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# Breaking Ground

(in Northeastern Ontario)

**FALL 10**

A Publication of the North Eastern Ontario Soil & Crop Improvement Association (NEOSCIA)

## Summer in West Nipissing

by Janet Parsons, NEOSCIA President



West Nipissing Soil and Crop Improvement Association summer tour focused on hay systems. Gilles Renaud demonstrated his Agway Hay Handling System for small square bales and the new steel hay shed which was just completed this summer. He built an open front shed with an extended overhang so it would be easier to stack the hay. He can store 5500 bales in the 40x 96 shed. Bales are piled on pallets over plastic otherwise the bottom bale wicks moisture and is wasted. He and his wife Gabrielle have baled and stored up to 1800 bales in a day. The handling system collects 12 bales behind the baler and then drops them mechanically. The bales are stored on their flat side. Gilles likes the simplicity of the system and the fact he can not only bale and store but also load an 8 foot trailer without touching a bale by hand.

The next stop was at Rheal and Alain Brouillette. They use a self propelled New Holland Automatic Bale Wagon. The bales are dropped on the ground behind the baler and picked up one by one by the bale wagon and stacked in loads of 160 bales. Bales are stacked on edge. The Brouillettes can handle 1800

to 2000 in a day and use a forklift to stack the bales in the barn and for loading their trucks for delivery. They can store 12000 bales in their open front hay barn which is 60x80x21 feet.

Both Renaud and Brouillette emphasize the importance of making the bales 32-34 inches long to fit on the trucks. Average weight is 45 pounds. Since hay for horses is the primary market, the forage mixture is primarily grasses (timothy, fescue and brome) with some alfalfa. Both agree that green and dust free hay are key factors in the horse market and Gilles warns that "the small square bales cannot be left out overnight...regardless of the system used, if you want that quality." Protein levels are not important. Most horses don't work hard so low protein hay is sufficient and desirable. Both Renaud and Brouillette use propionic acid as a preservative. While Renaud uses it occasionally since some buyers don't want it, Brouillettes have decided to use it on all their hay as a way of reducing risk of damage.



The Brouillettes also demonstrated their macerator which speeds up drying making it possible to bale a day earlier.

*Continued on page 02*

### NOTE: **Sponsors/Advertisers needed for coming year. \$500 for 4 issues!**

This newsletter is published 4 times per year. Articles can be submitted in either English or French and should be submitted to the Communication Coordinator (see below). Please supply translation, if available.

Material in this newsletter is based upon factual information believed to be accurate. Action taken as a result of this information is solely the responsibility of the user. We reserve the right to edit articles.

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gamblesgraham@yahoo.ca

## Summer in West Nipissing

Continued from page 01

The last stop was the New Liskeard Research Station test plots in Verner. John Rowsell outlined the various crop plots and discussed biomass. When asked what the best biomass crop would be for the Verner area he suggested winter wheat or reed canary grass.



Many farmers are running on farm trials. Steven Roberge is hosting the canola BMP provincial project with Brian Hall and a satellite imaging project with Nipissing University. James Parsons is running an on farm project comparing 'haylage in a day' (cut at 6 a.m., raked at 10 and baled in the afternoon) and late in the day cutting (cut after 3 p.m. and baled the next day) to see if there is an apparent difference in palatability.



Finally, a new crop is being planted this fall with a harvest date starting in the new year. There are more than 20 participants in a community solar panel project. May the sun shine bright!

# NEOSCIA Updates

Mack Emiry, NEOSCIA Regional Director

As you read this the first day of fall will be fast approaching if it has not already arrived! We have experienced one of the earliest, and probably warmest spring and summer seasons in North Eastern Ontario for many years. While this is a huge area all reports have been consistently positive for crop yields. Cereal grains and Canola harvests have been exceptionally early in most areas with soybeans and corn soon to follow.

Since the last issue of Breaking Ground NEOSCIA has been busy, having organized a most successful Crop Caravan (weed tour) from June 14 to 18. During this week OMAFRA Weed Specialist, Mike Cowbrough made a stop in all 8 districts. Many of you took this opportunity to meet and discuss weed and crop challenges with him and your fellow farmers. We are looking for ideas for a similar event in 2011. Give us your suggestions for a topic which you would like to see addressed.

NEOSCIA held a summer Director's meeting on Aug.5 in Sudbury. This was followed the next day by a crop tour in the "Valley" area, north of the city of Sudbury. Over 50 people joined Sudbury District Soil & Crop Improvement Association on a tour of a site on Xstrata Nickel where energy crops (corn, canola and switchgrass) are being grown on mine tailings areas which have been covered with paper mill sludge or composted yard wastes. We also saw a comparable plot on agricultural land. Other tour stops were at a market garden, berry and potato farm and a large potato production and processing/packing operation. Many ended the day with a barbeque at Market Square in downtown Sudbury.

We have also moved forward on the NEOSCIA Research Forum initiative, having established it as a committee of NEOSCIA. We invite your ideas for crop research projects which this committee can promote and attempt to move forward. Please send ideas directly to myself or through your local Soil & Crop Association.

The annual meeting season will soon be approaching with all district associations holding them sometime between November and January. Check for your local dates and plan to be involved. I plan to attend all district annual meetings and will take that opportunity to report on happenings at the provincial level as well as across North Eastern Ontario.



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## Solar Microfits in Northern Ontario

On September 24<sup>th</sup>, in conjunction with the FIT Program, the Ontario Government announced the MicroFIT Program ("MicroFIT"), a streamlined, user friendly version of the FIT Program for individuals, small businesses, and communities. A community can be a not for profit corporation, a co-op, an institution such as a church or school, or simply a group of individuals. MicroFIT is for small renewable generation, up to 10 kw in size. To be eligible for a MicroFIT Contract, the generator must be renewable, have its own meter, be capable of being connected to a local distribution grid (in other words, not "off-grid"), and have a "nameplate" (manufacturer's total installed rated capacity) capacity of 10 kw or less. In addition, it must not have an existing OPA Contract (although this may change). It can be an addition to an existing renewable generator by the same owner with same technology, using the same connection point and metering, provided the combined facility is under the 10 kw ceiling. The OPA will pay the 80.2 cents per kilowatt hour for power from small scale solar photovoltaic generation, and 13.5 cents for power from wind machines, for a contract period of 20 years.

We use Retscreen a computer based software created by the Canadian Federal government. Using the software and using the weather data collected from the Earlton Airport, it shows a ten-kilowatt rooftop PV system in Temiskaming would generate 16,952 kilowatt-hours per year. At 80.2 cents per kilowatt-hour, that works out to \$12,760.00 a year a cost of \$75,000.00 or more.

A 10 KW tracked pole mounted systems are approximately \$90,000.00 to \$100,000 + and can generate up to \$18,000.00 per year in revenue.

It is easy to see that the tracked system can be more cost effective. The extra cost of the tracker will pay for itself in about 2 years.

Much attention has been placed on roof top mounting mostly because of the high cost of land and scarce unshaded locations in Southern Ontario, particularly in the GTA area. Roofs are the logical choice because most often there is no shading and it is unused space. There are drawbacks to this however. First expensive engineering has to be done to ensure the roof can support the extra weight and in some cases the extra snow load because of drifting. This could prove not an option for some

and others may face additional structural reinforcement. Other considerations are the age and condition of the roof. Will it need repair in 10 years? If so the system will need to be removed at that time and then reinstalled after repairs are made. Snow removal to ensure the panels are not covered with snow. This can be difficult and could expose some risk to injury due to falls on a slippery roof. Roofs may not be pointing in the right direction or mat have shading problems. Pole mounts can have more flexibility with this.

We are fortunate here in Northern Ontario as land is relatively inexpensive and most locations have land to spare for a ground mounted system. If not adjacent land can be purchased cheaper than the engineering costs of investigating roof mounting. The pole mounted tracked systems already are engineered for mounting in the ground so no additional cost is required for engineering study except perhaps a soil analysis.

### *Are we too far north?*

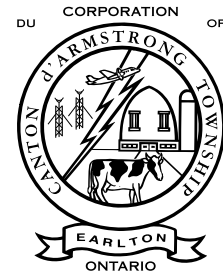
Actually the north is better. By changing the locations of this system around the province using Retscreen software we can see the opposite is true by showing yearly production.

