



Annual Report

October 31st
2014





Vision

**Ontario Apples...a healthy consumer...
a healthy industry.**

Mission

**To foster a viable apple industry through
advocacy with government and collaboration
with industry partners for the health of
consumers and the wealth of producers.**

ONTARIO APPLE GROWERS ELEVENTH ANNUAL REPORT

October 31, 2014



COMMENTS FROM THE CHAIR

I am halfway through harvest when writing this report. So far it looks like a good crop in Ontario with a few exceptions. All seasons have impacted this year's crop, starting with a harsh winter causing some bud damage and obliterating the Mutsu varieties. Spring was almost frost free with great weather for pollination, while temperatures in the summer were moderate with adequate moisture creating minimal stress on the trees. Harvest has begun with some cold weather that has brought colour before maturity.

As you may know, Premier Wynne has challenged agriculture to create 120,000 new jobs by 2020. Creating new jobs in the apple industry is very possible but you must have profitability to expand an industry. Apple growing in Ontario and competing in a world market are extremely sensitive to government regulations affecting our profitability, e.g. minimum wage, crop protection, etc. Good regulations that provide public good without hindering industry growth is what is needed. For those who use the Seasonal Agricultural Worker Program (SAWP), new regulations brought changes to the advertising requirements. One main change was the advertising requirement on the Government of Canada JOBS web site. Ontario was the last province in Canada to have this requirement mandated.

Having been an apple farmer for 40 years has now provided me with a good insight into growing apples profitably. For me, the main insight is to grow apples that the marketplace wants, both in variety and quality and which are not overproduced. While this may sound simple, we, as apple farmers with broad understanding on how to grow apples, know it is not simple.

Looking to the future, we need access to the right varieties and create demand for them. OAG's Vice-Chair and Research Chair, Cathy McKay, has worked diligently with others over the past few years to create an environment where leaders across Canada work together to bring us the best varieties. I believe that positive collaborations are taking place between the OAG, Summerland Varieties Corporation (formerly PICO), and Vineland Research and Innovation Centre (VRIC).

In order to be profitable, a great challenge to growers is to provide the best quality we can. This past spring and summer's weather, though good in some respects, created immense challenges for crop protection. Powdery mildew, fire blight, mites, apple maggot and summer diseases including Black rot all posed problems to many apple farmers. With new pests emerging, new varieties to grow, new crop protection materials, new planting methods, new equipment technology, and storage challenges, we need all the help we can get. One publication that is of great value to Ontario apple farmers is the Orchard Network Newsletter (ONNL) which is published by the OMAFRA apple team. This publication includes the most up-to-date and relevant information on apple production with articles from experts within OMAFRA and from the University of Guelph. The OAG Board and staff work very closely with extension staff on many issues and they are invaluable to our sector.

Collaborations are critical to our sector. As the OAG, we aim for partnerships within the industry and in how we work together to address the issues. For example, the OAG works with the Crop Protection Advisory Committees at CHC and OFVGA to assist in retaining the use of valuable crop protection materials, such as Captan, Manzate, Sevin and Polyram. Maintaining access to the necessary crop protection materials is critical but also important is the need to create a level playing field with our competitors. This includes establishing a priority list of needed new crop protection materials and continued work on the GROU program. Additionally, the OAG, in partnership with apple producing provinces through the Apple Working Group of the Canadian Horticulture Council (CHC), is receiving

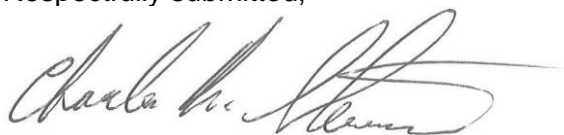
funding for continued apple post-harvest research. Post-harvest research is a key to providing quality apples for the marketplace. Please see the research section later in this annual report for more detail about these and other projects.

One event that I was unable to attend this year was the OAG Summer Tour in Georgian Bay. With an attendance of 240 people, this suggests that there is significant interest in the apple growing, or that Brian Gilroy and his team throw a great party, or both! Either way, I would like to thank the Georgian Bay Fruit Growers' Association for co-hosting this event and thank all of our generous sponsors. We couldn't do this event without them. Learning from each other and networking together makes us a stronger industry.

The OAG makes excellent use of our promotional funds with the goal of creating demand for our locally grown apples and educating consumers about Ontario apple versatility and availability. We are very appreciative of all the assistance provided by Foodland Ontario staff and the promotional work they do on behalf of apples. Recently announced by OMAFRA Minister Jeff Leal, the OAG is receiving \$221,500 from the Local Food Fund to promote Ontario apples with consumers. The OAG sincerely thanks OMAFRA for this funding and it will be put to good use.

My previous comments have suggested what it will take to make this industry profitable. My main objective, when accepting this position as your Chair, is to have all facets of the industry working together to achieve this goal. We are very fortunate to have an excellent Board of Directors whose commitment to the industry is second-to-none. The Directors step up in areas which they are passionate about and this makes my job all the more easier. I would also like to thank our staff at the OAG for their hard work and professionalism. Our work together continues.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "Charles R. Stevens", with a stylized, flowing script.

Charles R. Stevens
Chair, OAG

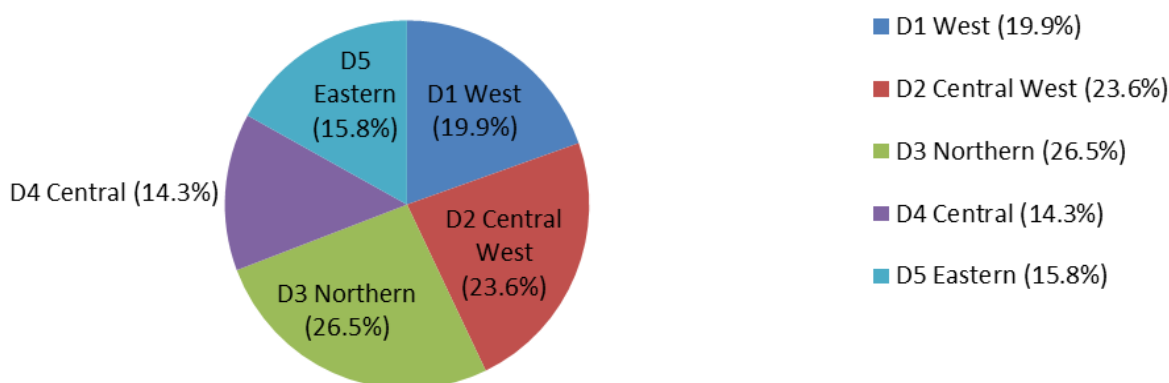
ELEVENTH ANNUAL REPORT OF THE ONTARIO APPLE GROWERS

CROP AND MARKET REVIEW

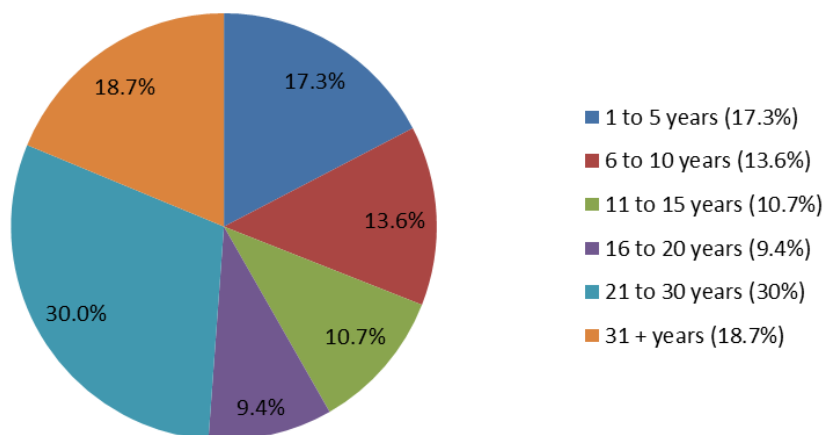
Tree Census

Tree census information (as of December 31st, 2013) is included on pages 11 and 12. This information is based on Agricornp's GPS mapping and information on total acreage provided by Statistics Canada. Agricornp continues to manage the ADaMS system in partnership with the OAG. The system provides reports on plantings by age, by variety and by district for all OAG members. Statistics Canada estimated that there are a total of 15,605 acres in Ontario. The assumption has been made that the variety mix for the remaining acres were about the same as for those that were mapped.

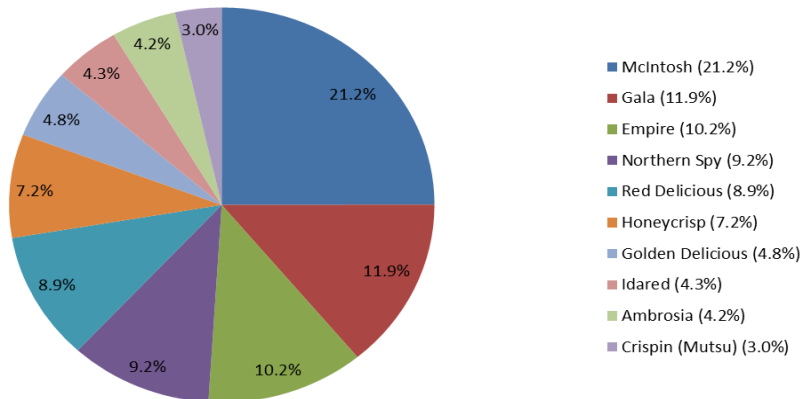
2013 Ontario Apple Tree Acreage by District



2013 Ontario Apple Tree Acreage by Tree Age



2013 Acreage by Variety (top 10)



Crop Estimate

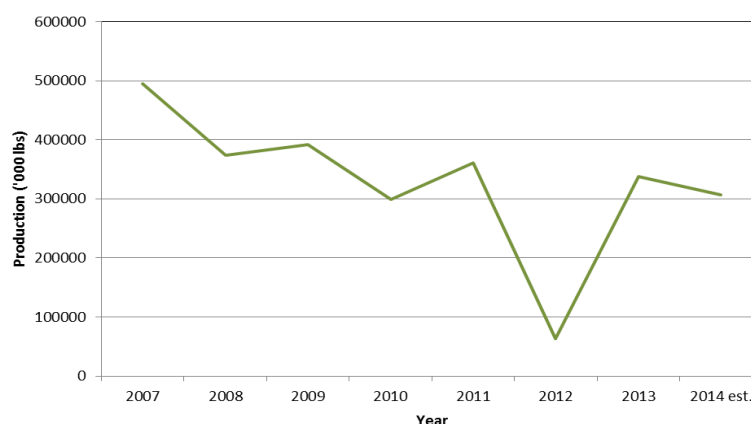
ONTARIO APPLE PRODUCTION – 2009 TO 2014

	Production ('000 lbs.)	% Change From Previous Year
2009	392,384	5.1%
2010	299,168	-23.8%
2011	361,048	20.7%
2012	63,143	-82.5%
2013	399,506	532.7%
2014 estimate*	307,217	-
5-Year Ave. ('09 –'13)	303,050	-

