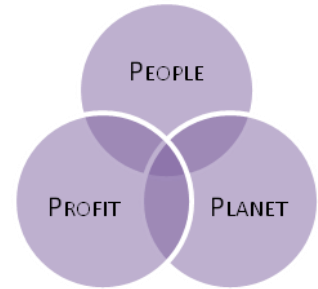


# SUSTAINABILITY COMMITTEE NEWSLETTER

## SOIL QUALITY

JULY 2011



### OVERVIEW

The wine industry is deeply rooted in the land they maintain. In fact, the character and quality of a wine is defined by the land on which it grows.

Many conventional farming practices can damage the land rather than protect it. Nutrients added through chemical fertilizers can lead to an over dependence on synthetic nutrients and strip additional nutrients from the soil. The production of chemical fertilizers and the mining of potash also have significant environmental costs while consuming a limited natural resource.

Additionally, pesticide use may have strong negative environmental consequences. Pesticides can pollute our surface water and groundwater sources, can be extremely toxic to animals and humans and can be carcinogenic when consumed. Over time pests can also develop resistance to pesticides, which reduces their effectiveness.

However, the federal and provincial governments offer support to individuals in the agricultural sector who wish to engage in more sustainable practices.

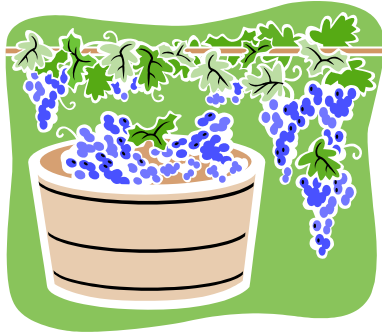


### WHAT'S YOUR STORY?

Help Ontario's wine industry become more 'Green'. Share a story on how your company has benefited from applying the principles of sustainability in your facility. We are also interested in what specific topics you would like to see addressed in these newsletters.

*Please contact Regina Foisey with your stories or requests at:*

[regina.foisey@winesofontario.org](mailto:regina.foisey@winesofontario.org)



## MONITORING SOIL HEALTH

Of course, as with all environmental parameters, you must measure before you can manage the health of soil in your vineyard. OMAFRA provides a [listing of companies who will undertake analyses](#) on the health of the soil in your vineyard. They also offer a [Soil Fertility Handbook](#), which may be obtained through the [Service Ontario](#) website.

## NUTRIENT MANAGEMENT PLANS

Nutrients in soil play a key role in the growth and development of plant matter. However, these nutrients can also severely impact surface water and drinking water supplies. The Walkerton tragedy was a direct result of poor nutrient management practices. As a result, the Government of Ontario enacted the [Nutrient Management Act](#) and [Regulation 267/03](#), which outlines the purpose of, the details which must be contained in, and regulatory requirements for Nutrient Management Plans.

Understanding the specific nutrient needs and requirement of crops is very complex. In order to simplify this process the [Ontario Ministry of Agricultural, Food and Rural Affairs](#) (OMAFRA) offers [software which creates nutrient management plans for agricultural materials](#). If you are unable to use this software, the OMAFRA also offers a [Nutrient Management Strategy/Plan Preparation Workbook](#) which may be used to develop your nutrient management plan, assuming you have completed the prerequisites.



### PILOT WASTEWATER TREATMENT PROJECT

Xogen Technologies Inc has built a new pilot plant to treat wastewater at the Orangeville Water Pollution Control Plant.

The technology produces a fuel source (hydrogen and oxygen gas) and biosolids, which may be used for compost, while treating the wastewater.

The [media release](#) contains more information about the technology. Further information may be obtained at [info@xogen.ca](mailto:info@xogen.ca)

## ENVIRONMENTAL FARM PLAN

The Canada-Ontario Environmental Farm Plan goes into greater depth in helping farmers improve their environmental performance. Areas which the Environmental Farm Plan addresses include, but are not limited to:

- Water wells
- Pesticide handling
- Water efficiency
- Energy efficiency
- Soil management
- Field crop management

Their [website](#) outlines methods of becoming involved in the program, which are summarized as follows:

1. Contact a [local representative](#) to attend a workshop
2. Submit the plan you developed at the workshop for peer review
3. Implement your plan

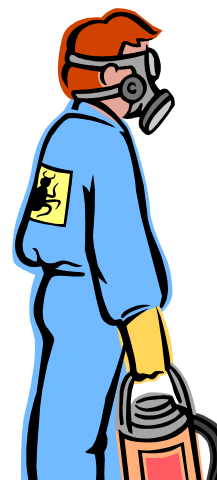
Developing this action plan will improve your performance by addressing the areas of concern identified while completing the Environmental Farm Plan Workbook. The Workbook also offers several [info-sheets](#) with suggestions on how to address specific issues on your property. Completion of this program will allow access to several [cost-share programs](#) to assist your vineyard in implementing the developed action plan.