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- Kingston \$14,899.00

Comparison of a fixed roof mounted system and a tracked system in the background. The snow fell in this picture 2 days before. (Picture provided by Powerhouse Solar)



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# Garlic Mustard – A New Threat to Algoma

by Sharon Lane



Errol Caldwell from Algoma University's Invasive Species Research Institute gave a brief talk on garlic mustard (*Alliaria petiolata*) that has recently been identified on St. Joseph's Island and Sault Ste. Marie. He had information packages available with pictures so that farmers could identify this most re-

cent invasive plant to our area.

## Danger

Garlic mustard is viewed as a threat to our woodlands especially the sugar maple and the hardwood forests. It releases a chemical believed to stop germination of trees, forest floor plants and wildflowers. It is

toxic to butterflies and is a threat to the Wood Poppy and Wood Aster.

## Origins

It is thought to have arrived in North America from Europe circa 1868 to Long Island, New York for use as an herb and medicine. Today, it can be found in the Eastern United States, as far south as Alabama, and to Washington and Oregon in the West. It is now in the Eastern and Central Canada.

## Appearance

It has a two-year life cycle. In its first year, the seeds germinate in April, and it grows 3 to 8 kidney shaped leaves with scalloped edges at ground level. These leaves have a wrinkled appearance and remain green all winter. In the second year, a small (1/4 inch) white, four-petal flower appears on the main stem and side branches from April to June. The flower stalk can be anywhere from one inch to four. The leaves are now heart-shaped to triangular, 1 to 3 inches wide and have coarsely toothed edges. These leaves have a garlic odour when crushed. The

*Continued on page 05*

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# Breaking Ground (in Northeastern Ontario)

## Garlic Mustard – A New Threat to Algoma

Continued from page 04

seeds are in capsules and appear soon after the plant has flowered. The seeds are small, produced in a row and are black when ripe. Each flower often produces more than a 100 seeds.

### Control Methods

Control methods must be applied for more than 8 years. The area of growth should be marked to help with the annual spring monitoring.

#### Hand Pulling

- If this is the method of control, then it must be done before budding and the pulled plant should be dried off the ground. If flowering when pulled, the pulled plant must be bagged because seeds will ripen even if uprooted. Paper bagged plants may be burned. Plastic bagged plants should be buried in landfill.

#### Cutting

- Cut close to the soil just after flower stalks have elongated and before flowers have opened. It may require a second cutting for new flowers and stalks.

#### Herbicides

- If patch is too large for manual methods of eradication,

use 1% or 2% solution of glyphosate. Apply it to the foliage in the fall and/or very early in the spring while other plants are dormant. Since glyphosate will kill all green plants, use caution in application.

#### Weed Torch

- This can be used in wet conditions. "Flame" with a propane torch if the patch of garlic mustard is small and there is no danger of damage to other plants.

#### Biological Control

- At the moment, there is none, but research is ongoing.

### Prevention

1. Clean shoes, pockets, pant cuffs, all terrain vehicles and equipment after being in the forest. Brush pets before leaving forest.
2. Look over property regularly for garlic mustard plants.
3. Remove plants that are producing seed first, working from the least infested area to the most. Then remove other plants from the least to the most infected.



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# OSCIA News...

September 2010

A NEWSLETTER TO UPDATE OSCIA MEMBERS,  
PRESIDENTS, SECRETARIES, TREASURERS, DIRECTORS,  
AND OMAFRA CROP TECHNOLOGY CONTACTS —

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### Ontario Soil and Crop Improvement Association

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Web site: <http://www.ontariosoilcrop.org>

## OSCIA 2011 ANNUAL MEETING

**Date:** February 8 & 9, 2011  
**Place:** Sheraton Fallsview  
Niagara Falls

### Message from the President

Greetings everyone. As I write this article, I have just returned from our 2010 Summer Directors' Meeting held this year in Belleville. We started our event with a tour and dinner at Kaiser Lake Farm, the home of our 1<sup>st</sup> Vice President, Max Kaiser, his wife Jessica, and their children Addie, Molly Beth, and Robbie.



*Barry Hill*

This showpiece 800-acre operation is operated by Max

and his dad Eric, and is south of Napanee. Thanks to Max, Jessica, and Eric. Everyone

who attended appreciated their hospitality and the interesting tours on Monday and Tuesday. My wife, Cheryle, and I had a chance this year to stay an extra couple of days in the area and enjoy an excellent boat tour of the Thousand Islands, and other interesting sights. We always learn something more about Ontario each year as we travel the province.

The meeting was productive as we moved forward in our efforts at the Board level in developing a path forward toward strengthening the local organizations and assisting in their programming. Speaking of local activities, as I review the regional newsletters and check out our website ([www.ontariosoilcrop.org](http://www.ontariosoilcrop.org)), I am thoroughly impressed with the summer events planned throughout Ontario. Let me offer my humble and hearty compliments to all volunteers involved across the province who contribute so much to the spirit and achievements of OSCIA. I have stated on many occasions that the strength of OSCIA is at the grassroots. You all deserve a hand for the contributions you make to the success and reputation of OSCIA.

In Belleville, we reviewed the research priorities that OSCIA makes known to our partners in program delivery. Oftentimes, it is difficult to cull such a list down to key issues, but I submit for your consideration that we should develop a short list of focus areas that we work on for a 3-to-5 year period, concurrent with an operating vision we would adopt for our operational guidance. The vision concept was discussed in some detail at our



# Breaking Ground (in Northeastern Ontario)

meeting and adopted for future implementation. A vision is adaptable to current events that may shape the manner in which we prioritize initiatives to implement OSCIA's strategic directions. It does not replace our widely publicized mission – *“To facilitate responsible economic management of soil, water, air and crops through development and communication of innovative farm practices.”*

What do I mean about focus areas? I propose that focus areas are collective concepts around which research could be grouped for better management and communication. Initially, three areas deserve attention: sustainability, water management, and financial viability.

Sustainability is becoming a concern across the industry and we need a policy statement and operating principles to support how we manage our farms. Water, it has been said, is as an issue, the next oil. In conversation with our 2010 Honourary President Don Lobb, I became convinced that managing water (too much, too little, in the wrong place, etc.) was perhaps the next big breakthrough in crop productivity. Soil organic matter, drainage and tillage are key components of this discussion. Finally, financial viability goes beyond the usual discussions of adequate revenue, but should include the farm financial impacts of environmental compliance, provision of environmental benefits to the populace, including wildlife impact and its effect on the financial bottom line.

These three focus areas can capture much of the research efforts we look for from our partner organizations, including both levels of government. Their main value may lie in communicating OSCIA's organizational priorities to an audience beyond our membership. Often in interviews I am asked these typical 'soundbite' questions, and research direction is often the topic of interest. A sharp focused response is needed – but I'm sure you have ideas too. I look forward to your feedback.

As the summer winds down, our thoughts will soon turn to winter wheat planting, plus corn and soybean harvest. Before then, we can relax at Canada's Outdoor Farm Show. Be sure to drop by the OSCIA tent and display area. There is always lots to see and learn, thanks to our OMAFRA Crop Specialists and our breakfast partner, Bayer CropScience. Perhaps we will meet there. Stay safe! ♦

## Nutrient Management Outreach Grant

Georgian Central Regional SCIA recently hosted a bus tour focusing on nutrient management efforts in Bruce County, funded by the NM Outreach Grant. Ray Robertson from Grey County and Jayne Dietrich from Bruce County, along with Bruce Kelly from the provincial office attended the interesting day. The tour, focused mainly in southern Bruce, included stops at the

Biesenthal and Gutscher farms near Walkerton where those producers talked about improved manure storage and practices on their operations.

Les Nichols and Brian Luinstra acted as tour guides for the day, giving the site visits a personal context. Other excellent stops included the farm of Gerald Grubb, where a soil pit had been dug for Keith Reid, Soil Fertility Specialist with OMAFRA, to explain the various levels of soil and the resulting interaction of the layers with the living biological function within each layer and the tillage style and degree of compaction.



