom stage treatments in both cultivars. The 2009 size distribution of `Arctic Sweet' fruit was unaffected, but the percentage of 'Sugar Giant' fruit in higher market value size categories was increased by the 80% FB and higher rpm pink treatments. Savings in hand thinning time and/or increases in fruit size in both years associated with the bloom stage treatments resulted in a net positive impact of $123/ha to 1368/ha compared with hand thinning alone.

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Peach harvester a first

Munckhof machine proving its worth as labour costs and culls decline in test orchard.

By Susan McIver

(Reprinted with permission from BC Fruit Grower magazine, Winter 2010-11 issue)

The development of what could be the world's first peach harvester illustrates how growers and industry leaders can work together for mutual benefit. The harvester was in operation for the 2008 season, thanks to the collaboration between Oliver orchardist Harry Shaw and manufacturer Gerry Munckhof.

"To my knowledge it's the only machine of its kind in the world," Munckhof said. Munckhof Manufacturing in Oliver, which he established in 1979, specializes in the design and manufacture of equipment for use in orchards, vineyards and silviculture.

"We're always looking for ways to work with farmers. It's not a one way street." Shaw has long been concerned about the amount of fruit lost to damage at harvest and searching for ways to increase the overall efficiency of orchard operation. Shaw and his wife, Kim Kurylo, farm seven hectares of fruit, most of which is planted in peaches. They also have small plantings of nectarines, plums, prunes, pears and apples.

In 2005, Shaw, who knew that apple picking machines were being used in European orchards, went there looking for a machine that might be of help to him as a soft fruit grower. Subsequently, Shaw spoke with Rob Zandee of Gerard's Equipment in Oliver, who suggested he call Gerry Munckhof.

After speaking with Shaw, Munckhof contacted a brother in The Netherlands, where their grandfather had started a farm equipment manufacturing plant in the city of Horst. Now, Munckhof's four brothers operate the plant and export equipment used in the fruit and wine industries throughout the world.

"I knew my brother made a machine used to harvest nectarines in France. Our job was to modify that design to produce a machine that would work in local orchards," he said. Basically Munckhof and his team had to design a more compact model because of the narrower rows in Canadian orchards.

The basic harvester consists of a drive unit powered by a 12-horsepower motor with a platform on either side for workers to stand on and a conveyer belt in between. The platforms can be adjusted for height. A picking belt can be attached to the front of the harvester that will transfer fruit picked by a worker standing on the ground to the conveyer belt. Fruit on the conveyer belt is sorted and graded, and then placed into the appropriate box at the back of the harvester. There is also a box for culls. Boxes are kept on a superstructure above the conveyer belt until needed.

A detachable wagon at the end of the harvester facilitates transfer of boxes to cold storage. The self-steering harvester has a small arm at the front of the machine which can be set to length depending on exact row width. When the sensor at the tip of arm touches a tree, direction of travel is corrected, resulting in a zig-zag path of progression. The harvester's speed of travel can be varied as needed as can the speed of its conveyor and picking belts.

"Overall we're very happy with the machine," said Shaw, who has good reason to be pleased. He has seen the percentage of his peach crop that ends up as culls drop from 25 percent to 10 percent. Labour costs have also declined.

"Today there are five workers. When we picked into buckets, I would have had to hire eight to nine people," Shaw said.

Peaches can be picked much riper with the harvester, which means tastier, more appealing fruit for the customer.

"You can play hockey with some of the peaches at supermarkets," said Dennis Munckhof who works with his brother Michael and father in the family business.

Shaw also uses the machine to harvest his super spindle plantings of nectarines and for thinning and pruning.

"Formerly I needed to hire three people to help us prune and now it's only one person. We can do the thinning by ourselves," Shaw said.

The harvester also helps to prevent injuries to workers' knees and backs because the platforms can be adjusted to the height of the trees.

The peach harvester is not the first item of machinery developed in Europe that the Oliver branch of the Munckhof family has adapted to fit local needs. More than a decade ago, the tank tower sprayer was modified to fit in the narrower rows found in Okanagan orchards. The carefully-directed release of spray permitted by this sprayer resulted in using less pesticide, a benefit to the grower, the consumer and the environment.

"We've always worked hand-in-hand with local agriculturists to develop the type of equipment they need," Gerry said.

Looking to the future, Michael and Dennis see considerable opportunity in the design and manufacture of machinery for use with stone fruits. Michael holds a diploma and university degree in engineering and Dennis has diplomas in both fabrication and business. High-tech machines for the wine and fruit industries and export markets are also high on their list of opportunities.

"A very important export market is South America. Our cherry packing equipment is popular in Western European countries, especially Germany, and there is lots of interest farther east in the Czech Republic, Turkey and Romania," Dennis said.

At present, Michael estimates that vineyard equipment accounts for 70 percent of total business, cherry packing lines for 25 percent and silviculture for five percent. This marks a significant shift from 10 to 15 years ago when the major portion of the business came from silviculture and orchard equipment.

Today, the company has eight full-time employees—four in fabrication and four in design and administration. Shaw and Kurylo's orchard is also a multi-generational business. The land belonged to Kurylo's parent until she purchased it in 1979. At the time it was planted mainly in apples. The couple's three children, Hunter, 20, Jahnnie, 17, and Starr, 14, are all involved in the production and marketing of fruit.

Figure 1 Harry Shaw, left, places peaches on the central conveyer belt. He and a hired helper, Nathan, are standing on the platforms on either side of the harvester while Starr Shaw is at the back sorting fruit. Boxes are kept on the superstructure until needed. An arm with a sensor (small wheel) at the end which can be seen in the lower left of the photograph allows the harvester to be self-steering.

