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Breaking Ground (in Northeastern Ontario) EALL 2005

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

elcome to the latest 'incarnation' of **Breaking Ground**! Under a new agreement with OMAFRA, this is the final issue that will be sent to everyone on the 'Free Publication' list. In the future, this newsletter can only be sent to CURRENT members of the North Eastern Ontario Soil & Crop Improvement Association. Memberships will be \$10.00 annually.

Look this issue over and see if it is worth it to you. Remember, \$10.00 is only equal to 10 litres of gas – if you're lucky! You will probably get better mileage out of this 'Rag'!

See how to sign up on the back page.



During the 2005 growing season, an extensive baseline on-farm research program was undertaken on 9 farms across the North-East. Watch for the results in an upcoming issue of 'Breaking Ground'!

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. Send articles to: Graham Gambles Box 586, Temiskaming Shores, ON POJ 1K0 Tel: (705) 672-3105 Fax: (705) 672-5959 E-Mail: gamblesgraham@yahoo.ca

Our unique roots

The following editorial first appeared in 'The Temiskaming Speaker', Aug. 24, 2005

The amazing turnout for the Foire gourmande in Ville-Marie this past August, estimated at over 19,000, and attended by several local participants, attests to the fact that people love their food.

The interest of this area in an event in Ville-Marie is part of the effort to promote economic development between the two regions of Temiskaming, Ontario and Témiscamingue, Québec. If it were not for an arbitrary political line drawn down the middle of Lake Temiskaming, it would be one region, many contend. There are so many similarities in the presence of the lake, in the nature of the land, in the type of economic activity, and in the challenges of living in the north.

Those who enjoyed the Foire gourmande, who would have liked to have attended, but did not get there from this region, can still find many of those products in our region.

Support at the local farmers' markets in New Liskeard and Haileybury will encourage local producers to create unique food products. Wherever foods that are special to the north can be found, people are encouraged to try them, and if they like them, go back for more.

The concept is that there is food unique to the region, and it is that which is being promoted.

It is not possible to have a cultural event without food, and from the region we experience cheeses, wines, confections, smoked fish, wild game sausages, spring rolls, mushrooms, corn on the cob, strawberry liqueur and much more.

Add to that music, horse rides, and other entertainments, and it is possible to see that this movement is not just about enjoying the food we grow, but celebrating our unique roots.

For more information, look up <www.northernlightsregionalfoods> on the internet, or contact Maurice Landriault, Project Coordinator, at Box 339, Haileybury, ON, POJ 1K0, Tel: 705-672-2591 x228 or Fax: 705-672-5959. The festival will be held again in 2006, on Aug. 18, 19, 20. Vendors from across N.E. Ontario are invited to attend. The success of this event begs the question: Could a similar event be successful elsewhere in the North?

The When & Where of Annual Meetings

Algoma:	Jan. 25, 2006, 10:00 am to 3:00 pm, Bruce Station Community Hall <i>Contact</i> Harold Stewart705-842-0392
Cochrane North:	Dec. 7, 2005, 7:30 pm, Cochrane Legion (or Fire Hall as alternate) <i>Contact</i> Jack Mann
Cochrane South:	Contact Ron Ryckman
Manitoulin:	Contact Wendy VanEvery 705-282-2102
Muskoka:	Annual General Meeting & Pot Luck Supper Fri., Nov. 25, 2005, 6:30 pm, Milford Bay Community Centre <i>Contact</i> Katya Riley705-764-1695
Nipissing:	Contact Gerald Beaudry705-594-9081
Parry Sound:	Contact Klaus Wand 705-724-2314
Sudbury:	Contact James Found705-969-4597
Temiskaming:	Nov. 25, 2005, 9:30 am to 4:00 pm, Franchefco's in Temiskaming Shores
	Contact Dennis Jibb

Accredited Soil Testing Laboratories in Ontario

A&L Canada Laboratories Inc.

2136 Jetstream Rd. London, ON N5V 3P5 T: (519) 457-2575 F: (519) 457-2664 email: aginfo@alcanada.com

Accutest Laboratories

146 Colonnnade Rd., Unit #8 Nepean, ON K2E 7Y1 T: (613) 727-5692 F: (613) 727-5222 email: phaulenna@accutestlabs.com

Agri-Food Laboratories

503 Imperial Rd., Unit #1 Guelph, ON N1H 6T9 T: 1-800-265-7175 F: (519) 837-1242 email: lab@agtest.com

Stan Young A Cochrane Native Son

Stan Young passed away suddenly on December 30, 2004. As Mike Jenkinson of OAC stated, "Stan Young was a passionate advocate for agriculture and the OAC. A former faculty member in Crop Science, a leader in agricultural research and extension and a long-serving board member for numerous agricultural organizations, Stan demonstrated a deep commitment to Ontario farmers and the rural community."