Source: OAG Annual Apple Marketing Survey and Apple Yield Estimate Survey

* Excludes orchard juice estimated volumes

Ontario Apple Production 2007 to 2014 (e)

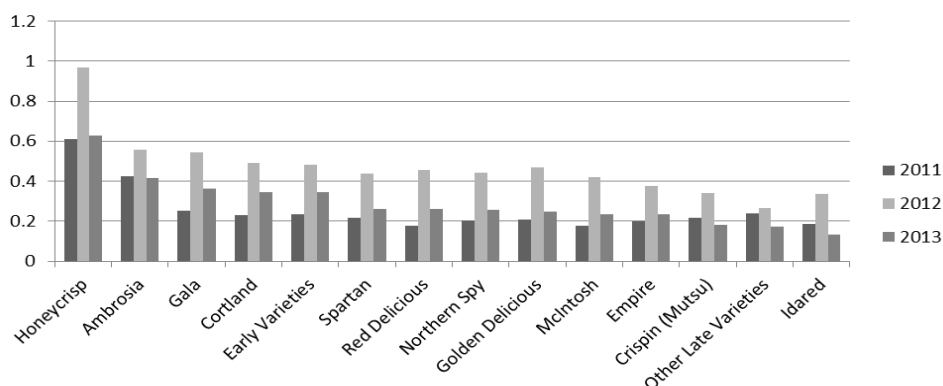


Marketing Survey

The results of the 2013 marketing survey include comparative figures from the 2012 year. The survey provides the industry average returns per pound and per bin (820 lbs.) by variety and represents the prices for 100% of the apples in the bin, not just those for the fresh market pack out. With this

information, growers and packers can compare their results with the average. This information also provides valuable information for government programming. More detail is provided beginning on page 7 of this report.

Grower Return \$/lb. by Variety 2011 - 2013



Flyer Ad Tracking

The OAG tracks apple flyer ad activity at major retail. We record retail chain, variety, pack (bulk or bag), price/lb. and country of origin. This information is shared with the apple packers on a weekly basis.

Storage Holdings

The OAG continues to collect storage holdings for the industry. As always, individual storage holder data is kept confidential. Similar information is collected in other apple producing provinces. This information is entered into AAFC's InfoHort system and published on their website. The OAG summarizes the Canadian data and combines it with similar statistics on the U.S. crop and provides it to the marketers, storage holders and our grower members. The OAG thanks all the storage cooperators for their excellent participation.

DISTRICT APPLE PRODUCERS' COMMITTEES

Each District has a District Apple Producers' Committee and each District may elect one committee person for each 20 growers. If the District is not a multiple of 20, then there shall be one grower representative for each 20 growers plus one additional representative. On or before December 31st of each year, each District Apple Producers' Committee will elect two members to the board of directors of the Ontario Apple Growers. Based on the current membership, the number of growers to be elected to the District Committees is as follows:

<u>District</u>	<u>Grower Members</u>	<u>Committee Numbers</u>
District 1	41	3
District 2	39	3
District 3	46	3
District 4	32	3
District 5	32	3
Total - Members	190	15
Voluntary Members	37	
Total - All Members	227	

APPLE INDUSTRY STATISTICS

2014 APPLE CROP ESTIMATE

Varieties	November 2012 Production ('000 lbs.)	November 2013 Production ('000 lbs.)	November 2014 Production ('000 lbs.)	% Change 2014 vs. 2013
Other Early Varieties	1,484	5,290	4,649	-12.1%
Ambrosia	737	4,048	5,051	24.8%
Cortland	2,566	7,679	7,605	-1.0%
Crispin/Mutsu	543	5,519	2,555	-53.7%
Empire	2,378	51,543	50,935	-1.2%
Fuji	139	1,703	1,407	-17.4%
Gala	4,277	19,755	23,007	16.5%
Golden Delicious	2,973	10,804	8,022	-25.8%
Honeycrisp	3,080	22,328	25,060	12.2%
Idared	3,031	18,612	13,686	-26.5%
Jonagold	1,398	4,593	2,118	-53.9%
McIntosh	12,556	73,701	75,586	2.6%
Northern Spy	12,806	70,967	46,969	-33.8%
Red Delicious	4,213	27,861	25,060	-10.1%
Spartan	2,631	7,182	7,201	0.3%
Other Late Varieties	2,220	6,240	8,307	33.1%
Total Fresh	57,033	337,826	307,217	-9.1%
Juice	6,110	61,680		
All Varieties	63,143	399,506	307,217	

2013 ONTARIO APPLE MARKETING SURVEY RESULTS

PRODUCTION (LBS.)								
Variety	Fresh		Orchard Juice		Non-Juice		Total	
	2013	2012	2013	2012	2013	2012	2013	2012
Ambrosia	3,948,350	736,920			100,000	0	4,048,350	736,920
Cortland	7,022,170	2,504,704			656,870	61,026	7,679,040	2,565,730
Crispin (Mutsu)	5,360,715	461,571			157,985	81,049	5,518,700	542,620
Early Varieties	5,268,920	1,409,996			21,220	74,304	5,290,140	1,484,300
Empire	50,347,323	1,704,566			1,195,577	673,814	51,542,900	2,378,380
Gala	19,631,590	4,261,839			123,550	15,621	19,755,140	4,277,460
Golden Delicious	10,665,857	2,852,988			138,463	119,992	10,804,320	2,972,980
Honeycrisp	22,328,250	3,065,934			-	14,236	22,328,250	3,080,170
Idared	5,851,787	1,070,477			12,760,263	1,960,903	18,612,050	3,031,380
McIntosh	66,249,753	9,941,458			7,451,187	2,614,162	73,700,940	12,555,620
Northern Spy	50,502,121	8,302,143			20,464,769	4,503,997	70,966,890	12,806,140
Red Delicious	27,751,906	3,889,123			109,084	324,077	27,860,990	4,213,200
Spartan	6,865,921	2,296,352			316,569	334,848	7,182,490	2,631,200
Other Late Varieties	11,439,670	3,093,984			1,096,620	662,606	12,536,290	3,756,590
Total	293,234,333	45,592,055	61,679,882	6,110,253	44,592,157	11,440,635	399,506,372	63,142,943

GROWER PRICE (\$/LB)								
Variety	Fresh (\$)		Orchard Juice (\$)		Non-Juice (\$)		Average Fresh and Non-Juice (\$)	
	2013	2012	2013	2012	2013	2012	2013	2012
Ambrosia	0.419	0.556			0.300	0.163	0.416	0.556
Cortland	0.370	0.499			0.108	0.120	0.347	0.490
Crispin (Mutsu)	0.182	0.373			0.121	0.170	0.180	0.343
Early Varieties	0.346	0.498			0.070	0.220	0.344	0.484
Empire	0.237	0.445			0.108	0.198	0.234	0.375
Gala	0.363	0.548			0.108	0.143	0.361	0.546
Golden Delicious	0.281	0.476			0.108	0.295	0.279	0.469
Honeycrisp	0.628	0.971			-	0.156	0.628	0.967
Idared	0.124	0.468			0.138	0.265	0.133	0.336
McIntosh	0.250	0.486			0.108	0.165	0.236	0.420
Northern Spy	0.288	0.525			0.156	0.288	0.250	0.442
Red Delicious	0.261	0.479			0.108	0.192	0.260	0.457
Spartan	0.267	0.472			0.108	0.200	0.260	0.437
Other Late Varieties	0.182	0.285			0.076	0.193	0.173	0.268
Avg. Grower Price - All Utilization (\$/lb)	0.294	0.515	0.055	0.100	0.138	0.237	0.239	0.425
Avg. Transaction - All Utilization (\$/lb)	0.371	0.571	0.055	0.100	0.158	0.255	0.299	0.468

GROWER VALUE \$								
Variety	Fresh (\$)		Orchard Juice (\$)		Non-Juice (\$)		Total (\$)	
	2013	2012	2013	2012	2013	2012	2013	2012
Ambrosia	1,653,877	409,513			30,000	-	1,683,877	409,513
Cortland	2,596,205	1,249,855			70,614	7,323	2,666,819	1,257,178
Crispin (Mutsu)	976,115	172,061			19,108	13,813	995,223	185,873
Early Varieties	1,820,828	701,785			1,485	16,347	1,822,313	718,132
Empire	11,923,611	758,512			128,525	133,313	12,052,136	891,825
Gala	7,121,935	2,335,127			13,282	2,230	7,135,217	2,337,357
Golden Delicious	2,998,992	1,358,378			14,885	35,395	3,013,877	1,393,774
Honeycrisp	14,015,075	2,977,445			-	2,225	14,015,075	2,979,670
Idared	725,928	500,864			1,758,039	518,757	2,483,968	1,019,620
McIntosh	16,563,963	4,836,500			801,003	431,435	17,364,966	5,267,935
Northern Spy	14,528,934	4,360,259			3,194,931	1,298,918	17,723,866	5,659,177
Red Delicious	7,234,880	1,862,857			11,727	62,127	7,246,606	1,924,983
Spartan	1,831,486	1,082,749			34,031	66,887	1,865,517	1,149,637
Other Late Varieties	2,080,839	880,590			83,693	127,687	2,164,532	1,008,277
Total Grower Value	86,072,670	23,486,494	3,392,394	611,025	6,161,322	2,716,457	95,626,385	26,813,977
Total Transaction Value	108,882,901	26,036,406	3,392,394	611,025	7,053,165	2,922,388	119,328,459	29,569,820

Notes:

1. The above marketing data is based on a survey of six major Ontario apple marketers.
2. Juice production is estimated and reported as a total of the crop versus by variety as there is no way to determine the actual volume by variety.
3. Orchard juice price per lb. does not include sort outs (pack line culls) or handpicked apples for juice.
4. Transaction price for non-juice uses a factor of 2 cents added to the grower non-juice price.
5. Based on the survey results, variety mix for the entire crop may vary from the sample.
6. Total transaction value for fresh is determined using the combined bag and tray net return (before grower deductions) and takes into consideration the total pack out percentage from the 2013 marketer's survey.