The day proved to be very educational for the attending farmers who came away with ideas for their farms and information on how to improve and fund their approach to manure management.

*Keith Reid,  
OMAFRA Soil  
Fertility  
Specialist in the  
soil pit.*

## Seed Bytes

- Harold Rudy, Provincial Office

Check out why Certified Seed is so important. YouTube: <http://www.youtube.com/watch?v=zYcre2v65fE>.

Colleges and universities now have access to training modules for 'SEED GROWING AND CERTIFICATION FOR SUSTAINABLE AGRICULTURAL SYSTEMS'. In partnership with Dr. Caldwell's firm - Field to Fork AgriSystems Consulting - the Canadian Seed Growers' Association has developed a '2-Day Seed School'.

This short course is, as the name implies, two days in length, and customized to the needs of the company/group requesting the training. The course is unique and interactive for industry professionals, combining lecture material with hands-on lab-type exercises, group exercises and open debate on seed industry issues.

Anyone interested in university adoption of the instruction modules, utilizing introductory sections in local high schools, or having the 2-Day Seed School at their business should contact Caroline Lafontaine, CSGA Member Services Coordinator at 613-236-0497 or [lafontaine@seedgrowers.ca](mailto:lafontaine@seedgrowers.ca). ♦

## OSCIA Seed and Feed Fairs



Thanks to the sponsorship of the Ontario Seed Growers' Association, ten successful Seed and Feed Fairs took place, many of them early in 2010.

The photo was taken at the Leeds County Seed & Forage Competition held March 3<sup>rd</sup> at the Lions Club Hall in Elgin. First,

second, and third prizes were awarded for 25 categories. Gary Gordon gave a short presentation on 'Growing Quality Hay' prior to the announcement of the winners.

A full report of all ten seed and feed fairs, along with photos and agendas was provided to the OSGA this past summer. Their Board of Directors was duly impressed with the quality of the fairs hosted by local Soil and Crop Improvement Associations across the province.

We are pleased to announce that the OSGA has agreed to sponsor the Seed and Feed Fair Grant for the 2010/2011 winter season. Details will be sent to local associations this fall. ♦

## What's New in Business Development for Farm Businesses

We have experienced significant growth in the second year of the program and are approaching 50% allocation of available cost-share funds. Producers are encouraged to apply under Year 2 for any projects that can be completed by January 15, 2011.

Program Year 3 project applications will be available September 15, 2010. We are excited to announce program enhancements for Year 3.

**More opportunities for new farmers** – improved cost-share opportunities to help new farmers set their business goals, improve their farm-related skills and develop actionable business plans.

**Support for leadership and governance skills** – with the increasing complexity of modern farm businesses, these are the management skills that producers need to grow more profitably.

**More Advanced Business Plans** – up to \$20,000 in additional cost-share funding to support the development of up to three business plans for a farm business.

The Business Development for Farm Businesses program helps producers improve their business planning. By combining self-assessment and action plan development with a range of cost-share advisory services and skills development opportunities, this program can help producers reach their farm business goals.

For more information please contact your local GYFP workshop leader or call 1-800-265-9751. ♦

## First Year of Field-scale Biomass Project in Full Swing

*-Nick Betts, OSCIA Outreach Coordinator*

Research contributing to field-scale, feasibility of purpose-grown energy crops for biomass fuel production across Ontario is underway after a delayed start this spring. 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.

The project will run until 2013 and provide farmers with agronomic information on the benefits and challenges of growing various biofuel crops, like miscanthus, switchgrass, and native prairie grasses.

Initial guidelines set out by the OMAFRA-Ontario Power Generation (OPG) joint-chaired steering committee stressed a focus on field sites in southwestern Ontario.

Due to a late start, the application process for year-one was extremely rushed, limiting the applications for this first intake of proposals. Nonetheless, ten excellent cooperators submitted successful bids, providing 297 acres of purpose-grown energy crops for the project.

A second, more timely application process will take place this fall for projects running 2011 to October 2013. Researchers hope to include another 600 acres of various biocrops by November of this year to start the project in March, 2011.

While OPG is expected to be a large market for the product, current markets exist in the form of residential heat, greenhouse boiler fuel, and animal bedding.

Geographic areas of focus, as well as locations for fall information meetings and important dates, will be posted to the OSCIA website as soon as possible. Please check often for website updates.

([www.ontariosoilcrop.org/biomass.htm](http://www.ontariosoilcrop.org/biomass.htm)) ♦



# Breaking Ground (in Northeastern Ontario)

## 2010 Ontario Forage Masters Program

The 2010 Ontario Forage Masters Program has been very successful, with over 190 participants from 23 local SCIA's entered. Of these, 16 were 4-H participants.

We'd like to take this opportunity to thank the generous sponsors of this program, now in its 23<sup>rd</sup> consecutive year:



At the time of this writing, the results for all but one area have been calculated and distributed to the contact persons for each local SCIA. Personal invitations from OSCIA President Barry Hill to enter the provincial competition have been extended in writing to the first-place winners in each county/district.

The provincial competition involves submission of an essay/report, or MS PowerPoint presentation for review

by the judging panel. A maximum of six of these entries will be selected and those six entrants will be invited to present their report in person in Guelph in November.

Following the presentation in Guelph, all entrants will travel to Toronto to enjoy the horse show at the Royal Agricultural Winter Fair, followed by an overnight stay. The following day, they will attend the Royal and the Awards Luncheon where the 2010 Ontario Forage Master will be announced and introduced.

The 2010 Ontario Forage Master will be asked to participate in the American Forage Spokesperson Competition in June 2011, in Indiana USA.

Participants from this and years past have indicated that this is a very worthwhile program with valuable prizes and opportunities. They encourage other OSCIA members to become involved.

The results to date for the 2010 program are shown in the chart below. ♦

Local Association	1 <sup>st</sup> Place	2 <sup>nd</sup> Place	3 <sup>rd</sup> Place
BRANT	Albert Vandenberg	Martin Eggenschwiler	Larry Davis
CARLETON	W. Gillan Farms Ltd	Thom Mueller	Carl Fraser & Sons Ltd
DUNDAS	Tibben Farms Inc	Brugline Farms	Ron Toonders
FRONTENAC	Gary Gordon	Henry Posthumus	Charlie Cumpson
GLENGARRY	Tom McDonald	Stewart Irvine	Tony Nussbaumer
GRENVILLE	Matt Maitland	Russell Bennett	David/Allan Hess
GREY	Larry Parkin	Gord Strutt	Brad Torrie
HALTON	Don Rowntree	Jay Kitching	Adam Parker
LANARK	Jockbrae Farms	Taylea Farms	Nandale Farms
LEEDS	Brian Smith	Alex Oosterhof	Tony Gunnewick
NIPISSING W / E SUDBURY	Clement Rainville	Steven Roberge	France Beaudry
NORTHUMBERLAND	Dorland Farms	Combview Farms Ltd	Joshua Kapteyn
OXFORD	Veldale Farms	B & J Droogers	Clarence Markus
PEEL	Tim Armstrong	Dwight Matson	Castledale Farm
PERTH	Paul Gras	Doug Johnston	Ralph DeWitt
PETERBOROUGH	Steven Stockdale (4-H)	Francis Crowley	Ashley Buck (4-H)
RENFREW	Shannon Russel (4-H)	Kayla Doering (4-H)	Rachel Enright (4-H)
RUSSELL	Louis Raymond	Gilles Guindon	Raymond Regimbald
SIMCOE NORTH	Matt Hutchinson	Harold Jelinsky	Brian Wood (4-H)
STORMONT	Sandylane Farms Inc	Bernard Grady	Murray Dunbar
THUNDER BAY			
VICTORIA	Brad Hawman	Thursthill Farms	Scott Tamlin
WELLINGTON	Brad Martin	Ashley Harrop	Jeff Krul



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### Brought to You by the Following OMAFRA Crop Specialists

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Hugh Martin, Organic Crop Production Program Lead

Horst Bohner, Soybean Specialist

Ian McDonald, Applied Research Co-ordinator

Albert Tenuta, Field Crop Pathologist

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## Forages Need Fertilizer Too!

