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January 2014 NEWSLETTER

Presidents Report

The winter meetings fast approach and the lineup for both the OBGA AGM and the Berry Day look to be some of the best I've seen. This year's offering hits every major concern our industry faces and is guaranteed to have something for everyone. Winter meetings hold opportunities for plenty of learning (remember to take quick action if you find a great product or idea that you want to incorporate it for the 2014 season) and networking opportunities. If you haven't already done so, book your hotel reservation now to make the most of the days we're in Niagara.

Aside from the moments I get away for vacations or trade shows, the majority of my winter months are spent behind our seeding machine in the greenhouse. To help pass the time quickly, I often listen to podcasts and audiobooks by my favourite marketing gurus and wizards. If you find yourself looking for a book or podcast to fill a few spare hours I'd recommend a couple of my favourites. First is a podcast by Terry O'Rielly on CBC Radio called Under the Influence. Each week is a new episode about how we (as businesses) can put consumers under our influence using creative strategies, at least that's how it sounds to me. It's actually written for consumer audience and tells about how we are influenced by marketing but I like to think of how those strategies can be employed to our advantage. I recently finished listening to the new Malcolm Gladwell book, David & Goliath, a book about how being an underdog (and aren't we all in our industry against larger competition and forces) can really be an advantage. I found tidbits in both listens that I will be working to incorporate into our marketing plan for 2014 here at Heeman's. Maybe you will too…

Finally I'd to end by not recommending that you listen to my father, Rudy during the Berry Day at the Fruit & Veg conference where he'll be presenting on traceability. He'll be talking about far more than just traceability and probably will tell you about the many pitfalls of some systems out there. It will likely just be him talking about how we finally found a system that works well for us and allows traceability down to the quart plus runs our payroll. If that sounds like something you'd like to go and hear anyways, be my guest. ;)

Will Heeman, President

From OBGA Headquarters

The plans are all in place for the upcoming berry sessions in Niagara Falls. I hope you have your hotel booked as I hear a rumour that all the Fallsview rooms are booked and you might have to look over the city. If you have not registered for the OBGA day on February 18th please do so to make my life easier and save yourself from paying the late fee.

As I mentioned in the last newsletter we as an industry are facing many challenges. Our annual meeting will be a great opportunity to learn more about these whether it is in a session or talking to fellow growers over a beverage at the hospitality suite.

Your board of directors has endorsed a plan to put a proposal together to become a marketing board. As you know the OBGA presently relies on voluntary membership and thus many growers in Ontario benefit even though

they do not support the association through membership. There is a short article later in the newsletter that gives a little more background on this initiative.

I look forward to the annual meeting to get a chance to visit with growers and the agribusiness that support our industry.

Hope to see you there.

All the best!

Kevin

Achene Report

The Achene committee met in December to follow up on some of the activities we have been working on. The work on revising our propagation guidelines to include propagation through plug culture has been completed.

The United States has developed a National Clean Plant Network (NCPN) and has invested several million dollars in this program. The Achene committee would like to see a similar plan here in Canada and will work to get the Canadian Food Inspection Agency to move towards having a similar program. This program would be for more than berries as it would service other crops like grapes and tree fruit to guarantee a supply of clean plants to propagators.

There is a concern that there could be an interruption in plant movement between countries if we do not have an equivalent program here in Canada. The OBGA was able to get a resolution passed at the OF&VGA annual meeting that asks the OF&VGA to bring this issue forward to the Canadian Hort Council (CHC). The CHC would then be asked to lobby the CFIA to look at such a program for Canadian growers

The future of the propagation program has become a regular discussion at our meetings. We have recognized that Becky Hughes is eligible for retirement in the near future and without a promise to replace her position there is a risk that our source of clean plants could no longer be available.

To continue to be able to financially support the program at New Liskeard we will need to find enough sales of plants to make sure the program remains financially viable.

We continue to be a very active committee with no shortage of issues and challenges!