## PESTICIDES

Many pesticides are known to be carcinogenic, while it is unknown what the long term effects of other pesticides may be. There is increasing pressure from the public and government organizations to reduce the use of these synthetic chemicals.

Agriculture and Agri-food Canada along with Health Canada's Pest Management Regulatory Agency have developed a [Pesticides Risk Reduction Program](#). The program provides regulatory support and funding for implementation of strategies developed to reduced pesticide use for select crops and priority pest management issues.

Grapes are a select crop that has been identified by the program. They have created a ['Crop Profile for Grape in Canada'](#), which outlines the issues grapes face and some management options.





## PESTICIDE RISK REDUCTION PROGRAM PROJECTS

As part of the pesticide risk reduction program, Agriculture and Agri-Food Canada has funded several research projects related to reducing pesticide use in Canada.

These projects direct research into:

- [Drift Recovery Sprayers](#)
- [Mating disruption of the grape berry moth](#)
- [Grape IPM System](#)
- [Bio-fungicide](#)

They are currently finishing updates on each of these topics. You may gain more information on these topics or research being conducted by the Pesticide Risk Reduction Program with the contacts listed on [their website](#)

## INTEGRATED PEST MANAGEMENT

Integrated Pest Management (IPM) seeks to manage pests by employing the most cost effective approach to reduce the economic injury caused by the presence of pests. In these systems, some level of pests is acceptable if they don't do more damage than the cost of pest control.

The Environment Protection Agency in the United States issued the following statement regarding integrated pest management:

*IPM coordinates the use of pest biology environmental information, and available technology to prevent unacceptable levels of pest damage by the most economical means, while doing the least risk to people property, resources and the environment.*

It is important to remember that IPM is an integrated approach to pest management. True IPM systems will explore and employ alternatives to chemical control. Any system that considers only chemical treatment and its associated risks is not truly an integrated pest management system.

Pest monitoring plays a key role in the decisions of whether or not to employ a pest management action in IPM. The [Ontario Ministry of Agricultural and Rural Affairs](#) provides an [online educational tool for IPM in Ontario crops](#) and a ['How to Scout' guide](#) on monitoring pest levels. They also offer the [Identification Guide for Major Diseases of Grapes](#), which offers suggestions for scouting your grapes for many of these diseases.

As part of an integrated approach to managing pests, common alternatives to pesticides include:

### **Biological control agents**

Employing natural predators will help to manage the level of pests on site. Approaches to using these natural predators may include introducing a new species on site or providing favorable conditions for existing native species on site.

### **Cultural practices**

Diversifying your crops, utilizing crop rotation, and undertaking conservation practices, such as habitat strips, will reduce the susceptibility of crops to disease and increase [biodiversity](#). This increase in biodiversity will increase the population of natural predators and reduce the number of ecological niches available for pests.

### **Microbial control agents**

Microbial control agents are often referred to as bio-pesticides. They are applied in a similar manner to chemical pesticides but employ various types of bacteria and viruses to control pests on site.

### **Host plant resistance**

Many plants display a natural resistance to pests which may be bred into the desired crop. Also, many crops have been genetically engineered to include specific characteristics that increase pest resistance. The use of genetically modified crops, however, has raised much [controversy](#).

### **Pheromones**

Sex pheromones are often employed in a pest management strategy to disrupt the reproductive cycles of specific pest species.

### **Physical means**

Often pests can be managed through simple mechanical controls such as hand-picking, netting for avian pests, erecting insect traps, and other strategies.

These activities all vary in their level of sustainability. Efforts such as habitat strips and pheromones don't raise the questions that employing genetically modified crops do. Ultimately, the actual practices you chose for your IPM system will define how sustainable that system is.



### ECO-FRIENDLY FARMING

At Featherstone Estate Winery, they have a direct connection to their land. They believe they are stewards of their property and have been engaging in environmentally sustainable practices since 1999.

They employ cover crops between their vines which manage soil erosion, reduce weeds and add nutrients back into their soils. They are also insecticide free. They use diatomaceous earth, predatory insects (ladybugs), predatory birds and pheromones to help manage pests on site.

They have also begun using a Recycle Sprayer that collects and re-uses the excess solution they use for the management of mold and mildew.