Keith Reid, Soil Fertility Specialist, OMAFRA

Too often, forages are the forgotten crops in the rotation. They pretty much get left to fend for themselves, while the annual crops receive the bulk of the attention. This is a serious mistake for anyone who depends on forages to feed their livestock or to sell as a cash crop. Profitable, high yielding and high quality forage crops only happen with a high level of management, which includes paying close attention to the nutrient requirements of the crop. This provides an immediate return in forage yield, and also maintains nutrient levels in the soil for the next crops in the rotation.

Forage crops with a high legume content will produce their own nitrogen, but they cannot generate phosphorus or potash out of thin air. Alfalfa has a reputation for needing a lot of potassium, but Figure 1 shows that yield responses to phosphorus can be very large in low P soils. An extra 5 tonnes per hectare (2 tons per acre) of forage is like getting an extra cut without having to make the extra trip over the field.

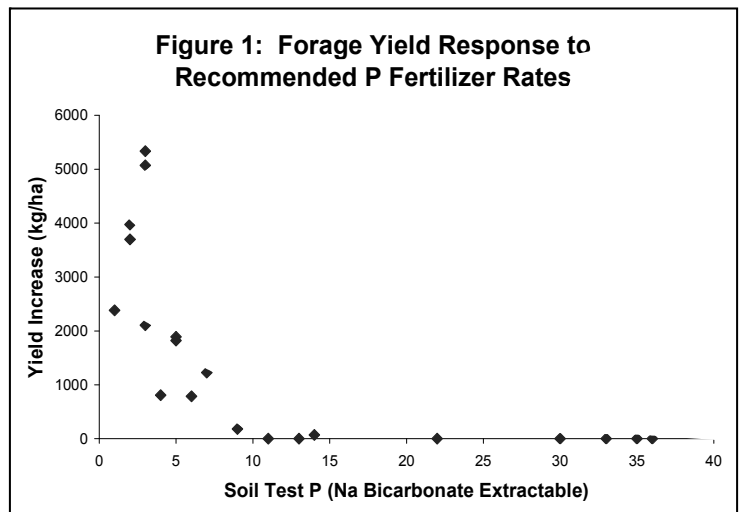
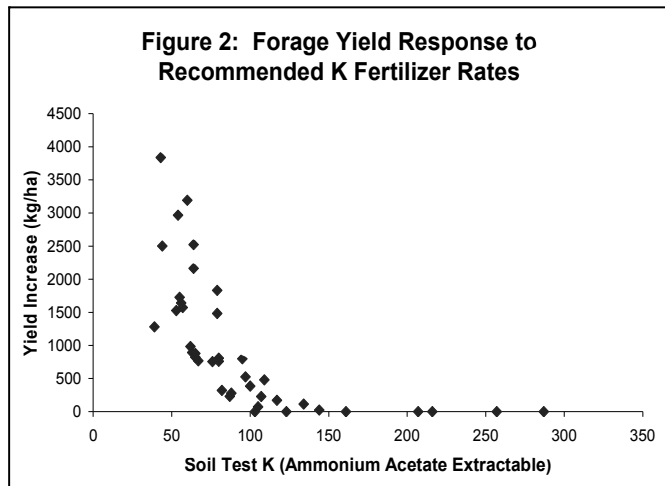


Figure 2 shows the response of alfalfa to potassium fertilizer applications, and there are also significant yield increases. We notice these yield responses more often with K because there are more fields with low soil test K than low soil test P – at least, low enough to show the big responses.



Note for both, however, that there is no extra yield from applying fertilizer once the soil test has been built up to high levels. You can justify fertilizer applications to replace the nutrients removed by the crop, to prevent future nutrient deficiencies, but don't expect extra yield from that maintenance application.

## Ohhh K! Potash Considerations For Corn This Fall and Next Spring

*Greg Stewart, Corn Specialist, OMAFRA & Ken Janovicek, University of Guelph*

Your 60 bushel bean crop this year may have removed 84 lbs per acre of potash ( $K_2O$ ) from the soil (1.4 lb/bu). If you grew 40 bushel beans on the same field last year, that would add another 56 lbs of potash removed per acre. Now, in terms of soil test potassium (K) values, that combined 140 lbs of removal can cause a downward movement to the tune of 8 ppm over the two years. (Significantly more on sandy ground and perhaps less on clay.) If your K soil test was already at 138 ppm, this probably means very little to you. However, if your soil test level three years ago was 90 ppm and is now 78 - read on!

Yes, potassium, the Rodney Dangerfield of nutrients (no respect), may be at play more than you might expect, depending on where your K soil test levels have fallen to over the past decade. There are some obvious reasons why we might expect K soil test values to have slipped, including the high price for potash in the recent past.

## Research Trials

As usual we didn't set out to study potassium, as we were more interested in N and P effects. However, as we looked for responsive sites that had lower P soil test levels, we naturally found some fields that were relatively low for K as well.

Some of the research trial results are illustrated in Table 1 - Impact Of Starter Fertilizers On Corn Yields. The conclusions are not overly complicated or surprising. When soil test levels for K were down in the 60-80 ppm range, starter fertilizers with some K generally outperformed starters without K. This was evident at the Elora sites, even though we tried to address the low K levels by broadcasting 200 lbs/ac of 0-0-60. In some cases, you could go as far to say that the starter N and P investment was wasted if you didn't deal with the low K values.

## So What?

To start with, if you do not have any fields under 121 ppm soil test K, the implications are obviously different. Potassium does behave differently than N or P. Research has generally supported the idea that even when soil test levels are high, corn yields can be boosted with a relatively small amount of N and P placed close to the seed (i.e. in furrow or 2x2). K does not generally behave this way, so this article should not make you go out and include K in your starter if soil test K levels are already high.

If you have K soil tests in the 120 to 80 ppm range, the OMAFRA recommendations are to apply 30 to 50 kg/ha  $K_2O$  respectively. You probably need to pay attention to these fields so that soil test levels do not slip further. However, these results do not deal with the question of starter versus broadcast K for soil tests in this range. The best recommendation is to apply the potash in the most cost effective manner for your farming operation.

If you have K soil test levels down in the 60-80 ppm range, the OMAFRA recommendation is to apply 80 kg/ha  $K_2O$  (117 lbs/ac of 0-0-60). These results suggest that this potassium application may be quite critical to corn yield. In some of your lowest testing soils, K in the starter next spring may add to yields even when a broadcast application of K is performed this fall.

Two final comments! Please don't expect yield responses as dramatic as some of those reported here. We may never duplicate them in the 30 years of plot work we've got left in us. Secondly, if you are not sure what your soil test levels are for P and K, make that job a priority this fall!

## Acknowledgements

This research was made possible through the support of the Grain Farmers of Ontario, Innovative Farmers Association of Ontario, the Ontario Research and Development Program, OMAFRA and the University of Guelph.



**Table 1.** The impact of starter fertilizers on corn yields in 2008 and 2009

Site	Elora 2008	Elora 2009	Alma 2009	Bornholm 2009
<b>Soil Test Values (ppm)</b>	P:11 K:61	P:8 K:68	P:35 K:77	P:18 K: 80
<b>Starter Fertilizer Treatments</b>	<b>Corn Yields (bu/ac)</b>			
Control (no starter)	188	168	179	125
10-34-0 @ 5 gal/ac (in furrow)	195	169	180	116
11-52-0 @ 75 lb/ac (2x2)	198	165	180	114
11-52-0 @ 75 lb/ac + UAN @ 10 gal/ac (2x2)	199	163	171	114
6-24-6 @ 5.0 gal/ac (in furrow)	204	177	181	128
5-20-20 @ 200 lb/ac (2x2)	220	184	183	150

Note: At both Elora 2008 and Elora 2009, 200 lbs/acre of 0-0-60 was broadcast in addition to starter treatments.

## Another Record Wheat Crop?

*Peter Johnson, Cereal Specialist, OMAFRA*

INCREDIBLE! With excellent wheat prices and an early soybean harvest already getting underway, wheat plantings appear ready to challenge the previous record of 1.2 million acres. Seed supplies look tight on some of the hot new varieties, with a few production issues making seed supplies even tighter. Variety selection is one of the cornerstones of big yield, so be sure to visit the Winter Wheat Performance Trials at [www.qocereals.ca](http://www.qocereals.ca).