Sincerely,

Paul Watson
Achene Committee Chair

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Membership

If you have not returned your membership please do so at your earliest convenience. Membership forms were included in the last

newsletter but if you can't tack that down you can find them on the Grower/Member section of the OBGA website. www.ontarioberries.com
Or feel free to call the office and I can get one to you.

Ontario Fruit and Vegetable Conference addresses important berry crop issues

By Pam Fisher, Berry Crop Specialist, OMAF and MRA

2013 - was it profitable or pestful? Spotted wing drosophila, anthracnose, virus diseases, thrips… These are all relatively new pests that have caused damage to an extent that I have never seen before.

Fortunately scientists from across North America are coming to the Ontario Berry Growers Association Annual Meeting and the Ontario Fruit and Vegetable Conference Feb. 18-20, to provide updates on these problems that affect profitability in your business.

Anthracnose fruit rot, caused by *Colletotrichum acutatum* can be very difficult to control in strawberries, especially day neutral strawberries. This disease can be symptomless and spread by workers in the field before you know it is there. Fungicides are important but very few are registered. Dr. Frank Louws, from North Carolina State University will join us to discuss management of this pest.

Spotted wing drosophila has once again caused serious losses, especially in blueberries and fall-bearing raspberries. This pest is present across the province on almost every berry farm, from Ottawa to Windsor and as far north as New Liskeard. Pam Fisher will report on the Ontario SWD projects in 2013, and how growers are dealing with this challenging pest. Stop by the OMAF and MRA booth at the trade show to ask questions and learn how to identify and monitor for SWD.

Fungicide resistance: The fungus which causes Botrytis grey mould has a great capacity to develop resistance to fungicides used to control it. Using fungicides from different groups is a very important resistance management strategy. Although there are over 7 groups of fungicides registered for Botrytis, resistance to several has been reported in eastern USA, and sometimes to more than one group at the same time. Dr Frank Louws from North Carolina will discuss this issue and how to keep fungicides working for you.

Strawberry virus diseases are causing low vigour and poor yields in June-bearing strawberry fields in Ontario and Nova Scotia. To manage this problem it is important to remove infected plantings and control the strawberry aphid. John Lewis, from Perennia, Nova Scotia, will discuss the virus situation and what we have learned in 2013 about the strawberry aphid and its control.

Nematodes: Root lesion and root knot nematode can attack roots of berry crops, causing even production and reduced vigour. Traditionally controlled by long crop rotations, or by soil fumigants, these pests are becoming more abundant as registrations become more restrictive. Alternatives to soil fumigation for nematode control include the use of soil amendments such as mustard seed meal, or nematode suppressing cover crops. Dr Tom Forge, from Agriculture and Agri-Food Canada in BC will report on the impacts of soil fumigation and alternatives on nematodes and soil ecology.

Plan to attend all three days of program. For more information www.ofvc.ca

Tues. Feb 18: OBGA annual meeting (preconference) at the Embassy Suites
Wed. Feb 19: Berry sessions continue at OFVC. Other sessions include Biopesticides, Organics, Trade show.
Thurs. Feb. 20: Many sessions including Nematodes, Specialty Fruit Crops, Trade show.

National Raspberry and Strawberry Research and Promotion Council Update

We are still waiting on the decision for the raspberry council. It now sits with the Farm Products Marketing Council of Canada to advise the Minister of Agriculture as to whether to support the formation of such an agency for raspberries.

The Strawberry proposal has been submitted and it is expected that those involved in the industry will soon be able to comment on the proposal either at hearings or through email links that will be established.

The OBGA in its present form would not be able to participate in such a council and thus is looking at options to make our association eligible to participate.

If you have any questions feel free to contact Kevin at the OBGA office.

OBGA Promotional Items

We have a good supply of Aprons (lap and bib type) along with a recipe cards and promotional brochures. If you are attending the Annual Meeting or the Fruit and Vegetable Convention and would like a few items put your order in and I can get them to you with no delivery fees.

The popular biodegradable poly bags will be ordered again this year. Last year we sold over 300 cases. They are expensive to ship so we will try again to make them available at several locations across the province.