APPLE MARKETING SURVEY 2013 CROP – SUMMARY

	2013			Combined (Bag+Tray)	2013 INDUSTRY AVG.	2013 INDUSTRY AVG.	2012 INDUSTRY AVG.	2011 INDUSTRY AVG.
Variety	Total lbs Graded	Total lbs Packed Fresh	Total Pack Out %	Return /lb.	Net Return /lb. Total Fruit Delivered For Fresh	Net Return /820 lb Bin Total Fruit in the Bin	Net Return /820 lb Bin Total Fruit in the Bin	Net Return /820 lb Bin Total Fruit in the Bin
	1	2	5	16	22	22	22	22
Ambrosia	6,483,864	5,145,298	79%	\$0.615	\$0.419	\$343	\$456	\$348
Cortland	3,354,945	2,597,385	77%	\$0.570	\$0.370	\$303	\$409	\$192
Crispin (Mutsu)	2,992,019	1,754,184	59%	\$0.383	\$0.182	\$149	\$306	\$181
Early Varieties	3,860,936	3,092,430	80%	\$0.531	\$0.346	\$283	\$408	\$198
Empire	19,961,009	15,050,312	75%	\$0.400	\$0.237	\$194	\$365	\$172
Gala	24,631,303	21,170,062	86%	\$0.514	\$0.363	\$297	\$449	\$207
Golden Delicious	8,243,385	5,501,861	67%	\$0.506	\$0.281	\$231	\$390	\$185
Honeycrisp	13,469,585	10,490,521	78%	\$0.895	\$0.628	\$515	\$796	\$504
Idared	7,169,942	2,735,004	38%	\$0.336	\$0.124	\$102	\$384	\$157
McIntosh	38,135,565	25,950,632	68%	\$0.468	\$0.250	\$205	\$399	\$153
Northern Spy	406,806	356,806	88%	\$0.401	\$0.288	\$236	\$431	\$180
Red Delicious	15,310,535	11,391,079	74%	\$0.434	\$0.261	\$214	\$393	\$147
Spartan	3,787,849	3,009,727	79%	\$0.436	\$0.267	\$219	\$387	\$183
Other Late Varieties	3,786,904	1,738,706	46%	\$0.446	\$0.182	\$149	\$233	\$215
Total(s)	151,594,647	109,984,007	73%	\$0.512	\$0.307	\$252	\$423	\$190

2013 Ontario Apple Tree Acreage By Variety, By District

Variety Name	1 Western	2 Central West	3 Northern	4 Central	5 Eastern	Total Acreage	% of Total Crop
McIntosh	243	603	1,507	280	675	3,308	21.2%
Gala	425	490	127	325	491	1,858	11.9%
Empire	325	693	218	143	216	1,595	10.2%
Northern Spy	85	340	889	61	59	1,434	9.2%
Red Delicious	370	391	93	306	236	1,395	8.9%
Honeycrisp	198	260	218	134	307	1,118	7.2%
Golden Delicious	393	134	5	167	49	748	4.8%
Idared	116	161	251	60	79	666	4.3%
Ambrosia	239	121	102	101	100	663	4.2%
Crispin/Mutsu	151	100	17	162	36	466	3.0%
Other	50	68	232	66	36	452	2.9%
Cortland	48	81	123	85	79	415	2.7%
Spartan	17	45	162	20	47	291	1.9%
Mixed	38	13	5	93	62	211	1.4%
Paulared	42	25	22	27	91	206	1.3%
Fuji	110	31	5	39	7	192	1.2%
Ginger Gold	64	34	7	22	26	153	1.0%
Jonagold	49	25	12	34	3	123	0.8%
Jerseymac	18	1	70	6	2	97	0.6%
Golden Russet	17	4	15	15	25	76	0.5%
Jonamac	49	1	4	4	0	58	0.4%
Earligold	7	3	23	1	8	42	0.3%
Marshall Mac	5	14	-	5	15	38	0.2%
TOTAL	3,056	3,636	4,107	2,158	2,648	15,605	100%

Notes:

1. District 1 Western is comprised of the upper-tier municipalities of Essex, Lambton and Middlesex and the single-tier municipality of Chatham-Kent.
2. District 2 Central West is comprised of the upper-tier municipalities of Huron, Perth, Oxford and Elgin and the single-tier municipalities of Haldimand and Norfolk.
3. District 3 Northern is comprised of the upper-tier municipalities of Bruce, Grey, Simcoe and Dufferin.
4. District 4 Central is comprised of the upper-tier municipalities of Wellington, Peel, York, Halton, Waterloo and Niagara and the single-tier municipalities of Brant, Toronto and Hamilton.
5. District 5 Eastern is comprised of the upper-tier municipalities of Durham, Northumberland, Peterborough, Frontenac, Hastings, Lanark, Lennox and Addington, Leeds and Grenville, Renfrew and Stormont, Dundas and Glengarry and Prescott and Russell and the single-tier municipalities of Kawartha Lakes, Ottawa and Prince Edward.
6. Other includes: Aurora Golden Gala, Braeburn, Cox's Orange Pippin, Creston, Crimson Crisp, Cripps Pink, Elstar, Fortune, Goldrush, Granny Smith, Liberty, Lobo, Lodi, Macoun, Melba, Novaspy, Quinte, Red Prince, Rome, Roxbury Russet, Russet, Shizuka, Silken, Snow, Sunrise, Tolman Sweet, Transparent, Tydeman Red, Viking, Vista Bella, Wealthy, Winesap and Zestar.

2013 Ontario Apple Tree Acreage By Variety, By Tree Age

Variety Name	1 To 5 Years (2009-2013)	6 To 10 Years (2004-2008)	11 To 15 Years (1999-2003)	16 To 20 Years (1994-1998)	21 To 30 Years (1984-1993)	31 Years and Over (Pre-1984)	Total Acreage	% of Total Crop
McIntosh	175	292	253	223	1,351	1,014	3,308	21.2%
Gala	920	328	280	212	108	9	1,858	11.9%
Empire	54	58	97	216	912	258	1,595	10.2%
Northern Spy	150	66	157	135	524	403	1,434	9.2%
Red Delicious	154	36	132	200	526	347	1,395	8.9%
Honeycrisp	418	516	166	13	4	1	1,118	7.2%
Golden Delicious	124	66	158	100	206	94	748	4.8%
Idared	4	11	7	32	311	302	666	4.3%
Ambrosia	333	286	44	-	-	-	662	4.2%
Crispin/Mutsu	20	52	128	61	131	74	466	3.0%
Other ¹	105	255	27	14	23	29	452	2.9%
Cortland	76	41	53	57	114	74	415	2.7%
Spartan	7	13	14	24	132	101	291	1.9%
Mixed	8	23	23	25	70	63	211	1.4%
Paulared	36	11	13	10	73	63	206	1.3%
Fuji	62	22	16	50	40	1	192	1.2%
Ginger Gold	39	16	59	34	1	2	153	1.0%
Jonagold	13	3	15	31	50	10	123	0.8%
Jerseymac	-	2	2	7	51	35	97	0.6%
Golden Russet	4	2	21	10	21	17	76	0.5%
Jonamac	4	-	0	3	23	28	58	0.4%
Earligold	2	4	11	16	7	3	42	0.3%
Marshall Mac	4	20	-	-	14	-	38	0.2%
TOTAL	2,711	2,122	1,678	1,473	4,693	2,928	15,605	100%

Notes:

■ Acreage for both reports is based on the Dec. 31st, 2012 tree inventories as reported by growers to Agricorp and the 2012 Fall Harvest Survey (Statistics Canada).

¹ Other includes: Aurora Golden Gala, Braeburn, Cox's Orange Pippin, Creston, Crimson Crisp, Cripps Pink, Elstar, Fortune, Goldrush, Granny Smith, Liberty, Lobo, Lodi, Macoun, Melba, Novaspy, Quinte, Red Prince, Rome, Roxbury Russet, Russet, Shizuka, Silken, Snow, Sunrise, Tolman Sweet, Transparent, Tydeman Red, Viking, Vista Bella, Wealthy, Winesap and Zestar.

IMPORTS OF FRESH APPLES 2013 (LBS)									
PROVINCE	EMPIRE	GALA	GOLDEN DELICIOUS	GRANNY SMITH	IDA RED	MCINTOSH	RED DELICIOUS	UNSPECIFIED	TOTAL
Alberta		2,399,694	31,160	302,262			121,499	335,594	3,190,209
British Columbia		47,964,932	7,738,406	20,883,124	23,303	44,610	22,930,178	33,797,607	133,382,160
Manitoba		355,138	29,923	60,598		516,313	82,411	214,593	1,258,977
New Brunswick		830,304	276,559	476,141		19,467	390,357	361,450	2,354,276
Nova Scotia		428,821		26,083				1,189,961	1,644,865
Ontario	1,546,931	79,929,746	9,145,705	28,291,170	239,973	235,628	21,366,703	37,767,806	178,523,661
Québec	1,719,873	18,160,271	1,890,623	8,151,810	153,567		3,884,734	7,353,018	41,313,895
Saskatchewan		580,474		60,259		117,841	15,679	96,774	871,028
Total By Variety	3,266,804	150,649,379	19,112,375	58,251,446	416,843	933,859	48,791,561	81,116,804	362,539,071

Ontario - 2012	854,976	94,070,084	13,102,409	35,060,568	387,299	434,751	20,187,990	62,282,283	226,380,360
Ontario - 2013 vs. 2012	81%	-15%	-30%	-19%	-38%	-46%	6%	-39%	-21%
Total By Variety - 2012	1,240,696	172,151,736	37,105,066	65,420,097	7,080,190	1,537,114	43,478,636	123,465,667	451,479,202
Total By Variety - 2013 vs. 2012	163%	-12%	-48%	-11%	-94%	-39%	12%	-34%	-20%

IMPORTS OF FRESH APPLES - 5 YEAR AVERAGE 2009-2013 (LBS)									
PROVINCE	EMPIRE	GALA	GOLDEN DELICIOUS	GRANNY SMITH	IDA RED	MCINTOSH	RED DELICIOUS	UNSPECIFIED	TOTAL
Alberta		2,421,271	133,197	442,049		4,947	282,340	458,938	3,742,741
British Columbia		42,493,753	10,268,698	19,160,013	11,912	75,059	17,685,018	32,215,507	121,909,960
Manitoba		273,712	27,804	65,602		404,748	57,697	215,056	1,044,619
New Brunswick		938,254	347,653	665,752		5,513	475,509	678,534	3,111,216
Nova Scotia		321,150		163,834				390,019	875,003
Ontario	1,067,429	76,590,185	13,047,185	30,352,990	343,523	196,321	20,147,328	40,668,334	182,413,295
Québec	642,772	16,705,966	2,296,220	7,699,644	2,284,352	251,245	2,712,523	7,401,348	39,994,069
Saskatchewan		204,793	12,326	35,331		132,504	25,649	51,974	462,578
Total by Variety	1,710,200	139,949,084	26,133,083	58,585,217	2,639,787	1,070,337	41,386,063	82,079,711	353,553,481

Ontario - 2013 vs. 5 Year Average	45%	4%	-30%	-7%	-30%	20%	6%	-7%	-2%
Total By Variety - 2013 vs. 5 Year Average	91%	8%	-27%	-1%	-84%	-13%	18%	-1%	3%

COMMITTEE REPORTS

RISK MANAGEMENT COMMITTEE REPORT

The Risk Management Committee has been very active this past year. The Committee members are: Brett Schuyler (Chair), Chris Hedges, Pete Geerts, Rich Feenstra, Brian Gilroy, Art Moyer, Charles Stevens, Bob Hepburn and Spencer Johnson. The Committee provides input and deals with issues pertaining to the following Growing Forward suite of programs to farmers:

- Agri-Insurance
- Agri-Invest
- Agri-Stability
- Agri-Recovery

This year, the Risk Management Committee has been focused on the Apple Production Insurance Plan. It is a complicated plan with many facets that are inter-connected. The Committee chose a number of areas that they felt were priorities for review. Throughout the year, we have had many meetings with Agricorp and the work is ongoing. Following is a review of the current programming.