There are lots of exciting new varieties. As well as the yield tables, be sure to also look at the trait tables, with particular attention to Fusarium ratings and lodging scores.

### Soft Red Varieties

25R47 continues to be the variety to beat in the main production region, but a look at the trials will show that Emmet is the star performer as you move deep into Area II. Both of these varieties are proven performers, and need no further discussion.

The range of yields within the trials is closing nicely, with many varieties now challenging these old standards. 25R39 looks to have the edge in yield potential, but standability is a concern, with grower reports of “tough to combine”, and a very tight seed supply. There is a big group of varieties after that, with Branson, R045, CM614, 25R56 and HY116-SRW all having a fit somewhere. Any of these varieties would be worth a trial run in your test plot, or test acreage on your farm.

### Soft White Varieties

Ava continues to dominate. High yield, coupled with a MR (moderately resistant) fusarium rating make it tough competition. However, Ava does have lodging concerns, so watch nitrogen rates. There are other soft whites to consider, but often high yield matches HS (highly susceptible) fusarium ratings, a trade off I don't like.

### Hard Red Varieties

Wentworth is the yield leader, but again couples with a HS fusarium rating. That makes Princeton a top option, tying together fair yield with decent fusarium (MS moderately susceptible) and reasonable standability. AC Morley and Keldin are other options.

### Which Class To Grow?

Many growers are taking notice of pricing premiums to soft white or hard red classes. Consider the following in your profit calculations:

- ♦ Soft white wheat yield is equal to soft red, but has sprouting potential. Look closely at the premium offered. Does it cover increased drying fees to allow early harvest to prevent sprouting? What happens if the wheat is downgraded because of sprouting?
- ♦ Hard red wheat yield is about 8% less than soft reds. Protein premiums, if offered, are often hard to achieve. Nitrogen rates should be a minimum of 120 lbs/acre. Seeding rates may need to be higher, because many of the varieties in this class are large seeded.

Whatever class you decide to grow, remember one caveat - no more soft white than you can combine in 2 days! Good luck, and plant LOTS OF WHEAT!!!!

## Less White Mould In Soybeans Than Expected

*Horst Bohner, Soybean Specialist, OMAFRA*  
*Albert Tenuta, Plant Pathologist, OMAFRA*

White mould is one of the most serious soybean diseases in Ontario. Heavy disease pressure causes significant yield loss. A wet growing season with lush crop growth usually increases the amount of disease. Fortunately, the level of disease in 2010 was less than feared, considering the amount of moisture and plant growth. In many fields the disease began to infect individual plants early in the flowering process, but for the most part did not spread further. (Photo 1 & 2) As a result, large infected areas were rare and subsequently yield losses were minimal.

# Breaking Ground (in Northeastern Ontario)

There are two primary reasons for this lack of expected infection in 2010:

## 1. Warm temperatures

White mould prefers wet conditions along with moderate temperatures (15-23°C). Despite the humid weather, the frequent daytime temperatures in the upper 20°C's and lower 30°C's during flowering reduced the infection risk, as well as the potential spread of the disease.

## 2. Earlier Flowering

Soybeans flowered earlier than usual and matured a week or two earlier. Field experience has shown that early-maturing soybeans are less prone to an epidemic compared to longer season soybeans.



Photo 1. Plant death due to *Sclerotinia sclerotiorum* (white mould)



Photo 2. White cottony mycelium caused by white mould

## Increased Risk of Future Infections?

The low level of disease this year does not mean that fields are free from future potential of major outbreaks. Sclerotia (the over-wintering bodies of white mould) are viable for many years, so fields with a history of white mould are at future risk. Environmental conditions are critical to the disease. Even small changes can have a big positive or negative impact, as witnessed in 2009 and 2010. Therefore, it is important to note fields with white mould and other diseases now in order to make good management decisions for future years.

## No Quick Fix

There is no quick fix for white mould. It's an extremely virulent disease. Foliar fungicides are not recommended to control white mould in soybeans. Unlike edible beans, soybeans flower over a long period of time. They would need to be sprayed two or even three times for season long protection. Also, soybeans have a relatively thick canopy, so spray penetration is difficult. Foliar fungicides have provided very inconsistent results in soybeans to date, but new products are under evaluation.

## Management Strategies

### 1. Crop Rotation

Most of the sclerotia in the top 2.5 cm (1 inch) of soil will germinate the year after they are deposited. The longer the field is not grown to susceptible crops, the less inoculum there will be. Corn and wheat do not get white mould. In fields with significant white mould pressure this year, serious consideration should be given to planting winter wheat this fall. Planting the wheat no-till will also leave more of the sclerotia on the surface so they can breakdown before another susceptible crop is grown. Edible beans, canola, and sunflowers can all get white mould and should not follow or be planted prior to soybeans.

### 2. Avoid Susceptible Varieties

Varieties differ in their susceptibility to white mould, although there are no resistant varieties. If the field has had white mould in the past few years, a highly susceptible variety should not be grown. Most varieties have a white mould rating, or ask your seed provider for this information.

### 3. Earlier Varieties

Planting early varieties can reduce the amount of disease. For fields with a severe history of white mould, plant varieties that are 200 – 300 CHU shorter than your area. Varieties that are less prone to lodging also tend to get less white mould.

### 4. Wider Row Widths

Planting to wider rows with lower plant populations will also minimize disease damage. Although wider rows and lower seeding rates will give up some yield in years when no white mould develops, this strategy can reduce white mould severity during wetter, cooler summers. Grow fields prone to mould with a minimum row width of 38 cm (15 inches) at 150,000 seeds/acre. Consider using 76 cm (30 inch) rows in fields with a history of white mould.

Seed should not be kept from heavily infected fields. This can spread the disease. With these strategies in mind, white mould can be kept in check and does not need to cause significant yield losses in future years.

## Silage Fermentation Problems

Joel Bagg, Forage Specialist, OMAFRA

When we make corn silage and haylage, we are using our skills as microbiologists, just like winemakers, brewers and composters. As a biological system, silage making doesn't always work perfectly. During an anaerobic silage fermentation, microorganisms feed on sugars and other soluble carbohydrates in the forage material and produce organic acids, such as lactate and acetate. This lowers the pH and creates an environment where the resulting silage is preserved. We sometimes have less success making silage, because of management, the weather and what we have to work with.

An efficient fermentation is desirable for 2 reasons:

- ♦ to preserve nutrients to optimize livestock intake and performance, and
- ♦ to minimize forage dry matter lost in the fermentation process and spoilage at feedout. Fermentation losses can be 12 - 15% with a good fermentation, and much higher with a poor one. Spoilage losses can be significant.

We know what we have to do to make good silage - cut at the right maturity and moisture, chop at the right length, use inoculants strategically, keep it anaerobic (without oxygen) by filling the silo quickly, adequate packing, covering and sealing it well and right away, face management, etc, etc. However, sometimes things don't go well and we end up with high fermentation losses, poor nutrient quality and palatability, and silage that wants to spoil easily. It can be useful to determine what went wrong and know how to avoid that the next time.

### Common Fermentation Problems

When we encounter problem silage, it is usually the result of incorrect moisture or the presence of oxygen. Odours can be good indicators. Here are a few problems that we might smell and what might have caused it.

#### 1. Rancid, Fishy Odour

This is butyric acid resulting from clostridia contamination from soil. Clostridia silage can result from cutting or raking too close to the ground, soil from packing tractor tires, "splash" from rain, or manure applied too late after the previous cutting. Butyric acid also commonly results from silage that is too wet (> 70% moisture). As well as its foul odour, this silage sometimes has a slimy, sticky texture. Haylage can clump into characteristic "butyric balls". Fermentation losses of non-structural carbohydrates are high, so ADF levels are high. Protein is degraded. Palatability, intake, and digestible energy are low, and livestock performance is poor. We saw lots of this in 2008, when we struggled to get haylage made between frequent rains.