New Products for Berry Crops

By Pam Fisher, Berry Crop Specialist, OMAF and MRA

OMAF staff are busy updating publication #360, Guide to Fruit Production. Many, many changes have taken place since the last edition was published in 2012. Here is a quick update on some of the new products for berry crops, more detail will be provided in the new publication. Check the label for rates, preharvest intervals and specific precautions.
Insecticides *(product name is followed by registration number, active ingredient, insecticide group and registrant)*

Actara 25 WG *(# 28408, thiamethoxam, Group 4, Syngenta)*. Registered for brown marmorated stink bug suppression on blueberry, elderberry, saskatoon berry and other bushberries. Registered for control of black vine weevil adults on raspberries, bushberries and strawberries.

Altacor *(# 28981, chlorantraniliprole, Group 28, DuPont).* Recently registered for leafroller control on strawberries. Existing registrations include control of many different caterpillars on bushberries (Crop Group 13-07B and raspberries and blackberries. Although it works best on Lepidoptera (caterpillar pests), Altacor will also suppress Japanese beetle.

BioProtec CAF *(#26854, Bacillus thuringiensis, Group 11, AEF Global).* The label of this product has been expanded to include all the berry crop group (13-07) for leafroller and fruitworm control.

Clutch 50 WDG *(# 29382, clothianidin, Group 4, Valent).* Registered for tarnished plant bug control in strawberries, but must be used well before bloom because it is very toxic to bees. This is not the best timing for tarnished plant bug.

Exirel *(#30895, cyantraniliprole, Group 28, DuPont).* Registered on bushberries (Crop Group 13-07B) for blueberry maggot, plum curculio, Japanese beetle, cranberry fruitworm, leafrollers, and blueberry aphid.

Intrepid 240 F *(#27786, methoxyfenozide, Group 18, Dow)*. Controls spanworms, obliquebanded leafroller and cranberry fruitworm in blueberries and other bushberries in Crop Group 13 07-B. An insect growth regulator, Intrepid is the first product in Group 18 to be registered on berry crops.

Kanemite 15 SC *(#28641, acequinocyl, Group 20B, Arysta).* Registered for two-spotted mite control on raspberries and blackberries.

Malathion 85E *(# 8372, malathion, Group 1B, Loveland).* Registered for brown marmorated stink bug suppression in blackberries, blueberries, strawberries and raspberries. So far BMSB is not a problem in Ontario berry crops.

Movento *(#28953, spirotetramat, Group 23, Bayer).* Registered for control of blueberry maggot and blueberry aphid and suppression of lecanium scale on blueberries and other bushberries in Crop Group 13—07H and 13-07B. For use after bloom.

Pyrinex 480 EC *(#23705, chlorpyrifos, Group 1B, MANA)* and **Warhawk 480 EC** *(#29984, chlorpyrifos, Group 1B, Loveland).* This active ingredient was formerly registered as Lorsban and is now registered on strawberries for cutworm and strawberry crown borer control.

Fungicides *(product name is followed by registration number, active ingredient, fungicide group and registrant)*

Confine Extra *(#3064, mono- and di-potassium salts of phosphoric acid, Group 33, Agronomy Co. of Canada)*. Registered for suppression of anthracnose fruit rot on blueberries and leather rot on strawberries.

Granuflo-T *(#30548, thiram, Group M, Engage Agro)* and **Thiram 75 WP** *(#27556, thiram, Group M, Chemtura).* Registered for Botrytis grey mould control on strawberries. This broad-spectrum fungicide is useful for rotation with other groups in a resistance management program.

Proline 480 SC *(#28359, prothioconazole, Group 3, Bayer).* This is another group 3 product, registered for mummyberry control and suppression of leaf rust on blueberries. It is also registered on bushberries for some other minor diseases, see the label.

Quash *(#30402, metconazole, Group 3, Valent).* Another group 3 fungicide, registered in highbush blueberries for control of mummyberry and anthracnose and suppression of phomopsis.