Agri-Insurance - Production Insurance covers production losses and yield reductions caused by insured perils. Depending on the plan, coverage is available on a total-yield, dollar-value, or acreage-loss basis. Producers can choose the type and level of coverage that best meets their needs.

Apple Crop Insurance, 2009 – 2014 (as of October 28th, 2014)

Year	Accounts	Liability ,000's	Total Premiums ,000's	Grower Share of Premiums ,000's (a)	Claims ,000's (b)	Net Benefit to Growers ,000's (b) - (a)
2014	144	\$ 41,453	unknown	unknown	unknown	unknown
2013	145	\$ 33,905	\$ 7,053	\$ 3,675	\$ 4,632	\$ 957
2012	140	\$ 34,866	\$ 3,504	\$ 1,546	\$ 26,858	\$ 25,330
2011	139	\$ 28,473	\$ 3,657	\$ 1,916	\$ 3,036	\$ 1,120
2010	139	\$ 27,912	\$ 3,823	\$ 2,001	\$ 2,428	\$ 427
2009	143	\$ 28,242	\$ 4,317	\$ 2,266	\$ 3,694	\$ 1,427
5 Year Average ('09 - '13)	141	\$ 30,680	\$ 4,471	\$ 2,281	\$ 8,130	\$ 5,852

AgriStability - AgriStability covers margin declines caused by any combination of production losses, adverse market conditions or increased costs. If a producer's margin falls below 70% of their recent average, AgriStability helps to offset the difference. The following table shows Apple AgriStability Program participation and payments. Reporting is done by sector and can fluctuate year to year, as the annual sector determination is based on program-year reported income. Sector determination (apple, G&O, cattle, etc.) is based on income at or greater than 50% of total reported income in the program year. This means that an "apple" producer could be reported as a grain and oilseed producer (for example) if their traditional, predominant apple income drops in a given year, due to a disaster circumstance.

AgriStability Apple Statistics
(as of October 24th, 2014)

Year	Processed	Payments	Total \$	Average
2010	217	71	\$2,626,015	\$36,986
2011	211	43	\$1,295,534	\$30,129
2012	206	87	\$1,987,451	\$22,884
2013	161	25	\$906,606	\$36,264

Risk Management Plan for Edible Horticulture – The Risk Management Plan (RMP) for edible horticulture allows participants to deposit funds into an RMP account, receive government contributions and withdraw funds to cover risk to their farm business. To be eligible, farmers must provide a valid premium ID, grow at least one of the more than 100 eligible commodities for a minimum of six consecutive months in the 2013 taxation year, file a T1163 to Canada Revenue Agency or submit a statement A to Agricorp for 2013. Farmers must also have a minimum of \$5,000 in allowable net sales in 2013 and participate in AgriStability to receive a participant package.

Introduced in 2013 was the \$100 million in annual government funding available through RMP to be distributed across all six RMP programs including edible horticulture, grains and oilseeds, cattle, hogs, veal, and sheep. Government contributions were made in two installments. The first government contribution was made from September to February and the additional government contribution was made in June.

As of September 30th, 2014:

- Under the 2013 RMP: Edible Horticulture plan, governments funds of \$20.56 million were deposited in SDRM accounts;
- Under the 2012 RMP: Edible Horticulture plan, governments funds of \$23.98 million were deposited in SDRM accounts;
- Under the 2011 RMP: Edible Horticulture plan, governments funds of \$22.15 million were deposited in SDRM accounts.

AgriInvest - AgriInvest is a savings account that producers can use to either cover small income declines or support other investments. Each year, producers can deposit up to 1.0 percent of their ANS into a bank account and receive a matching government contribution. Producers can withdraw funds at any time.

Commodity Loan Program (CLP) & Advance Payments Program (APP)

Apple growers currently have access to two government cash advance programs through Agricultural Credit Corporation. Both programs are available to all apple growers in Ontario.

The Commodity Loan Program (CLP) is a provincial government cash advance program that provides up to \$750,000 of available financing at bank prime rate (currently 3%). The program begins January of each year, and advances are usually repaid in three monthly pre-authorized payments in December, January and February. Producers must utilize production insurance to participate.

The Advance Payments Program (APP) is a federal government cash advance program that provides up to \$400,000 in available financing to producers with the first \$100,000 interest free and the balance at the bank prime rate. Apple growers can access this program starting April 1st of each year based on anticipated production using either Production Insurance or Agristability insurance. After October 1st of each year, security may be based on inventory on hand.

Major improvements have been made for both programs in 2014 (APP) and 2015 (CLP). Five advance/loan rates are now available ranging from 9 cents to 31 cents per pound for the APP program

and from 13 cents to 46 cents per pound for the CLP program. These price levels recognize higher priced apple varieties.

FRESH APPLE ADVISORY COMMITTEE (FAAC)

The Fresh Apple Advisory Committee met once and dealt with such issues as generic promotion, crop estimates, research requirements, food safety, and information requirements. The OAG and marketers also have periodic conference calls to discuss crop and market conditions during the year. The make-up of FAAC is as follows:

Ontario Farm Products Marketing Commission

Bette Jean Crews – Committee Chair (Farm Products Marketing Commission Director)

Grower Representatives

Bob Hepburn – Director, District 2
Keith Wright – Director, District 1
Art Moyer – Director, District 4

Apple Marketer Representatives

Mike Gibson – Algoma Orchards
Jim Dolmer – Bay Growers Inc.
Ken Martin – Martin's Family Fruit Farms
David Knight – Knight's Appleden (Alternate)

JUICE APPLE ADVISORY COMMITTEE (JAAC)

The Juice Apple Advisory Committee deals with issues relating to crop estimating, quality issues, recording and dissemination of information. The Juice Apple Advisory Committee members are:

Farm Products Marketing Commission

Bette Jean Crews – Committee Chair (Farm Products Marketing Commission Director)

Grower Representatives

Pete Geerts – Director, District 1
Brett Schuyler – Committee Member, District 2
Art Moyer – Director, District 4

Juice Processor Representatives

Jay Johnson – Golden Town Apple Products
Vincent Giasson – A. Lassonde

JUICE APPLE NEGOTIATING AGENCY

In August 2014, a price agreement on orchard juice apples was established at 5.5 cents/lb. FOB the farm. The marketing and pricing of packing line sort outs are outside of the authority of the OAG and are subject to supply and demand factors.

Grower Representatives

Brian Gilroy – Chair, District 3
Brett Schulyer – Director, District 2
Peter Geerts – Director, District 1

Juice Processor Representatives

Jay Johnson – Golden Town Apple Products
Benoit Boucher – A. Lassonde
Sylvain Mayrand – A. Lassonde

GROWER INFORMATION AND COMMUNICATIONS

The OAG utilizes several means to reach our membership. All newsletters are currently distributed by mail with six OAG newsletters sent between December 2013 and September 2014. There were four Orchard Network Newsletters mailed as well (December 2013, February, April, and September 2014). Also included in the mailings were several fact sheets provided by OMAFRA. The OAG staff also email news updates to the membership throughout the year as needed.



Once again the OAG organized the Ontario Apple Summer Tour which was held on July 29th in Georgian Bay. The tour was co-hosted by OMAFRA and the Georgian Bay Fruit Growers' Association. There were 240 apple farmers and industry representatives in attendance and they toured five locations in this apple growing area. The tour took us to:

- Bamford Family Farms
- T&K Ferri Orchards
- B&T Oakley Orchards
- Global Fruit
- Ardiel Acres

Thank you to our tour hosts for being so welcoming and sharing their experiences. Each stop had multiple speakers and we thank the many industry extension experts who shared their research and activities with the group.

The OAG would like to recognize the tremendous financial support received from industry. This enabled us to offer the tour and meals free for OAG members. Our sincere thanks to:

- | | |
|--|--|
| <ul style="list-style-type: none"> ▪ Lakeview Vineyard Equipment ▪ ProvideAgro ▪ Dupont ▪ Engage Agro and BASF ▪ Van Brenk Nursery ▪ Mori Essex Nurseries ▪ Vineland Research and Innovation Centre ▪ Don Arthur Equipment ▪ Summerland Varieties Corp. | <ul style="list-style-type: none"> ▪ Kraus Nurseries ▪ NuFarm ▪ Grindstone Creek Nursery ▪ Golden Town Apple Products ▪ Dow AgroSciences ▪ Warwick Nurseries ▪ Pace International ▪ Syngenta ▪ AEF Global |
|--|--|

PROMOTION REPORT

2013 Crop Year Promotional Activities Review

The Ontario Apple Growers work in collaboration with Foodland Ontario and the Apple Marketers' Association of Ontario (AMAO) on promotional programs to showcase Ontario grown apples with consumers highlighting our varieties quality, versatility and availability.

Foodland Ontario Fall 2013 Promotions

- **2013 Foodland Calendar** – 500,000 calendars distributed. Ontario apples were featured in months of February (Apple Pie French Toast) and December (The Best Quick Loaf with Crumble Top).
- **Foodland Billboard** – Apples featured on the billboard at the Ontario Food Terminal in fall 2013
- **Foodland Retailer Display Contest** – 286 retailers participated in an Ontario apples based contest to increase the exposure of our Point of Sale materials.



Winter and Spring 2014 Promotions

- **Foodland TV Commercials** – Foodland commercials featuring Ontario apples ran from February 24 – March 20, 2014.

- **Foodland Radio Ads** – Foodland Ontario 10-second radio tags for “Fresh Ontario Apples” aired through the month of February, 2014.
- **Transit Shelter Ads** – TTC bus shelter ads were featured from February 17 to March 10, 2014.

Ongoing Foodland Activities

Website – New regular recipe features including Tri-colour Cabbage & Chicken Slaw, Country Pork Ragout with Apples 'n Thyme, and Apple & Cheddar Strudel.

Social Media – Foodland continuously supports OAG by adding fresh content and recipes as well as ‘sharing’ and ‘liking’ OAG posts to their large audience. They have 146,202 followers on Facebook (June 2014) and 21,296 followers on Twitter (June 2014).

2013/14 OAG Activities

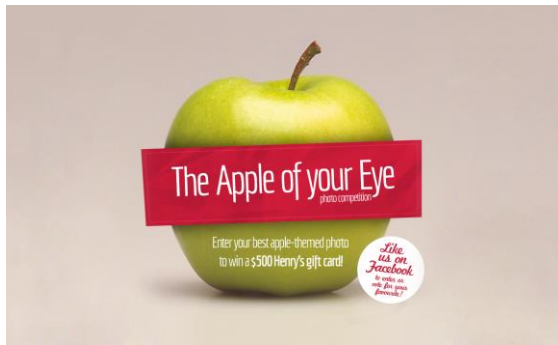
Royal Agricultural Winter Fair – On November 2nd and 3rd, the OAG exhibited at the Royal in the OFVGA Booth. The Royal provides a terrific opportunity to promote Ontario apples with urban consumers. New for 2013, we were offered an opportunity to have celebrity chef Kary Osmond on the Chef’s Stage with an Ontario apple cooking demo. Kary is working with the Ontario Produce Marketing Association (OPMA) helping to educate consumers with their “Produce Made Simple” campaign. As well, this was the fifth year for the Royal Apple Competition. Truly national in scope, this year’s competition had apples from BC, Quebec and Ontario in the running.