#### 2. Mouldy With A Musty Odour

Mouldy silage results in high dry matter losses, as well as poor palatability and livestock performance. This spoilage is the result of aerobic (oxygen) conditions from poor packing, slow filling, low moistures, poor sealing, slow feedout, or poor face management. If the silage is still hot, microbial activity and spoilage is still underway.

#### 3. Vinegar Odour

Acetic acid is more commonly known as vinegar. Lactic acid is the most desirable product of fermentation because it is produced most efficiently, with the least dry matter losses. Too much acetic acid relative to lactic acid means the fermentation was less than optimally efficient, and possibly could have benefited from a commercial lactic acid bacteria (LAB) inoculant.

#### 4. Sweet Odour

This smell is likely high concentrations of ethanol produced by spoilage yeasts, mixed with acetic acid. Fermentation losses were likely high and this silage will be prone to heating and spoiling in the bunk. Desirable lactic acid has little smell.

#### 5. Ammonia Odour

This indicates excessive protein breakdown to ammonia and amines, which could be due to a clostridia fermentation or high pH.

#### 6. Carmelized Odour

This heat damaged haylage is dark in colour with a tobacco odour. In severe cases it can smell burnt, indicating excessive heating. Heat-damaged silage is the result of forage that is too dry. Protein becomes bound and is less digestible. ADF-N (unavailable nitrogen) can be measured in a laboratory.

### Fermentation Analysis

A newer technology available in silage problem-solving is fermentation analysis. It enables us to objectively quantify what we subjectively see and smell. This can be especially useful when poor livestock performance cannot be explained by nutrient analysis. Fermentation analysis is available in Ontario from Agri-Food Laboratories, and some U.S. labs. Typical fermentation end product concentrations are listed in Table 2.

#### 1. High pH

A high pH indicates a poor or restricted fermentation that will be less stable and result in poor bunk life and more spoilage at feeding. Legume haylage has a higher buffering capacity than grass haylage and corn silage, and quite often has a higher pH.

#### 2. Low Lactic Acid

Lactic acid should make up over 65-70% of the total silage acids, with a lactic/acetate acid ratio of at least 3:1. Lactic



acid is the most effective in lowering pH, and is what we are trying to improve by using a commercial LAB inoculant.

**Table 2 – Typical Levels of Silage Fermentation End-Products**

	Corn Silage	Legume Haylage >65% moisture	Legume Haylage <55% moisture	Grass Haylage
pH	3.7 – 4.2	4.3 – 4.5	4.7 – 5.0	4.3 – 4.7
lactic acid %	4 – 7	7 – 8	2 – 4	6 – 10
acetic acid %	1 – 3	2 – 3	0.5 – 2.0	1 – 3
propionic acid %	< 0.1	< 0.5	< 0.1	< 0.1
butyric acid %	0	< 0.5	0	0.5 – 1.0
ethanol %	1 – 3	0.5 – 1.0	0.5	0.5 – 1.0
ammonia-N (% of CP)	5 – 7	10 – 15	< 12	8 – 12

Source - Dr Limin Kung, University of Delaware

### 3. High Acetic Acid

Acetic acid levels greater than 3 – 4% can result from poor fermentations, especially if lactic acid levels are significantly low. Buchneri inoculants are sometimes added to corn silage and high moisture corn to produce acetic acid late in the fermentation to improve bunk life. Don't mistake this for a poor fermentation.

### 4. High Ethanol

High ethanol indicates yeast that reduces dry matter recovery and makes the silage more prone to mould and feedout spoilage. Off-flavours in milk can also sometimes result.

### 5. High Ammonia-N

This indicates excessive protein breakdown and possibly excess ruminally-degraded protein. Levels greater than 12 – 15% can be a problem for the dairy nutritionist.

### 6. Butyric Acid

This is the bad one! If it accompanied by high percent moisture and/or high ash content, then that confirms what management issue needs to be corrected. In the silo, butyric acid results in high losses of dry matter and digestible energy. In the ruminant it results in poor intakes and metabolic problems. If possible, silage high in butyric acid should be discarded. Dr Gary Oetzel, University of Wisconsin, recommends the following butyric acid daily limits to prevent off-feed and ketosis in dairy cows:

- ♦ fresh cows - < 50 grams
- ♦ early lactation - < 150 grams
- ♦ all other lactating cows - < 250 grams.

### Diagnostic Tools

Whatever the results of your fermentation analysis, the reality is that you're likely stuck with the silage you have for the year. But, using what you see and smell, combined with a fermentation analysis as a diagnostic tool can help in identifying what can be improved in your silage making in the years ahead.

For more information on silage making, refer to the OMAFRA Forage Website

[www.omafra.gov.on.ca/english/crops/field/forages.html#storage](http://www.omafra.gov.on.ca/english/crops/field/forages.html#storage).

## Budgeting and Measuring Pasture Production

*Jack Kyle, Grazing Specialist, OMAFRA*

Pasture is a feeding system. Like any feeding system it is important to know the needs of your livestock and the amount of feed you are offering. Think of your pasture field as a feed bunk. When feeding in a bunk or manger you offer your livestock the quantity of feed they need to get to the next feeding while maintaining feed quality at the highest possible level. Estimating the pounds of feed on a pasture may seem like a tall task, but it is important if you are going to achieve the potential of the pasture and livestock.

There are two steps to this process:

1. determine the nutritional needs of your livestock, and
2. determine how much forage is available for grazing each day.

### Step 1 – Determine Livestock Requirements

The nutritional needs of livestock are generally calculated in terms of dry matter (DM). Dry matter intake of 3% of body weight is frequently used for growing and producing livestock. A 1,200 lb cow requires 36 lbs of DM per day (1,200 × 0.03), and a 1,500 lb cow requires 45 lbs of DM per day (1,500 × 0.03). This may be slightly more than their actual needs, but it allows for some feed refusal. If we take the total weight of the herd multiplied by 3% we get the feed required per day on pasture.

### Step 2 – Determine Pasture Available

The second step is to determine how much grass or forage is available on a given area for the livestock to graze. This can be done by one of 3 methods:

#### 1. Grazing Stick

A grazing stick enables you to measure the height and density of the grass by how visible the stick is on the ground. Using a table of height and density printed on the stick, you can estimate the forage DM available.

## 2. Rising Plate Meter

An 18 inch square plexiglass plate 1/8<sup>th</sup> inch thick is used to slightly compress the grass to a constant density. The height of the compressed grass is measured and a chart is used to estimate the DM available per acre.

When calculating the amount of forage in the field, remember that you want to leave 3-4 inches of residue to re-grow and start the development of the grass for the next grazing cycle. Subtract this 3 or 4 inch height from the total height to get the usable height.

## 3. Sample & Weigh

A more accurate method is to harvest 2 or 3 square feet of grass, weigh the amount harvested and dry a representative sample to determine the amount of DM. (Note - 2 sq ft is 1'-5" × 1'-5".) You should sample several areas of the pasture to get a representative value. The sample can be dried in a microwave oven. Weigh a sample of approximately 100 grams and microwave for a couple of minutes. Re-weigh, microwave again for a minute and weigh again. Repeat this procedure until the weight does not change. Put a cup of water in the corner of the microwave to avoid damaging the microwave. Percent DM is determined by dividing the dry weight by the wet weight multiplied by 100.

For example, with a wet weight of 100 grams, and dry weight 20 grams, the DM will be 20% ( $20/100 \times 100$ ). If the weight from two square feet is 200 grams and the DM is 20%, then there is 20 grams of dry matter per square foot ( $200 \times 0.2 \div 2$ ). An acre (43,560 square feet) would have 871 kg of forage available for grazing ( $0.02 \text{ kg/square foot} \times 43,560 \text{ square feet}$ ). If we multiply this number by 2.2, the 871 kg is converted to 1,916 lbs.

## Calculating Head / Acre / Day

If the grass you measured indicated that there was 1,916 lbs of DM available for grazing, then this would support 63,873 lbs of animal per acre ( $1,916 \div 0.03$ ). For every 63,873 lbs of animal you need to offer one acre of pasture for each day that they are going to be in the pasture. Ideally this will be one day, and should not be more than 5 days because intake will drop. The best grass is eaten the first day, and by the fourth or fifth day the pasture is pretty well picked over. This is very important for stocker cattle where you are looking for good gains, because you want to have them eating the maximum amount of forage each day. Stocker cattle that are moved to fresh pasture every one or two days throughout the grazing season should gain 300 lbs in a 5 month grazing season.