Scala *(#28011, pyrimethanil, Group 9, Bayer).* Registered for botrytis on blueberries, raspberries, and gooseberries. Probably most useful for fall-bearing raspberries, where botrytis can be a serious problem and products with short preharvest intervals are needed.

Senator 70WP *(#25343, thiophante-methyl, Group 1, Engage Agro*). This fungicide can be used for common leaf spot control in strawberries and powdery mildew control in raspberries. Be aware that although Senator is labeled for botrytis grey mould, *Botrytis* is resistant to thiophanate-methyl in many regions, including Ontario.

Scholar 230 SC *(# 29528, fludioxonil, Group 12, Syngenta)*. Registered for black root rot suppression in new and established strawberries. Can be applied as a high-volume spray to the soil or through drip irrigation systems.

OBGA Annual Meeting

Embassy Suites, Niagara Falls
February 18, 2014

If you have not registered for the OBGA meeting please do so to avoid any late fees. A registration form was included in the last newsletter but if you have misplaced it you can find it in the Grower/Member section of the OBGA website which is at the link below http://ontarioberries.com/site/growers-and-members.html

There are many good reasons to participate in the meeting so register today!

Ontario Fruit and Vegetable Convention

Scotiabank Convention Centre, Niagara Falls
February 19-20, 2013

Just a reminder that you must register separately for the OFVC. You can register online or by downloading a form at www.ofvc.ca

Tissue Culture Raspberries for Sale

Becky Hughes has a selection of raspberry plants available for sale

The plants are in 98 or 72 plug trays as indicated and would be $2.00 plus any royalties and shipping charges.

With the exception of Canby variety descriptions can be found in the berry section of the OMAF website.

These plants are suitable for fruit production. Whittamore's Berry Farm in Markham has bought Canby plug plants from us over the last several years. Mike Whittamore says "**tissue cultured plants provide an extremely uniform stand with less than 1 percent mortality. Full fruiting commences 2 years from planting."**

Cultivar	#plug plants available (72 plug plant trays)
Autumn Britten*	2500 (98 plugs trays)
Boyne	800 (98 plugs trays)
Canby	350
Encore*	300
Glen Ample*	200
Killarney	1500
Nova	1700
Prelude*	100
Royalty	200

Canby is very vigorous, with spineless canes, bright red large fruit and very good flavour. Canby is sensitive to poor soil conditions and should not be planted on heavy or poorly drained soil. Planting on a raised bed will help. Whittamore says "The fruit is moderately firm with a very high yield. For both pick your own and fresh market."

As you can see there is a limited plant supply. If you would like any of these plants order soon.

Contact Kevin at 613-258-4587 or by email at info@ontarioberries.com.

Premier's Award

The Premier's Award for Agri-Food Innovation Excellence is once again open for applications.

Each year the program recognizes up to 45 award winning innovations across the province valued at $5000 each. There is also a Premier's Award for $75,000, a Minister's Award for $50,000 and three Leaders in Innovation valued at $25,000.

Details can be found at www.ontario.ca/agrifoodinnovation
The deadline is 5:00 pm on February 28, 2014.

I also have a copy of the program guidebook and application form at the OBGA office

ALTERNATIVE FUMIGANT FOR STRAWBERRY FIELDS

The recent phase-out of the methyl bromide (MB) presents a huge challenge to strawberry producers. In the short term, growers will likely turn to other registered fumigants, which include: chloropicrin (trichloronitromethane), 1,3-dichloropropene (1,3-D), metam sodium (sodium N-methyldithiocarbamate) and dazomet. So far, the MB replacing fumigants often need to be used in combination as neither of them, single, is as effective in controlling soil pests as MB has been. The viable and environmentally acceptable alternatives to MB must be further evaluated

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Following current demand, the Ontario Berry Growers Association in the cooperation with INPRAS Consulting Inc. (an independent research company) and the financial support of the Canadian Agricultural Adaptation Council evaluated the effect of the bio-fumigant MustGro™ on soil fungal pathogens, nematodes and strawberry production. MustGro™, manufactured by the Mustard Product and Technologies Inc., is a mustard meal with glucosolinate (an organic molecule) as an active ingredient. The product comes in a form of pellets which is applied to the dry soil surface and subsequently incorporated into the soil at 4 to 6 inches depth. The active ingredient is released into the soil in the presence of water. MustGro ™ is also used as a pre-plant fertilizer with 5%N, 1%P and 1%K.