In-Store Sampling Program – Working with Foodland Ontario and Apple Marketers’ Association a fresh apple in-store sampling program was conducted under the Foodland umbrella. The goal was to showcase the winter availability of Ontario apples and encourage consumers to buy local in the wintertime. The program was executed over a 6-week period in February and March. There were over 57,000 apple slices sampled with over 45,000 customer engagements. More than 21,000 engagements directly impacted a new sale. Through this, we gathered valuable data on our consumers and increased our apple sales.

Social Media – The OAG has made a large commitment to providing relevant and useful content to our followers by supplying them with more stories related to the industry with recipes, news related items, grower profiles, and holiday images. As a result, our audience has seen rapid growth.

Facebook Contests – The OAG held two consumer contests with the goal of increasing our social media visibility.



The Apple of Your Eye Photo Contest - Generated 527 'likes' and had 205 photos entered. The winner received a \$500 gift card to Henry's.

How do you like them apples? Recipe Contest - Generated 861 'likes' and had 190 recipes entered and the winner received a \$500 gift card to the grocery store of their choice.



Additionally, the OAG conducted outreach to Ontario-based food bloggers providing them with apples encouraging them to cook and write (or 'blog') about Ontario apples. The goal of this activity was also to increase our reach and help create content that we could share on social media.

Facebook – We started our social media campaign with only 78 'likes' on September 1, 2013. At the end of the campaign we had increased to 7,657 (June 30, 2014).

Twitter – Followers were 182 on September 1, 2013 and increased to 587 by June 30, 2014.

Pinterest – While not as popular as Facebook and Twitter, Pinterest offers a great space to showcase the amazing apple photos and recipes that are on our website.

Ontario Produce Marketing Association – As a member of the OPMA, the OAG has partnered with them in several areas for the 2013/2014 crop year.

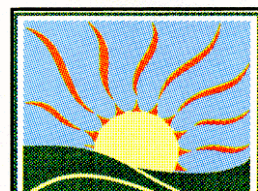
Produce Made Simple Campaign – Apple recipes featured on home page for 3 weeks plus 6 branded recipes featured permanently on website.

Learn, Live, Love Local! (LLLL)

- Apple LLLL Billboards were on one side of the large billboard facing the Gardiner Expressway during peak apple season in the fall of 2013 and again in the late winter & early spring of 2014 (a total of 4 months). The billboard is viewed by approximately 255,000 views per month.
- Approximately 20,000 Learn Live Love Local! commodity booklets (including apples) were distributed in 2013.
- Recipe and Cooking Videos developed for Learn Live Love Local! which were promoted on the website and social media.

2013/2014 OPMA Flavours of Freshness Calendar - Featured Ontario apples for two months (10,000 copies of the calendar were printed and distributed).

The OAG would like to thank the following organizations for their support with our promotional activities:



**Horticultural Crops
Ontario**

**Apple Marketers'
Association of
Ontario**

RESEARCH AND DEVELOPMENT REPORT

The Research Committee is made up of the following members: Cathy McKay (Chair), Harold Schooley, Spencer Johnson, Pete Geerts, Joe Van de Gevel, Shane Ardiel and Art Moyer. Research priorities (see page 29) are established by the committee each November.

Research Projects

Physiological and Pomological Studies of Newer Apple Cultivars for the Ontario Apple Industry. – Dr. John A. Cline, Pomology and Tree Fruit Physiology, University of Guelph

A three-year project is being completed in 2014/2015 that addressed the following industry-identified problems: a) increased production efficiency through the development of new high-density precocious orchard systems that produce a greater percentage of target fruit with the goal of reducing grower cost using labour saving technologies; b) develop pre-harvest cultural practices for the management of postharvest disorders of pome fruit; and c) develop new recommendations for thinning and plant growth regulators to address issues such as early cropping, crop load management, and enhanced fruit colour development.

Chemical thinning of apples is necessary to reduce the crop load, enhance fruit size and minimize biannual bearing. Early fruitlet thinning continues to be an increasingly important management tool among Ontario growers in order to reduce the labour costs of hand thinning and optimize fruit quality. This project evaluated the dynamics of fruitlet drop after 6-BA, carbaryl, and NAA were applied when fruits are 8-12 mm in diameter followed by additional sprays of 6-BA and Carbaryl seven days after the first application. Often, repeat 'rescue' thinning sprays of Carbaryl and 6-BA are desired when initial sprays appear ineffective, but the effect of additional sprays is not well understood and there is grave concern of over-thinning. Preliminary results from this study indicate second sprays of 6-BA and carbaryl increase thinning activity and can be very effective, but the response is dependent upon weather (air temperatures and light levels) during the fruitlet thinning window.

The use of harvest management bioregulators such as ReTain™ for high-value cultivars such as 'Honeycrisp' and 'Ambrosia' was also a focus of this project. These compounds are being evaluated for their effectiveness in promoting colour development of select cultivars (eg, 'Ambrosia'), reduced pre-harvest fruit drop (eg, 'Honeycrisp'), and help manage fruit maturity to assist with harvest management. Detailed results of this project will be made available in the winter of 2014/2015.

This project is funded by the OAG and the University of Guelph and OMAFRA Research Program.

Assessment of the Distribution and Natural Enemies of the Brown Marmorated Stink Bug in Southern Ontario – Cynthia Scott-Dupree (University of Guelph), Hannah Fraser (OMAFRA), Tara Gariepy (AAFC) and Tracey Baute (OMAFRA)

Brown marmorated stink bug (BMSB) is an invasive pest native to East Asia. First identified in Pennsylvania in 2001, it has now been detected in 41 states and the provinces of Ontario and Quebec. In the northeastern U.S., BMSB has caused serious economic damage to important fruit, vegetable and field crops, as well as ornamental trees and shrubs. Injury to apple can be extensive and can occur throughout the growing season. BMSB was first detected in Ontario in 2010, and an established population was identified in Hamilton in 2012. In addition, there have been confirmed homeowner finds in Beamsville, Burlington, Cedar Springs, Delhi, Fort Erie, Grimsby, Kincardine, London, Maidstone, Milton, Niagara Falls, Niagara-on-the-Lake, Ottawa, Paris, St. David's, Stoney Creek, Tecumseh, Toronto, Vaughn, and Waterdown. These finds have been the result of outreach efforts and submissions to the Ontario Ministry of Agriculture, Food and Rural Affairs.

Based on our two-year field survey, breeding populations of BMSB are established in Hamilton, London, Newboro, St. Catharines and Windsor. Confirmation of establishment followed multiple homeowner finds, indicating the importance of directing outreach efforts beyond the agricultural community. BMSB

adults were found in traps at 9 agricultural sites (Beamsville-2 locations, Essex, Hamilton / Hannon, Niagara-on-the-Lake, Smithville, St. David's, Waterdown-2 locations) and at 4 urban locations (Hamilton, London, Newboro, Niagara Falls). Nymphs were trapped on a mixed fruit farm near St. David's, indicating a high probability of local establishment. Low levels of stinkbug damage were found on two apple farms in the Hamilton/Waterdown areas. In 2014, the first reports of injury to landscape and garden plants were made by homeowners in Hamilton, suggesting populations are likely increasing beyond the nuisance level. Detections in traps and new homeowner finds indicate the distribution is potentially widespread in southern Ontario, though at low population levels. Continued monitoring and surveillance are necessary to document population density and spread from infested areas. Commercially available pheromone trapping systems may be useful as early detection tools and / or monitoring activities.

Additional survey work is required to confirm BMSB in other parts of Ontario, including those areas associated with new homeowner finds. A better understanding of the phenology, occurrence, and spread of BMSB in Ontario is necessary to develop an IPM strategy to limit the impact of this pest in economically important agricultural crops. Surveys for native natural enemies have shown a diversity of parasitoid species associated with stink bug eggs. However, the ability of native parasitoids to develop on BMSB is relatively unknown and their potential for suppressing BMSB populations warrant further investigation.

Funding for the project "Assessment of the Distribution and Natural Enemies of the Brown Marmorated Stink Bug in Southern Ontario" was obtained through the OMAF and MRA / University of Guelph Partnership program with the financial support of the Grain Farmers of Ontario, the Grape Growers of Ontario, the Niagara Peninsula Fruit and Vegetable Growers' Association, Ontario Apple Growers, and the Tender Fruit Producers' Marketing Board.

Pest Management and Sustainable Agricultural Pest Management – Dr. Miodrag Grbic, Western University

A locally-led international team, with funding from the Ontario Research Fund, is studying the spider mite, a major pest of greenhouse, horticulture and field crops. The team has uncovered many interesting facts related to spider mites' feeding preferences, physiology and the genetic-based mechanisms behind their ability to feed on over 150 plant types worldwide and capability to adapt to chemicals such as miticides. In 2014, the research team collected samples of European red mites from two apple orchards in the Simcoe area, one using conventional miticide application to control spider mites and the other using oil spray only, to establish a lab colony for miticide-resistance testing. The team also hopes to collect overwintering eggs this fall in order to develop an additional colony in the spring.

With a focus on Ontario crops, this research team aims to use the spider mite as a model for cell-content feeding pests (including thrips and aphids) to develop sustainable pest control strategies to reduce crop damage. This research involves scientists at Western, Agriculture and Agri-Food Canada, the Ontario Ministry of Agriculture, Food and Rural Affairs and Vineland Research and Innovation Centre, in combination with interested growers and industry partners including the Ontario Apple Growers. For more information, please visit www.spidermite.org.

Improving Efficiencies in Ontario Apple Orchards – John Zandstra, University of Guelph

John Zandstra is the lead researcher on a WAMQI funded project "*Management of Bitterpit in Honeycrisp Apple*" which is examining the effectiveness of woodchip groundcover at moderating soil moisture levels with and without irrigation. The goal is to see if mulch can provide some relief of bitterpit in Honeycrisp orchards which are not irrigation. This is also the final year of a project evaluating the influence of rootstock on bitterpit incidence in Honeycrisp (using nine different rootstocks).

The Cedar Springs Research Station is also a location of the NC-140 Honeycrisp Rootstock Trial, which was established in 2014 and contains M9 T337, M26 EMLA, MM 106, M7, 3 Vineland rootstocks and 6 Geneva rootstocks. They are collaborating with Dr. John Cline on this project with a second location in

Simcoe, Ontario. This project was sponsored by the Canadian Horticulture Council through the Canadian Agri-Science Cluster 2 program.

Trials were also conducted at the Cedar Springs Research Station in the spring of 2014 to evaluate the Cornell Precision Thinning protocol. Their “carbohydrate model”, which uses weather data to adjust thinning rates up or down, was provided by Weather Innovations (WIN). These trials were conducted on Gala and Honeycrisp and were compared to thinning with the thinning disk.