*Featherstone Estate Winery's actions extend beyond the practices mentioned in this article. For more information on the practices employed please visit their website at: [www.featherstonewinery.ca](http://www.featherstonewinery.ca)*



### ORGANICS

Consumers are increasingly pushing for products that take their own health and the health of the environment into consideration. Shifting to organic practices and certifying your winery as organic will verify your commitment to high quality wine while differentiating your wines as a more natural and environmentally responsible option.

Organic agriculture seeks to protect human health and the environment by eliminating the following substances according to the [Organics Products Regulation](#):

- Genetically modified products
- Synthetic pesticides
- Fertilizer and composted plant materials with materials prohibited by the regulation
- Sewage sludge as a soil amendment
- Synthetic growth regulators
- Synthetic veterinary drugs
- Synthetic processing substances, aids, ingredients, food additives and processing aids
- Ionizing radiation
- Storage with fungicides
- Cloned products
- Nano-tech products or processes

The legal requirements for organics certification in Canada are outlined under the [Organics Products Regulation](#) of the [Canada Agricultural Practices Act](#). The Canadian Food Inspection Agency (CFIA) is responsible for the monitoring and enforcement of this regulation. They also accredit Certification Bodies based on the recommendations of a CFIA designated Conformity Verification Bodies.

According to the regulation anyone who wishes to apply for certification for an agricultural product must apply to a [Certification Body](#) within 12 months before the product is expected to be marketed. Only products that contain 95% organic material may use a voluntary organics logo. The application for certification should include:

- The name of the agricultural product
- Statement of composition and organic content (for multi-ingredient products)
- Statement naming substances used in production and their manner of use
- Report outlining their the methods used in production and processing and controls to prevent contamination (Outlined in the [Organics Production System](#))

Please contact one of the following certification bodies in Ontario before you begin your transition to organic production.

### *Organic Certification Bodies in Ontario*

Name	Telephone	Electronic
<b>Certification Services Limited Liability Company</b>	(813)423-2263	<a href="mailto:ccof@ccof.org">ccof@ccof.org</a>
<b>Centre for Systems Integration</b>	(613)236-6451	<a href="mailto:jmccullagh@csi-ics.com">jmccullagh@csi-ics.com</a>
<b>Ecocert Canada</b>	(519)820-0826	<a href="mailto:simon.jacques@ecocert.com">simon.jacques@ecocert.com</a>
<b>Global Organic Alliance</b>	(937)-593-1232	<a href="http://www.goa-online.org">www.goa-online.org</a>
<b>Organic Crop Improvement Association</b>	(204)567-3745	<a href="mailto:info@ocia.org">info@ocia.org</a>
<b>Quality Assurance International Incorporated</b>	(858)-792-3531	<a href="mailto:kasey@qai-inc.com">kasey@qai-inc.com</a>
<b>Professional Organic Certification</b>	(705)-374-5602	<a href="mailto:Infoebo@pro-cert.org">Infoebo@pro-cert.org</a>





## SOUTHBROOK VINEYARDS

### WINEMAKING AT SOUTHBROOK

Southbrook uses biodynamic and organic practices to steward their land while fulfilling their desire to produce high quality wines that are distinctive and express their terroir. Misconceptions exist around the cost of production, however Southbrook has found that production costs compare on a per acre basis to those using conventional practices. Added manual labour in their operations is offset by the absence of expensive synthetic pesticides from their costs.

Instead, biodynamic treatments and compost are used to improve their soil and promote life by enhancing complex microbial systems. They also use pheromones, herbal teas, increased bio-diversity (to promote a predator/prey balance) and mechanical sorting to enhance quality and manage pests.

Southbrook's experience demonstrates that becoming stewards of your land and making distinct high quality wines is a real option for the future of the viticulture in the Niagara region.

### BIODYNAMICS

Winemaking is a blending of art and science that expresses the creativity of the winemaker and the character of their land. Winemakers work with conditions that can be highly variable to craft a high quality and consistent product. This complexity lends winemaking to a more holistic approach.

Biodynamic agriculture recognizes the complexity present in all natural systems. It views the entire farm as an 'organism' which has its own natural cycles and is strongly influenced by earthly, cosmic and lunar rhythms. Vine health, through improved soil health and activity, is increased through a series of treatments, known as preparations, and timing the vineyards activities according to the biodynamic calendar.

Biodynamic winemaking can lead to wines that are more authentic and distinctive tying the quality of wine more closely to the land. Plus, it is a more responsible approach to winemaking, truly viewing winemakers and grape growers as stewards of their land.

For more information on Biodynamic Agriculture please visit [The Society of Biodynamic Farming and Agriculture in Ontario](#). Biodynamic certification can be obtained through [Demeter-International](#).

### STAY TUNED FOR THE NEXT SUSTAINABILITY COMMITTEE NEWSLETTER ON AIR QUALITY