In spring 2013 strawberry fields with the history of soil borne fungal pathogen recurrence were located. Four sites were selected for the studies. The soils were sampled and tested for 25 common soil pathogens using DNA multiscan test. The scale to assess the individual pathogen concentration was : Non detected_0- 0; Low levels_**1**-1,2,3; Moderate levels_**2**- 4,5,6; High levels _**3** - 7,8,9,10. The benchmark for the soil treatment is required when pathogen levels range from moderate to high. The tests confirmed the presence of seven major soil borne pathogens among which five were identified as the causal agents of strawberry diseases *(Botrytis cinerea, Fusarium oxysporum, Fusarium solani, Pythium ultimum and Verticilium dahliae).* The species and the levels of the pathogenic fungi varied from site to site. Root-lesion nematodes were present in 3 out of 4 sites but only one site showed very high population (above 1000/kg of soil). Based on the level of the pathogens/nematodes the sites were categorized as high, moderate or low disease-risk fields.

MustGrow ™ was applied to all sites. Site 1 (high pathogen/high nematode level) received 0, 1000, 1500 or 2000 lb of MustGro™ per acre, the rest of the field was fumigated with the fumigant of the grower's selection. Site 2 (moderate pathogen/low nematode level) received 0, 750, 1000, 1500 or lb of MustGro™ per acre, no fumigation. The experimental design was CRB with 3 to 4 replications except for fumigation treatment (the whole field was fumigated excluding the plots where MustGro ™ was applied). Site 2 and 3 received 1000 lb of MustGro™ per acre; the rest of the field was not treated. Strawberry planting was done about 2 to 3 weeks following the treatment application (MustGro™ and fumigation or MustGro™ alone).

During 2012 and 2013 growing seasons soils from the experimental field/blocks were sampled and tested for fertility, soil fungal pathogens and nematodes. The soil test calculating CO_2 combustion (using Solvita system) was conducted for estimating microbial activity (expressed as a quantity of active soil carbon) in soil amended with MustGro™, fumigated or not treated. Strawberry plant performance was evaluated by assessing leaf nutrition, leaf chlorophyll (using SPAD) and, in 2013, fruit yield.

The short term outcomes resulting from MustGro™ application to the selected fields' prior strawberry planting included:

<u>Establishing effective rates of non-chemical fumigant to control re-occurrence of soil pests such as fungal pathogens and nematodes</u>

A positive correlation between the treatment application rates and the soil borne fungal pathogen populations was observed, however the relations were not linear. A noticeable reduction in the levels of two soil borne pathogens (*Fusarium oxysporum and Verticillium dahliae*) was obtained with MustGro™ rate applied at 2000lb/acre.

The effect of the treatment on nematode pool was tested. A positive correlation existed between the MustGro™ application rates and the number of root lesion nematodes. A

significant reduction (about 60%) in the number of the root-lesion nematodes was detected in the locations treated with MustGro™ at rates of only 750lb/acre (the lowest tested concentration). The highest nematode reduction was obtained at concentration of 2000lb/acre (Table 1).

Table 1 Effect of MustGro™ on root-lesion nematode number in the soil prior strawberry planting, Simcoe 2012.

Treatment	Root-lesion nematode number /kg soil
0 lb/acre MustGro™	1,207
1000lb/acre MustGro™	500
1,500 lb/acre MustGro™	353
2,000 lb/acre MustGro™	250
Fumigant (grower's selection)	10

2. Determining effect of non-chemical fumigant on plant growth and plant yield

The strawberry plants growing in the MustGro™ amended soils showed an improved plant survival rate (from 5% to 11%), better plant growth rate, higher leaf chlorophyll level and higher concentration of some essential mineral nutrients (N, P, K, and Ca) when compared to plants grown in fumigated or in non-treated soils. Strawberry yield was also positively affected by MustGro™ treatments (Table 2 and 3).