Cedar Springs’ location has a high density planting of Honeycrisp and Ambrosia on B9 at densities of 907, 1210 and 1815 trees/acre (2’, 3’ and 4’ between trees on 12’ row spacing) and are working with Leslie Huffman on some different pruning techniques to try and find the proper spacing/pruning approach to allow Ambrosia to fill in allotted space.

Improvement of Irrigation efficiency in Orchards and Vineyards in Ontario – Rebecca Shortt and Kathryn Carter, OMAFRA

In 2013 funding from WRAMI allowed the tender fruit, apple and grape growers to conduct a research project aimed at evaluating the accuracy, user friendliness and cost of three different moisture probes in seven orchards and vineyards across Ontario. The results of this project showed that Decagon EC-5 probes were preferred over the other probes due to their cost, reliability and ease of use. Additionally, results showed considerable differences in soil moisture levels in different soil types. Despite the above average rainfall in 2013, we determined that irrigation efficiency (timing and amount of water applied) in both orchards and vineyards can be improved.

This year’s project focuses on automating and adapting existing soil moisture monitoring systems, as well as installing automated stations in new sites, to allow growers to view real time soil moisture measurements on AppleTracker. The information presented (ideal irrigation trigger, permanent wilting point and field capacity) will assist growers in determining the timing and need for irrigation application. Growers who are set up to do so will also be able to view their soil moisture measurements (12” and 24”) online and use this information to determine if they have over or under irrigated. Soil moisture probes have now been removed and OMAFRA staff are producing reports of the summer monitoring for each participant along with a final report of results to the boards. Irrigation workshops will also be held during the winter months.

Funding for this project was provided by the Water Adaptation Management and Quality Initiative through Farm and Food Care.



Trellis Demonstrations for Ontario Apple Farmers – Leslie Huffman and Hugh Fraser, OMAFRA

As new apple orchards are planted in Ontario, many apple farmers are looking to high density planting systems. These new systems require fully dwarfing rootstocks that require support, and trellising is more cost-effective than individual trees stakes at higher tree densities. There are many aspects of designing and installing successful trellises that are new to many apple farmers. There are many different systems, materials and methods of installation that a grower can choose from. Information is lacking on suitable systems for Ontario conditions. Information on materials, engineering designs, anchorage and methods of installation will be very important information for a grower when making the large investment in new orchards, including trellises. The goal of this project is to establish 5 demonstration sites in the different Ontario growing regions, evaluate their performance and provide growers with the opportunity to learn about different options available to them.

This project is funded in part through *Growing Forward 2* (GF2), a federal-provincial-territorial initiative. The Agriculture Adaptation Council assists in the delivery of GF2 in Ontario.

Efficacy and application timing of Calcium Chloride to manage bitter rot on apples at harvest

Michael Celetti, Kristy Grigg-McGuffin, Margaret Appleby, Leslie Huffman, Christoph Kessel, OMAFRA
In 2012 and 2013 unusual spots and blotches on apple fruit were observed during warm weather, particularly on Golden Delicious and Gala. Similar observations were reported from researchers in West Virginia and New York. Fruit rot symptoms appear as dark sunken lesions that develop salmon-colored spores in humid or wet weather. Preliminary surveys have determined the fruit spots to be caused by *Colletotrichum acutatum*, the causal agent of Bitter rot.

Currently, there is no information available on management strategies for bitter rot in apples grown in Ontario. Some fungicides appear to have activity against diseases caused by this pathogen in other crops that, if registered on apples, could be used as part of an integrated pest management strategy. However, alternative products should also be investigated and if found efficacious, integrated into the fruit rot management strategy. Applications of calcium salts and particularly calcium chloride (CaCl_2) were shown to significantly reduce bitter rot incidence and severity in apples in inoculated trials conducted in West Virginia (Biggs1999). Unfortunately, the CaCl_2 was applied at different times over the 3 years that the trials were conducted and no information on optimum timing of the CaCl_2 was determined.

The objective of this project is to investigate the efficacy and application timing of CaCl_2 applied as a foliar spray on Ambrosia during the growing season for the severity and incidence of bitter rot on fruit at harvest. Trees were assessed for phytotoxicity and calcium (Ca) in leaves and fruit just prior to harvest. Diseased-free fruit, harvested from the untreated trees and trees receiving CaCl_2 applied at the different times during the growing season, were also assessed for fruit rot development after 1, 2 and 3 weeks in cold and will be assessed after 3 months in Controlled Atmosphere (CA) storage.

Preliminary results indicated that foliar applications of CaCl_2 did not reduce the incidence or severity of Bitter rot in Ambrosia apples. In fact, the data suggests that foliar applications of CaCl_2 may increase the incidence or severity of Bitter rot, however, more analysis of the data is ongoing. This suggest that perhaps Ca applied to control Bitter pit, a physiological disorder, may result in causing fruit to become more susceptible to this pathogen. More studies are required to confirm these results.

Apples without visible infections collected from CaCl_2 treated trees and placed into cold storage appeared to develop more Bitter rot lesions in storage than disease free apples collected from untreated trees. Evaluation of apples from untreated and CaCl_2 treated trees placed into CA will be evaluated in early 2015.

Funding for this project was through Horticulture Crops Ontario.

Apple Variety Testing Projects

The OAG has partnered with two leading organizations to maximize our work in the area of apple variety breeding and evaluation.

Canadian Tree Fruit Products Development – Erin Wallich, Summerland Varieties Corporation

British Columbia Fruit Growers' Association (BCFGA) is the lead applicant in this Agri-Innovation Program (AIP) funded project. The partners on the project are Summerland Varieties Corporation (SVC), Pacific Agriculture Research Centre (PARC), OAG, and RECUPOM in Quebec to support the national Grower Testing program.

The objective of the Grower Testing Program is to develop and implement a comprehensive testing program for new apple selections from PARC. After identifying new commercial apple releases with potential economic benefits to the Canadian apple industry, the program is designed to minimize risk to growers by demonstrating that a new variety can be successfully grown throughout Canada's apple producing regions. Testing will also prove whether a variety will retain premium quality throughout commercial storage, pack, and retail display, and that a variety has enough consumer appeal that people

will choose it over other commercial varieties.

The apple breeding team at PARC-Summerland performs initial crosses and early testing of fruit tree selections in an effort to develop superior varieties adapted to Canada's climate and soils. New varieties are selected using a number of commercial and agronomic criteria such as taste, juiciness, crispness, appearance, disease resistance, size, colour, productivity, storage life and overall quality. Promising selections are then released to SVC who coordinates Grower trials in British Columbia and works with OAG and RECUPOM to establish similar apple trials in Ontario and Quebec. A limited number of varieties are then included in large-scale trials with several acres of a new variety planted in one orchard.

As part of the original DIAP, OAG planted 7 new PARC apple varieties in 2012. The varieties were planted in 10 orchards, with two sites within each of five growing regions. Trees were measured at 1st leaf and a few fruit were collected for informal tastings with apple growers in every Ontario district. Trees are now in their second year of fruit production and growers have begun gathering data on individual tree yields, harvest timing, fruit quality and uniformity, and overall impressions. As expected, fruit quality and appearance are variable by site.

OAG arranged for another 5 apple cultivars to be August budded in 2013, although only 3 of the 5 varieties will result in finished trees. OAG will plant those trees in spring 2015. Meanwhile, the failed two varieties along with an additional two varieties were August budded in 2014 and will be available for planting in spring 2016.

Varietal Testing at Vineland Research and Innovation Centre (VRIC) – Daryl Somers, Vineland Research and Innovation Centre (VRIC)

Over the past year, Vineland has focused a lot of attention on increasing the size of the seedling nursery. Our target is between 20,000 – 30,000 seedlings. This task has been challenging in previous years due to weather conditions during crossing in May and the ability to generate sufficient seed. During the winter, Dr. Somers consulted with a breeding company in Belgium (Better 3 Fruits) and gained insights in how to modify the procedures for crossing to generate large amounts of seed. This was very successful in May 2014. With good weather conditions, >10,700 individual flowers were crossed in 35 combinations leading to extraction of >25,000 seeds. The parents used in the crossing showed strong performance in sensory and consumer evaluations in prior studies. The connection to Better 3 Fruits has also led to an arrangement to receive apple pollen from some of their best selections that carry high fruit quality attributes.

Combining the sensory evaluation data (2012, 2013) with the apple DNA sequence information and biochemistry evaluations of apples has taken much longer than anticipated and is not complete. This is now a high priority so that this information can be used in developing new molecular markers for apple breeding and be used in the 2015 season to cull populations and inform us on which crosses have the most potential. We have a plan to complete this work before Jan 1, 2015. In 2014, Vineland executed sensory evaluation on 2 apple varieties (Gala and McIntosh) collected from orchards in three Ontario apple growing regions; Niagara, Simcoe and Durham. Data collection was completed in October 2014 and analysis is ongoing. This information will help us understand if sensory differences exist between apples grown in different regions and will help to interpret the mapping of sensory perception onto the apple genome.

Advanced Low Oxygen Storage for Ontario Apples – Dr. Jennifer DeEll, OMAFRA

This project is a two-year study led by Dr. Jennifer DeEll (*Fresh Market Quality Program Lead* with OMAFRA) to test a new dynamic CA control system, used to determine safe low oxygen levels for Ontario apple cultivars.

Results to date for this project include installation of new additional equipment at the OAG Storage Lab including new controllers which will allow for ultra-low oxygen concentrations to be utilized. In addition, the novel SafePod system is on-site and awaiting final installation. This system allows for monitoring fruit

health (through respiration) so that the absolute lowest oxygen concentration can be determined in relation to fruit stress. Test apples have been harvested and storage trials will begin upon final installation of all equipment. Fruit from the 2014 Ontario apple harvest has been procured for the trials and is currently being held in storages at the OAG Storage Lab.

Data and results from testing such new advanced storage control system technologies will provide apple growers and CA storage operators with optimum oxygen and carbon dioxide levels for their storages, assisting the industry in supplying superior quality fruit throughout the year.

This project is funded in part through *Growing Forward 2* (GF2), a federal-provincial-territorial initiative. The Agriculture Adaptation Council assists in the delivery of GF2 in Ontario.

Canadian Agri-Science Cluster for Horticulture 2

The following industry-driven issues, which were common throughout the collaborating provinces, are being investigated with funding from the Canadian Agri-Science Cluster for Horticulture 2 (within the Growing Forward 2 program) with total funding of \$1.5 million over 5 years (2013 to 2018).