Improving Maturity of Sovereign Coronation Grapes

Ken Slingerland, Tender Fruit & Grape Specialist, OMAFRA

During the 2010 season, the Fresh Grape Growers of Ontario secured funding through the Farm Innovation Program to research the effects of mechanical leaf pulling on the maturity of Ontario Sovereign Coronation grapes at five different sites. Ken Slingerland was the Research Coordinator and Sarah Marshall from the Fresh Grape Growers Marketing Board was the Project Coordinator.

A full report of the project will be available and a presentation will be made at the Annual Fresh Grape Growers of Ontario AGM in March, 2011.

Highlights of the report include:

- Treatments were mechanically removing leaves between June 29 and August 2nd. One treatment was hand removing leaves between July 12 and 14th and one treatment was no leaf removal.
- All leaf pulling treatments had higher Brix than the control treatment (no leaf removal), however, the differences were small
- Only 5 treatments of the 25 treatments (all blocks) actually had Brix of greater than 18.0º
- The harvest period between the 5 blocks was spread over 13 days
- There was 7 days difference between the two blocks on the same farm (Wall) even though they were only 50 metres away from each other – soil types were likely the contributing factor. A pre-harvest sample taken 1 day before harvest of the South block on clay loam was 18.0º while the north block on sandy soil was 15.5º
- The open canopy of the mechanical leaf pulling treatments appeared visually to have a deeper blue colour and were definitely easier to see for harvest

I have prepared a list of recommendations that the growers should consider for the future of the table grape industry:

- The earlier leaf removal treatment and combination of early plus a second late removal had the best effect on maturity
- Adopt a testing program similar to British Columbia to ensure ripest grapes are harvested first
- Adopt minimum standards with incentives for premium sugar levels
- Mechanization of leaf removal should be adopted. Hand labour would likely be too expensive to warrant the benefit. Pooling of equipment by growers could offset the burden of the capital cost of the equipment
- The project should be repeated to confirm results. 2010 was an almost perfect growing season so all treatments might have had similar results due to the weather
- Sensory evaluation should also be repeated to get consumer feedback

Thanks to Dr. Helen Fisher and Brian Piott, Department of Plant Agriculture University of Guelph for the lab testing of the fruit and Dr. Isabelle Lesschaeve and Nicholas Mathieu, Vineland Research and Innovation Centre for their consumer panel testing.

Special thanks, as always to the growers: Dave Lambert, Bart Huisman, Adolf Reddecopp and Herbert Wall for the use of their vineyards for the project and the presentation.

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University of Guelph

Minor use label expansion granted for Assail 70 WP insecticide for control of phylloxera, Japanese beetle and GBM on grapes in Canada

J. Chaput, Minor Use Coordinator, OMAFRA

The Pest Management Regulatory Agency (PMRA) recently announced the approval of a minor use label expansion for **AS-SAIL 70 WP** Insecticide for control of phylloxera and Japanese beetle and suppression of grape berry moth on grapes in Canada. ASSAIL 70 WP (acetamiprid) was already labeled for management of a variety of insect pests on a range of crops in Canada.

This registration will provide grape growers with a helpful pest management tool to manage some of their most difficult insect problems. This project was initiated in 2005 as a joint minor use project between the Agriculture and Agri-Food Canada, Pest Management Centre (AAFC-PMC) and U.S. IR-4 program as a result of minor use priorities put forward by producers, researchers and extension personnel in both countries.

The following is provided as a general outline only. Users should consult the complete label before using Assail insecticide.

For management of phylloxera (aerial form only), Japanese beetle and grape berry moth (suppression only): Assail insecticide can be applied as a foliar spray at 80 grams per hectare in a minimum finished spray volume of 200 L/ha. Consult crop specialists and/or extension personnel for specific pest timing and threshold levels. Do not make more than 2 applications of Assail insecticide per season and do not apply more than once every 14 days. **The preharvest interval is 3 days.**

Assail insecticide should be used in an integrated pest management program and in rotation with other management strategies. Follow all other precautions and directions for use on the Assail insecticide label.

We wish to thank AAFC-PMC and IR-4 for co-sponsoring this minor use submission in response to grower identified needs. We also wish to thank the personnel of **Nippon Soda Co.** Ltd. and DuPont Canada Inc. for their support of this registration and the personnel of the **Pest Management Regulatory Agency** for evaluating and approving this important pest management tool.

For copies of the new supplemental label contact Wendy McFadden-Smith, OMAFRA, Vineland (905) 562-3383, Grape Growers of Ontario (905) 688-0990 or visit the DuPont Canada website at www2.dupont.com/Crop_Protection/en_CA/

Assail™ is a trademark of Nippon Soda Co. Ltd., Toyko, Japan. Assail™ 70 WP insecticide is marketed by DuPont Canada Inc.

2011 Mid-Atlantic Fruit and Vegetable Convention and Trade Show

This is a reminder that the deadline is approaching to register for the 2011 Mid-Atlantic Fruit and Vegetable Convention and Trade Show. The program is held each year to provide the latest updates and important information to fruit and vegetable growers from Maryland, New Jersey, Pennsylvania, and surrounding states. The conference will be held at the Hershey Lodge and Convention Center in Hershey, PA on February 1-3, 2011. Rutgers New Jersey Agricultural Experiment Station, Cooperative Extension is one of the sponsors of the conference.

The program will consist of six or more concurrent educational sessions offered during the three days. There are sessions on tree fruits, small fruits, wine grapes, organic and general vegetables, pesticide safety, wholesale marketing, and too many others to mention. The full program is provided and other information is provided at http://www.mafvc.org/html/

It includes an extensive trade show, including displays of horticultural equipment, marketing merchandise, packaging, seed companies, fruit nurseries, as well as pesticides and other supplies and services for commercial growers.