Table 2 Effect of MustGro™ fumigant on 'Annapolis'strawberry yield, Simcoe, 2013

Treatment	Strawberry Yield (g/plot)
0 lb/acre MustGro™	*3,810
1000lb/acre MustGro™	4,270
1,500 lb/acre MustGro™	4,810
2,000 lb/acre MustGro™	5,560
Fumigant (grower's selection)	6,772

The field has been described as field with high disease risk (high pathogen/nematode level); *each number represents a mean of 3 replications.

Table 3 Effect of MustGro™ fumigant on 'St-Pierre' strawberry yield, Dunville 2013.

Treatment	Strawberry Yield (g/plot)
0 lb/acre	*8.145
750lb/acre	8,791
1000 lb/acre	9,950
1,500 lb/acre	13,065

The field has been described as a field with moderate disease risk (moderate pathogen/low nematode level); *each number represents a mean of 4 replications.

3. Establishing effect of bio-fumigant on soil microbial activity

Increased microbial activity (determined by measuring soil carbon release) correlated to the treatment concentrations (MustGro vs. chemical fumigant). The lowest microbial activity (digital spectrophotometer/color coded chart with corresponding activity numbers from 0 to 5; 0-no activity, 5 very high activity) was measured in the fumigated soil (0 activity, followed by 0 MustGro™ , 1 to 2.0 activity, and 750, 1000, 1500 or 2000lb of MustGro with activity ranging from 2.5 to 4. This correlated to soil % organic matter and CEC (cation exchange capacity) which both were increased in soil treated with the bio-fumigant.

Conclusion

This project provides information on the effectiveness of MustGro™ bio-fumigant as an alternative to chemical fumigants. MustGro™ can effectively reduce concentration of the economically important soil pests thus preventing crop losses. Although application rates of MustGro™ recommended by the manufacturer (1000 lb/acre) have been determined, site specific adjustments (based on soil analysis) may be required to assure economical MustGro™ utilization.

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

AAC agricultural adaptation council

Agriculture and Agri-Food Canada | Agriculture et Agroalimentaire Canada

A Marketing Board for Ontario Berry Growers?

The Ontario Berry Growers Association has operated as a voluntary organization for many years. What this means is that those who choose to join and pay their membership fee help fund various research, education and promotion activities. Although not every berry grower in Ontario is a paying member all berry growers benefit to some degree. When the association sponsors promotion and advertising that Ontario berries are available it benefits all berry growers. The new berry variety that is now available may have had seed money for the testing and evaluation of that variety from the OBGA. Statistics Canada reported that there were 663 growers in Ontario alone. We assume that many of these may have derived some income from strawberries but may not actually be growers. We have less than 200 paid members and that includes a handful of growers who do not grow strawberries at all but rather raspberries, blueberries or cranberries.

There are many goals that your board of directors believes can be achieved by forming a marketing board including being able to communicate with more of the industry and being able to participate in programs including the proposed Strawberry and Raspberry Promotion and Research Councils. Today's programs offered by government are no longer without cost. Most programs require matching funds and thus there is a demand for increased income for the association to be able to participate in these programs.

The OBGA has secured Growing Forward 2 Capacity Building funding to help defer the costs needed to properly move forward in this initiative. There are many steps that need to be taken to get to a point where a vote can be taken. You will be asked at some point this year to cast support for the proposal. This vote will basically allow the proposal to move forward before the final vote on the finished proposal.

What will it cost me as a grower? The board of directors has started to consider this and we are looking at the Quebec model which has a membership fee, a mandatory plant check-off and a container toll. Growers already pay a container toll to the OF&VGA so we are looking at the two other options which is no different than what you may be paying today. This can always change but you as a grower will have the final say with a vote.

There will be a presentation at the annual meeting where you will have an opportunity to learn more and perhaps help with suggestions to move the process along.