Optimizing Storage Technologies to Improve Efficiency, Reduce Energy Consumption, and Extend the Availability of Canadian Apples – Dr. Jennifer DeEll, OMAFRA

Improving tree fruit storage management using weather based predictions of fruit quality at harvest – Dr. Gaetan Bourgeois, AAFC

Performance of Honeycrisp on New Size-Controlling Rootstocks – Dr. John Cline, University of Guelph

New biological control agents for postharvest diseases of pome fruit – Dr. Louise Nelson, University of British Columbia

CHC has implemented the following communications plan and will be posting Cluster 2 reports to the CHC website, www.hortcouncil.ca/projects-and-programs/agri-science-cluster2.aspx:

- Progress Report for industry, due December 5, 2014
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Defining, Targeting and Mapping Apple Sensory Preference of Ontario Consumers – Dr. Amy Bowen, Vineland Research and Innovation Centre

The ultimate objective of the CAAP project “*Defining, targeting and mapping apple sensory preference of Ontario consumers*” is to combine sensory and consumer science with applied genomics to identify unique sensory traits that will inform growers and breeders of the most desirable attributes for the selection of new apple cultivars in Ontario which meet consumer acceptance.

A total of 77 apples varieties, heritage and commercial were profiled from June 12th, 2013 to January 29th, 2014 by the Vineland Sensory Panel to determine their sensory characteristics. Additionally, 6 apple varieties were retested to examine effects of additional storage time on their sensory profiles, totaling 83 apples tested. This information was added to the 2012 preference map to explain the sensory attributes related to consumer liking / disliking.

The sensory and consumer objectives of this study were:

- 1) Determine the sensory profiles of heritage and commercial apple varieties;
- 2) Determine the consumer preference of the 77 apple varieties testing in the 2013 study; and,
- 3) Compare the consumer preference of the apples in the 2013 study to the consumer preference of apples in the 2012 study.

Results:

- 1) Similar to the 2012 study, the apples tested in the 2013 study were perceived as significantly different for the sensory attributes: sweet, acid, bitter and astringent taste; skin thickness, crisp, juicy, mealy and rate of melt (ROM) texture; and, oxidized apple, earthy, honey, lemony, floral, fresh green apples and fresh red apple flavor. The only sensory attribute for which the apples were not perceived as significantly different was *hay* aroma/flavour.
- 2) The five most preferred apples by consumers overall (100%) and by Consumer Group 1 (89%) in 2013 were Aurora, Honeycrisp, Ambrosia, Fuji and Crimson Crisp. The 5 most preferred apples of Consumer Group 2 (11%) of the 2013 sample were Sweet Tango, Ontario, Elstar, Jazz, Honeycrisp, and Crimson Crisp.
- 3) Apples profiled in 2013 were described by the same sensory properties and were located in close proximity to that variety profiled in 2012. While 2012 and 2013 had very different growing conditions, the sensory properties of the apples did not in general vary significantly from one year to the next.

Investment in this project has been provided by Agriculture and Agri-Food Canada (AAFC) through the Canadian Agricultural Adaptation Program (CAAP). In Ontario, this program is delivered by the Agricultural Adaptation Council.

Tree Fruit Cost of Production/Profitability Tracking & Reporting System – Larissa Osborne, Ontario Apple Growers & Ontario Tender Fruit Producers

This multi-year project which aims to modernize the way Ontario's tree fruit industry (apples and tender fruit) tracks and reports cost of production data both at the industry level and the individual grower level.

At the industry level, the Ontario Tender Fruit Producers and the Ontario Apple Growers perform the rigorous process of surveying grower members for industry cost of production data. This data is compiled into a Cost of Production (COP) document that serves as a valuable benchmark for our stakeholders.

At the grower level, a tremendous opportunity exists to provide a cost of production/profitability tracking and reporting system for various aspects of individual grower operations. Growers would benefit from a user friendly tool designed to help track their costs and gauge profitability by selected criteria. FruitTracker/AppleTracker.com currently exists as a record keeping, orchard management software system. It draws on grower's GPS data and tracks production activities such as spray, fertilizer and harvest events to which cost tracking functionality would be linked. The design and development of tools for capturing labour costs accurately and efficiently would provide valuable information that growers could use to expedite work flow and enhance labour productivity.

This project is funded in part through *Growing Forward 2* (GF2), a federal-provincial-territorial initiative. The Agriculture Adaptation Council assists in the delivery of GF2 in Ontario.

Tree Fruit Worker Health and Safety Manual and Online Module – Larissa Osborne, Ontario Apple Growers & Ontario Tender Fruit Producers

This joint project acts upon the opportunity to reduce risk and injuries within the Ontario apple, tender fruit and fresh grape industries. The project aims to provide grower members from these sectors with relevant and practical health and safety information, templates and tools, integrated within the existing Fruit/Apple Tracker record keeping management system to help them manage health and safety in their operations. The Boards are working with Worker Safety and Prevention Services (WSPS) who are experts in Ontario in this area.

This project is funded in part through *Growing Forward 2* (GF2), a federal-provincial-territorial initiative. The Agriculture Adaptation Council assists in the delivery of GF2 in Ontario.

Ontario Agriculture and Food Strategy - Health Pillar – Susan Fitzgerald, President’s Council

The Ontario Apple Growers are the lead applicant on this project as a member of the President’s Council. The ultimate goal is to develop an Ontario Agriculture and Food Strategy that will ensure a successful and sustainable future for the Ontario farmers, food companies and bio-economy firms that will contribute to a stronger economy, jobs and a healthier society in Ontario. Three key strategic areas were identified: economic growth, health and environment. This project focusses on health. In the short term, the project will produce a document outlining agriculture and food strategies which complement and enhance health. The connection between our health and the food that we eat is almost too obvious, however, we could do much more to improve human health and well-being if specific strategies and interventions to achieve health and nutritional goals were clearly articulated and linked to food production. President’s Council is partially funding this project.

This project is funded in part through *Growing Forward 2* (GF2), a federal-provincial-territorial initiative. The Agriculture Adaptation Council assists in the delivery of GF2 in Ontario.

Growing Forward 2 Organic Science Cluster Projects

The OAG is a partner on two projects within the Growing Forward 2 Organic Science Cluster. Both projects will run until March 31, 2018.

Development of organic control strategies for apple scab - Dr. Deena Errampalli, AAFC

This project has two main objectives:

1. To test or evaluate full season organic spray programs consisting of sulphur, liquid lime sulphur alone or in combination with the following:
 - 1a. *Bacillus* sp. or *Trichoderma* or other biocontrol agents (endophytes)
 - 1b. Methyl jasmonate, chitosan (Elexa) or other plant resistance activators
 - 1c. Evaluation of full season spray program-field trials
 - 1d. Management of leaf debris: with biological sprays and shredding of debris.
2. Project evaluation using the data from the objectives above, generate economic analysis of organic spray programs and improve recommendations for the control of apple scab and postharvest diseases in organic apple orchards.

Results on this project will be reported as they become available.

Integrated organic practices in apple orchard management - Dr. Julia Reekie, AAFC

The overall objective of the project, ‘integrated organic practices in apple orchard management’, is to develop innovative ground cover systems for supplying nitrogen to organic apple orchards for the maintenance of tree health and to devise effective pest management practices to safe guard marketable organic apples so as to meet consumer demands.

The challenges of providing adequate tree nutrition to maintain tree health and effective pest management practices to produce marketable organic apples are paramount. Four specific objectives we are focusing on in this project are:

1. To assess the impact of a modified ‘Swiss sandwich’ system on soil nitrogen supply, tree performance and fruit quality in an organic ‘Honeycrisp’ orchard in Nova Scotia.
2. Evaluate rates, timing and application methods (trunk injection) of promising scab-resistance inducing compounds, salicylic acid, cinnamic acid and glycerol-3-phosphate, for the development of viable commercial applications.
3. Integration of the induced resistance for scab control and black rot control treatments.
4. Investigate the efficacy of Quassia Extract MD (TriFolio-M GmbH) in the control of both primary and secondary European apple sawfly damage to fruit and to determine the lowest effective concentration of Quassia Extract MD to control European apple sawflies in Canada.

We aim to develop novel pest and nutrient management practices that will reduce costs of production, improve fruit quality and grower profitability while protecting the environment. We are addressing four of the major impediments to profitable organic apple production; (1) sources of nitrogen fertilizer, (2) management of apple scab with fewer fungicide applications, (3) control of a new invasive insect the European Apple Sawfly, and (4) control of black rot of the fruit. Our long-term goals are the development of practices for nitrogen supplementation by the modified 'Swiss sandwich' ground management system, and a new product, Quassia Extract, for European apple sawfly and Serenade Max or lime sulfur to control black rot.

This is the first season of our 4-year project. We have initiated experiments addressing the specific objectives. Data from the first season has been collected and we are currently in the process of entering the data for statistical analysis. Statistical analysis will be completed prior to the initiation of the second year to allow us to modify experimental procedures in the following years, if deemed necessary.

Other Research and Services

AppleTracker.com – The web-based system 'AppleTracker.com' is maintained by the Ontario Apple Growers as an online system providing a comprehensive tool for growers to record their spray records, harvest data as well as shipping and storage information. This program also provides growers with the reports needed for CanadaGAP food safety program.

The OAG Storage Lab – The OAG Storage Lab is located at Norfolk Fruit Growers' Association in Simcoe, Ontario and continues to pay benefits for the Canadian apple industry. When first established, the storage lab was supported by the Apple Working Group members of Canadian Horticultural Council with cost-shared funding from the CanAdvance Program. The Lab continues to be fully utilized again this year. The industry very much appreciates the cooperation of the Norfolk Fruit Growers' Association and the efforts of Dr. Jennifer DeEll, OMAFRA Post-Harvest Lead.

Orchard Network News - The Orchard Network News publication continues to be a useful vehicle for technology transfer to apple growers. We greatly appreciate the efforts of the Ontario Ministry of Agriculture and Food "Apple Team" and the research and extension community for delivering this publication to our members. We also thank our advertisers and sponsors who provide support for printing and mailing of the newsletter.

Acknowledgements

The Ontario Apple Growers acknowledges and thanks the support of our many funding partners. In the above research report we have acknowledged the partners for each of the projects.

Growing Forward 2 is a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of GF2 in Ontario.