Knowing how much forage and dry matter that you are offering to your pasture animals will allow you to get maximum performance from both the livestock and the pastures.

## Comparing Organic Amendments

*Christine Brown, Nutrient Management Specialist, OMAFRA*

Which is the priority on your amendment wish-list - organic matter, nitrogen, phosphorus? Does it matter if potash levels in the material are low? Would the addition of calcium be beneficial?

Cash crop producers have some of the same opportunities for applying organic amendments to their fields as their livestock producer neighbours. But with many different non-agricultural sourced materials on the market, it is important to know which product has the best fit to meet needs of the fields to which the material will be applied.

## Value of Organic Matter

It is relatively easy to determine the fertilizer equivalent value of each material, but determining the dollar value of the organic matter (OM) is more difficult. Organic matter represents up to 68%, or more than 1,300 lbs/ton in some of these materials. Organic matter benefits include:

- feeds the micro organism populations, improving diversity,
- increases the nutrient-holding capacity of the soil (especially sand and clay),
- increases the water-holding capacity of the soil (especially sand and clay), and
- increases soil structure and aggregate stability and helps prevent soil erosion.

## Middlesex SCIA Demonstration

Recently the Middlesex Soil & Crop Improvement Association demonstrated the application of three different materials – 1. processed biosolids pellets, 2. N-viro, and municipal green bin compost. Each product could be applied without requiring a nutrient management plan as they are regulated under the Canadian Fertilizers Act or are classified as an unrestricted compost. Each product had some unique characteristics that made it a good fit for some specific conditions. Samples of each material were taken for analysis so that each could be easily compared. The macro and micro nutrients that they would provide (in lbs/ton as applied) is shown in Table 3, as well as organic matter additions, pH, bulk density and C:N ratio.

**Processed biosolids pellets** are an excellent source of organic matter, nitrogen, phosphorus and micronutrients, but are not the product of choice if potash is an important requirement. This product would not be a good choice for fields with low potassium fertility, or alfalfa forages with a aggressive harvest schedule, unless the field was supplemented with potash (KCl). Processed biosolids are available from Windsor and Toronto and are similar in content. The processes used at the water treatment plant do result in some differences in aluminum, calcium, iron levels that could affect phosphorus availability, especially low pH soils.

**Table 3. Amendment Material Analysis (Middlesex S&CIA) Tour**

		Biosolids Pellets (Windsor)	Biosolids Pellets (Toronto)	N-Viro (Sarnia)	Municipal Greenbin Compost (London)
Dry Matter (DM)	%	94.8	95.1	77.0	77.0
pH		6.3	6.8	12.6	6.9
Bulk Density	kg/m <sup>3</sup>	588	795	836	316
Bulk Density	lbs/ft <sup>3</sup>	36.7	49.6	52.2	19.7
C:N Ratio		9:1	7:1	21:1	12:1
<b>lbs per ton (as-applied basis)</b>					
Total N		87	92	11.4	47
NH <sub>4</sub> -N		3.6	1.3	0.5	5.3
Available N <sup>1</sup>		45	47	4	18
P <sub>2</sub> O <sub>5</sub>		72 <sup>2</sup>	91	15	19
K <sub>2</sub> O		4	3	79	19
Calcium	Ca	32	68	322	63
Aluminium	Al	89 <sup>2</sup>	29	28	7
Iron	Fe	21	80	15	9
Sulphur	S	17	21	59	8
Magnesium	Mg	8	12	14	6
Manganese	Mn	1.1	0.7	0.4	0.3
Copper	Cu	0.6	2.0	0.2	0.1
Zinc	Zn	1.0	1.9	0.4	0.3
Boron	Bo	0.03	0.05	0.05	0.02
Sodium	Na	3	2	7	15
Total Salts		6	5	32	9
Organic Matter	OM	1320	1152	432	1002
<sup>1</sup> Available N is an estimate of available N in the year of application (fall or spring applied) – availability will vary with season of application, soil temperature and moisture conditions and C:N ratio. <sup>2</sup> P205 availability could be reduced with high Aluminium levels when combined with low pH					

**N-Viro** is also a biosolids material. It is processed with kiln dust to provide a liming benefit to fields. The high calcium and potassium indicate availability of liming capacity from the kiln dust, making this product ideal for sandy soils with low pH levels. Nitrogen contribution and organic matter per ton is relatively low. Planting immediately after application should be avoided, especially on dry sandy soils, since high salt content could lead to seed-burn. N-Viro should be applied on a wind-free day, because it is dusty.

**Municipal green bin compost** is a high organic matter product with a good balance of available N-P-K and micro nutrients. With a bulk density of about 20 lbs/cubic foot, the odour and consistency is similar to corn silage. This compost is easier to apply uniformly than most solid manure types. This type of product fits well when applied once in the rotation (i.e., after cereal harvest in the fall) at about 10 ton/acre. Hamilton, Peel, Ottawa and Thorold regions also have municipal green bin compost programs available or in development.

**Table 4. Approximate Cost Comparison**

Type	Cost/Tonne	Includes Trucking	Includes Spreading
Windsor Biosolids Pellets	\$ 24	yes	\$ 8 / T
N-Viro – Sarnia	<b>\$ 50</b>	yes	yes
London Municipal Greenbin Compost	<b>\$ 12</b>	no	no

The information in this table is based on information given at the Middlesex S&C meeting by each of the sales representatives. They are subject to change based on volume applied and distance.

Representatives:  
 Windsor Processed Biosolids Pellets: Harry Buurma – 519-849-5010 [buurma.family@gmail.com](mailto:buurma.family@gmail.com)  
 N-Viro – Ian Shipley 519-786-2106 or Lise LeBlanc 519-410-3228 [lise.leblanc@n-viro.ca](mailto:lise.leblanc@n-viro.ca)  
 London Municipal Greenbin Compost – John Killins or Travis Woollings 519-317-6756 [twoollings@rogers.com](mailto:twoollings@rogers.com)



## Farm Maps Made Easy

Christine Brown, Nutrient Management Specialist – Field Crops, OMAFRA

Tired of drawing maps of your fields? There is a new on-line tool available that lets you see your farmstead and fields from the air....and close up.

The Ontario Ministry of Natural Resources has a GIS website that can be used for looking at aerial views of farms or for

mapping fields anywhere in the province. The mapping tool has many layers, including contours to measure slopes and tools to measure distance and assess GPS coordinates. There are too many features to list, but they are worth trying out.

The map below is from the Outdoor Farm

Show site in Woodstock. It shows contour lines, distance from front to back of the OSCIA plot area, and the GPS coordinates. The site can be found at [http://www.lio.ontario.ca/imf-ows/imf.jsp?site=makeamap\\_en](http://www.lio.ontario.ca/imf-ows/imf.jsp?site=makeamap_en) or visit [www.ontario.ca/mnr](http://www.ontario.ca/mnr) and click "Maps & Geographic Information".

**Measure Tool**

This document shows the positions of the points that you have clicked on the map using the measure tool, and reports the great circle distance between them.

Position	80° 47' 6.4" W
	43° 8' 57.9" N
Position	80° 47' 3.5" W
	43° 8' 58.8" N
Distance	71.0 m
True Course	66.6°

**Map Layers**

- Administrative Boundaries
- Natural Features
  - Water and Navigational Aids
  - Vegetation
    - Wooded Areas
    - Wooded Areas by Type
    - Hedge/Hedgerow
  - Topographic Features
    - Cliff
    - Contours
    - Bedrock and Structural Geology
  - Constructed Features
    - Roads and Bridges
    - Trails
    - Railways, Utilities and Towers
    - Airports
    - Structures
  - Grids
    - 1 Degree Lat/Long Grid
    - 5 Degree Lat/Long Grid
    - 15 Minute Lat/Long Grid
    - NTS 250K Grid
    - NTS 50K Grid
    - OBM Map Sheet Index
  - Imagery
    - Satellite Imagery
    - Orthophotography

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*a partnership of:*

**Temiskaming Soil & Crop Improvement Association**

**N.E. Ontario Wheat Growers**

**Temiskaming Grain Growers**

SUPPORTING TEMISKAMING FARMERS

## Northern Ontario Agri-Food Education & Marketing Inc.

### Exhibits popular at Northern events

NORTHERN ONTARIO – NOAFEM's 15 educational tabletop and interactive exhibits are proving popular additions to year round events in Northern Ontario. This year exhibits have been scheduled at events in all 11 districts of Northern Ontario.

The most popular exhibit is *From Hay...to Milk...to You!* that includes Northern MAPLE, a dairy cow on a mission, closely followed by *Dairy Goodness* which is based on Canada's Food Guide. Others receiving positive reviews include *Farm Animals*, *Goats for all Reasons* and *Which Came First? The Chicken? The Egg?*

The exhibits have been developed, with funding support from FedNor, the Ontario Trillium Foundation, Farm Credit Canada and Retired Teachers of Ontario, to increase awareness of Northern Ontario agriculture and help consumers of all ages understand where their food comes from.

For more information about these exhibits, contact us at: 705-694-4396 or [noront.agrifood@sympatico.ca](mailto:noront.agrifood@sympatico.ca)



Family enjoys NOAFEM exhibit at the Heritage Fair in Mindemoya on Manitoulin Island.

### Giant Pumpkins

September 11 – Lively Fall Fair  
Desbarats Farmers' Market  
Bruce Mines Agricultural Fair  
September 13 – Central Manitoulin Public School  
September 16 – New Liskeard Fall Fair

### Agriculture to be the focus of International Science & Technology Week at Science North in Sudbury

SUDBURY – NOAFEM, in partnership with Science North, will present Technology used in agriculture to highlight International Science & Technology Week at Science North on October 19 through 24, 2010 with a focus on robotics. This event will be open to school visits of all levels and the general public.



OFAC's Oprah on location

Plans for the exhibit include a live 'feed' from the Mooney dairy farm in Massey where a robotic milking system is used; a visit from OFAC's OPRAH, a robotic spokesperson for agriculture; weather technology from Nipissing University that is used by farmers; using a tractor GPS; a virtual farm tour; a display of farm equipment and of course Northern MAPLE.

This event will be a GREAT opportunity to get acquainted with technology available for use on today's farms.

### What's Happening?

1. **38 Agricultural Fairs** across northern Ontario in June through September
2. **23 Farmers' Markets** (at least) across the north. Visit one to enjoy the harvest season in Northern Ontario

Check our website for a complete listing:

[www.norontagrifood.org](http://www.norontagrifood.org)



## Mike Cowbrough, Weed Specialist, at ASCIA Spring Twilight Meeting

by Sharon Lane



The Spring Twilight Meeting of the Algoma Soil & Crop Improvement Association was held on the evening of June 16 at Glenna Palmer's and Dwayne Palmer's Onaknoll Farms at Bruce Station. Murray Cochrane introduced the guests: Errol Caldwell, Research Director from the Sault Ste. Marie Innovation Centre (SSMIC) and Algoma University's Invasive Species Research Institute (ISRI), Kelly Bird, NEOSCIA's intern and guest speaker, Mike Cowbrough, Weed Specialist from the Guelph OMAFRA office. The theme of the evening was weed identification; weed control by conventional means and Integrated Pest Management Methods such as crop rotation and companion cropping; and sprayer calibration. Mike Cowbrough identified weeds that farmers brought to the meeting by asking members of the audience to smell or taste them, to look at the flowers, to identify leaf type and leaf arrangement and to identify the root system. For example, Common mallow tastes like cheese, has 5 white to pinkish white pet-

als, has kidney-shaped leaves with shallow toothed margins, and a stout taproot. Some plants presented as problems were pineapple weed, daisy fleabane, tansy, mallow, bindweed, field horsetail, bedstraw, and vetch.

Mike reminded the audience that it is all in one's perspective of what is a "good" plant. Bedstraw was used by the early settlers to stuff mattresses. Vetch is a legume and can be used as fodder and can replenish nitrogen in the soil. Tansy belongs to the aster family and has been used as a medicine for worms, fever, and colds; as an insect repellent by early homesteaders; and, today, as pest control in organic gardens. All of these plants are now weeds for the farmers in Algoma.

Perennial weeds are hard to control and should be sprayed in the fall when in flower to kill the seeds.

Field horsetail can't be eradicated. It might be

controlled by the pH of the soil and proper drainage might help this. Bedstraw can be controlled for one season by spraying a herbicide but legumes are sensitive to herbicides and it has a residual effect for 2 years to 48 months.

Organic weed control is to pull it out. In some cases, rotational grazing will control weed growth.

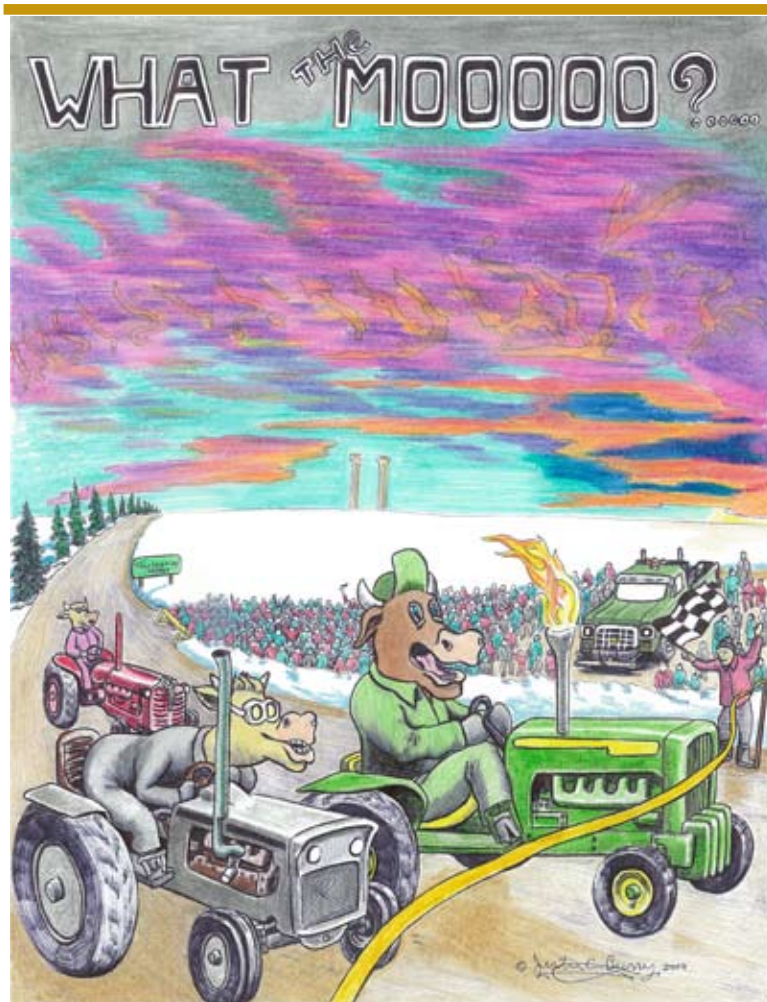
If the crop doesn't cover the soil totally, weeds or unwanted plants will.

Errol Caldwell gave a brief talk on garlic mustard (*Alliaria petiolata*) and handed out packages of information on this new invasive plant. Garlic

mustard has recently been identified on St. Joseph's Island and in the Sault Ste. Marie area. If dairy cattle eat it, the garlic can be tasted in the milk. Roundup can be sprayed on the plant if the soil is not producing organic products. Sugar maple trees have a 50% growth loss from garlic mustard.

David Trivers ended the meeting by giving information on the bedstraw plot testing and reminded people of the upcoming meeting on July 16 on the changes for labelling of maple syrup.

Coffee and donuts were enjoyed by those attending at the close of the meeting.



This month's artwork comes from Justin Burre of Englebart. View more of his work at <http://justin-burry.tripod.com>