OAG APPLE RESEARCH AND SERVICES PRIORITIES

November 2014

<u>Innovative IPM Systems</u>
ENHANCING IPM KNOWLEDGE AND PRACTICE IN CURRENT PRODUCTION SYSTEMS, INCLUDING INCORPORATING NEW PESTICIDES, ALTERNATIVE CONTROL MEASURES, UNDERSTANDING PEST/BENEFICIAL DYNAMICS, AND IMPACTS ON FRUIT QUALITY & STORABILITY
Emerging Pest Issues: Expanding infestation areas Apple leaf curling midge, Apple maggot, mites, bitter rot, borers and European apple sawfly. Re-emergence of San Jose Scale and cankers.
Development of sustainable IPM practices and resistance management including pesticide efficacy testing, pesticide timing using degree day predictive models, mating disruption strategies and evaluation of biological controls.
Strategies for management of Fire Blight on pome fruit including nursery tree health, plant growth regulators, cultural methods, bio-pesticides, predictive models and non-chemical alternatives especially in high density systems.
Development of an integrated approach for difficult diseases and disorders such as Black and Bitter rot (including cankers), Russetting, Root and Crown rot (e.g. replant disease).
Due to the loss of broad spectrum products, evaluate late season reduced risk insecticides for apple maggot, OBLR, Codling moth, Woolly Apple aphid and OFM including the efficacy of border sprays.
Invasive species/pest issues (for example: Brown marmorated stink bug, Apple clearwing moth, viruses and phytoplasma).
Characterization of the changing patterns of resistance in Powdery mildew, Apple scab, Fire blight, Codling moth, Oriental fruit moth (OFM) and mites and ongoing sustainable and affordable resistance testing service for growers.
Optimizing sprayer performance for improved coverage, product efficacy and controlling input costs by eliminating wasted spray. Investigate new application technology techniques such as fixed sprayer systems or storage fogging.
<u>Postharvest Strategies for Apple Quality</u>
Storage Technology: <ul style="list-style-type: none"> - Harvista (1-MCP orchard spray) - Best practices for SmartFresh - Storage recommendations for new varieties - New storage technology related to fruit stress and/or energy efficiency
Control and Management of Storage Diseases and Disorders: <ul style="list-style-type: none"> - Fungicide resistance - Investigating new products for control - Optimizing storage regimes to reduce disorders
<u>Marketing Strategies</u>
Consumer preference testing and taste profiling to guide future cultivar development and planting decisions.
New value-added product development utilizing fresh apples.
Research on the healthy attributes of apples and apple products including areas such as nutraceuticals, functional foods (for example: antioxidants, bioflavonoids and other functional components).
<u>Crop Cultural Management</u>
Orchard system efficiencies with the goal of reducing grower cost of production (for example:robotics, platforms, high density systems, mechanical thinners, light interception methods, fixed application systems, mechanized pruning/hedging and harvest options).
Development of practical approaches to in-field maturity assessments including fruit firmness, brix and colour to assist growers in determine optimal harvest timing.
Developing and evaluating new apple cultivars and selections.
Evaluation of rootstocks for high density orchards for hardiness, disease resistance and orchard performance.
Research to enhance the production of quality and affordable nursery stock.
Research and evaluation to optimize crop nutrition, including soil-applied foliar and fertigation programs including efficacy and cost-effectiveness analysis.
Develop irrigation scheduling and performance for high density orchard systems.
Evaluation of frost and other risk management protection methods including weather monitoring equipment.
New recommendations for plant growth regulators including thinning (precision crop load management), stop drop, early cropping and canopy development. Research and development on thinning options as consistent and effective as carbaryl with a wide application window.
Enhancing the habitats of natural pollinators to augment the use of pollination services.
Evaluation of new pollination methods including the use of bumblebees and inter-planted crabapples. Re-evaluate recommendations to ensure adequate pollination of new cultivars and throughout high density orchards, including integrating honeybees, commercial bumblebees, natural pollinators and crabapples pollinizers.

CANADAGAP REPORT

CanadaGAP™ is a food safety program for companies that produce, pack, repack, store and wholesale fruits and vegetables. It is designed to help implement effective food safety procedures within fresh produce operations. The program have been benchmarked and officially recognized by the Global Food Safety Initiative (GFSI). Audit and certification services for the program are delivered by third party, accredited Certification Bodies. Apple farmers and packers across Canada have been active participants in the program. In Ontario, it is estimated that over 100 apple farmers are CanadaGAP-certified.

CanadaGAP now serves over 2,500 produce operations across Canada, as well as a few companies based in the United States. Over the past year, the program introduced certification for repacking and wholesale facilities. GFSI recognition of the new certification option (Option D) will be pursued once the first ten certificates are issued, which is expected by late 2014. Plans are underway to cover brokerage firms in the next version of the manual. A major change effective April 1, 2015 will require packing, repacking, storage, wholesale and brokerage operations to source product from producers who have been third party audited or certified to an industry-recognized program (CanadaGAP is one option). Those unable to comply with the new requirement will lose points on their audit. CanadaGAP is also in progress with CFIA Technical Review of the program management system to demonstrate conformance with government requirements and administrative effectiveness.

APPLE WORKING GROUP UPDATE

The Apple Working Group (AWG) met formally twice in 2014: at the CHC AGM in March and the Mid-Summer meeting in July. A number of conference calls have taken place as well. Brian Gilroy (Ontario rep) is the current Chair of the AWG.



The direction and work plan of the AWG includes, but is not limited to:

- AgriMarketing Program
- Canadian Agri-Science Cluster for Horticulture 2
- National Promotion and Research Agency
- Royal Winter Fair

Mid-Summer Apple Meeting

The CHC Mid-Summer Apple Meeting was held July 21-22 in Penticton, BC. The event was hosted by the BC Fruit Growers' Association and sponsored by Summerland Varieties Corporation and AgroFresh. The industry meeting and orchard tour were well attended by apple growers and industry representatives from across the country as well as the Okanagan Valley.

The working session included discussions on market situations and trends, research projects and priorities, CFIA regulatory modernization, crop protection and the Seasonal Agricultural Worker Program. The agenda also included presentations from Summerland Varieties Corporation on the commercialization of new tree fruit and berry varieties, AgroFresh on their products SmartFresh and Harvista, market situation, trends and trade data from Agriculture and Agri-Food Canada, and an overview of the Okanagan Sterile Insect Release Program.

Canadian Agri-Science Cluster for Horticulture 2

The following industry-driven issues, which were common throughout the collaborating provinces, are being investigated with funding from the Canadian Agri-Science Cluster for Horticulture 2 (within the Growing Forward 2 program) with total funding of \$1.5 million over 5 years (2013 to 2018).

Optimizing Storage Technologies to Improve Efficiency, Reduce Energy Consumption, and Extend the Availability of Canadian Apples – Dr. Jennifer DeEll, OMAFRA

- 1) Methods to control CO₂ injury without the use of diphenylamine (DPA)
- 2) Determination of DPA residues throughout storage facilities
- 3) Optimizing storage regimes for 'Honeycrisp' and 'Gala'
- 4) Effects of cooling rate on apple quality after storage

Improving tree fruit storage management using weather based predictions of fruit quality at harvest – Dr. Gaetan Bourgeois, AAFC

- 1) Bioclimatic models of apple quality at harvest and in storage will be updated or developed based on the available historical data and on the new information obtained in this project. All models will be integrated in the CIPRA (Computer Centre for Agricultural Pest Forecasting) software and made freely available to the Canadian apple industry.

Performance of Honeycrisp on New Size-Controlling Rootstocks – Dr. John Cline, University of Guelph

- 1) Measure the precocity and performance of new size-controlling rootstocks and to compare these against industry standard M.9 and M.26
- 2) Determine rootstock effects on calcium disorders, whole tree physiology, and fruit storage potential
- 3) Assess the productivity of more vigorous rootstocks M.106 and M.7 against M.26 – with a close examination of graft union compatibility

New biological control agents for postharvest diseases of pome fruit – Dr. Louise Nelson, University of British Columbia

- 1) Test several bacterial antagonists of postharvest fungal pathogens to determine their potential for development as a commercial biological control product.
- 2) The proposed research is necessary to develop a comprehensive data package showing their ability to control postharvest disease under varying conditions in two major apple growing regions of Canada. This information will help us determine if their efficacy is sufficiently broad in scope to warrant further development.
- 3) Determination of the optimal concentrations, application mode and timing are essential pieces of information for registration and commercialization

CHC has implemented the following communications plan and will be posting Cluster 2 reports to the CHC website, www.hortcouncil.ca/projects-and-programs/agri-science-cluster2.aspx:

- Progress Report for industry, due December 5, 2014
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CHC General

Over the past year, CHC's efforts have been directed toward advocacy and lobbying and strengthening linkages with a wide range of stakeholders and partners. Other focus areas included:

- | | |
|---|--------------------------------|
| • trade, industry standards and market access | • research and technology |
| • crop and plant protection | • food safety and traceability |
| • commodity coordination | • risk management |
| • outreach and sustainability | • human resources |

For more information on CHC activities or to obtain a copy of the Annual Report, please visit their website: www.hortcouncil.ca.

**DIRECTORS AND STAFF
ONTARIO APPLE GROWERS
2013/2014**

CHAIR	Charles Stevens	District 5
VICE CHAIR	Cathy McKay	District 5
DIRECTORS	Keith Wright	District 1
	Peter Geerts	District 1
	Brett Schuyler	District 2
	Bob Hepburn	District 2
	Brian Gilroy	District 3
	Shane Ardiel	District 3
	Art Moyer	District 4
	Richard Feenstra	District 4

DISTRICT GROWER COMMITTEE	Steve Versteegh	District 1
	Joe Van de Gevel	District 2
	Kyle Oakley	District 3
	Spencer Johnson	District 4
	Robert Vanderwindt	District 5

GENERAL MANAGER	Kelly Ciceran
PRODUCTION & MARKET ANALYST⁺	Larissa Osborne
MARKETING COORDINATOR⁺	Mark Chyz
TREASURER^{**}	Maureen Connell
ACCOUNTING ASSISTANT^{**}	Sylvana Lagrotteria

⁺ Shared staff with Tender Fruit Board

^{**} Shared staff with GTFOL

ASSOCIATION DELEGATES

Agricultural Commodity Corporation	Chris Hedges
Canadian Horticultural Council	Brian Gilroy (Charles Stevens – Alternate)
CHC Apple Working Group	Brian Gilroy, Brett Schuyler (Charles Stevens – Alternate)
Ontario Federation of Agriculture	Bob Hepburn
FARMS	John Ardiel (Steve Versteegh – Alternate)
Hort Crops Ontario	Kelly Ciceran
Ontario Fruit & Vegetable Growers' Assoc.	Charles Stevens (Brian Gilroy – Alternate)
Ontario Agricultural Commodity Council	Bob Hepburn (Brian Gilroy – Alternate)
Presidents' Council	Charles Stevens
Summerland Varieties Corp.	Cathy McKay
Fruit Technical Working Group	Charles Stevens and Art Moyer

COMMITTEE DELEGATES

Fresh Apple Advisory Committee	Keith Wright, Bob Hepburn, Art Moyer
Juice Apple Advisory Committee	Brian Gilroy, Brett Schuyler, Pete Geerts
Juice Apple Negotiating Agency	Brian Gilroy, Brett Schuyler, Pete Geerts
Risk Management Committee	Brett Schuyler (Chair), Pete Geerts, Brian Gilroy, Art Moyer, Charles Stevens, Chris Hedges, Bob Hepburn, Spencer Johnson, Rich Feenstra
Research Committee	Cathy McKay (Chair), Harold Schooley, Art Moyer, Spencer Johnson, Pete Geerts, Joe Van de Gevel, Shane Ardiel
Revitalization Committee	Charles Stevens, Chris Hedges, Paul Frankis, Shane Ardiel, Rich Feenstra, Tom O'Neill, Kirk Kemp, Brian Gilroy, Robert Vanderwindt
Political Action Committee	Committee of the Whole
Cost of Production Committee	Committee of the Whole

Notes



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