Shortly before his sudden death, Stan took the initial steps towards establishing an endowment fund in the OAC Alumni Foundation for Agricultural Communications at the OAC. In honour of his memory, Stan's family hopes to fulfill his wish to establish this new award that will ultimately benefit the larger agricultural community through improved communications and outreach efforts. Given Stan's love for agriculture and his leadership in extension, the award is a fitting tribute to his many contributions to the industry and will serve as a lasting memorial.

Donations can be made to the OAC Alumni Foundation Stan Young Award, c/o University of Guelph, Alumni House, Guelph, Ontario N1G 2W1.

Accredited Soil Testing Laboratories in Ontario

Brookside Laboratories Inc. 301 South Main St. New Knoxville, Ohio 45871 T: (419) 753-2448 F: (419) 753-2949 email: nfisher@blinc.com

Soil and Nutrient Laboratory University of Guelph, P.O. Box 3650 95 Stone Rd., West Guelph, ON N1H 8J7 T: (519) 767-6226 F: (519) 767-6240 email: nschrier@lsd.uoguelph

Stratford Agri Analysis 1131 Erie St., Box 760 Stratford, ON N5A 6W1 T: 1-800-323-9089 F: (519) 273-4411 email: lab@agtest.com

Breaking Ground (in Northeastern Ontario)

Funding for Speakers

The Agricultural Adaptation Council has some funding available for bringing speakers to your annual meetings or other agriculture-related events. For more information, check out their website: www.adaptcouncil.org



After a hiatus of a little more than a year, the "ENVIRONMENTAL FARM PLAN" (EFP) is back in the land of the living!

The latest version, announced in April of this year, is an updated model of the highly supported version that ran for the previous decade. However, this time around it is more than a Provincial program. It is now a NATIONAL program. Even the Territories are involved!

As in the past, it must be primarily considered to be an educational program. Free workshops are made available to anyone in the rural community who wishes to attend. In the past we have had the standard beef, dairy and crop producers flavoured with a sprinkling of greenhouse growers, plus hog, sheep, goat and equine operators. Fowl operations included chickens, quail and emu. For good measure, toss in maple syrup producers, fish farms and tree nurseries! If I have missed any category, we will be happy to serve you in the coming months!

As in the past, the workshops will take 2 days of your time, plus a few evenings of "homework". This involves your personal environmental evaluation of your farm, measured against current legislation and accepted "Best Management Practices" for modern farmers.

Your evaluation is your own, and no one but you will decide on what upgrades (if any) should happen on your property as a result of this educational exercise.

If you do decide to make an upgrade, have

a gross farm income of \$7000.00 or more, and are eligible to join the OFA, CFFO, or the NFU (or you have an exemption such as in the Mennonite community), the successful completion of the educational program allows you to participate in the Federally funded Environmental Cost-Share Opportunities (worth up to \$30,000 per legal farm entity) as well as the Provincially funded Water Supply Expansion Program, worth up to an additional \$15,000 per legal farm entity.

An added feature of note, SPECIFICALLY for those farmers who have FULLY completed an earlier EFP workshop program is a "Grandfather Clause". These individuals are allowed to immediately participate in the Cost-Share program without taking the new EFP training course until MARCH, 2006, (provided that any actions are taken on that land that was evaluated in the original course). Contact your EFP Program Rep before then!

There are 36 categories of "Best Management Practices" that you can apply under, and the rebate varies from 30 % to 50 %. In addition, the farmer can claim \$20.00 per hour for his personal labour and \$50.00 per hour for equipment usage for specific actions in developing certain projects.

The first northern workshops have already taken place and more are in the planning stage for this fall and winter. Contact your EFP Program Representative or your local OMAFRA office NOW to register! INTRODUCING: Guide to Tracking 2003-2005 Program Payments to Ontario Farmers

This guide summarizes 37 federal and provincial programs that issued payments to Ontario farmers from 2003-2005 and projects payments in 2006. The purpose of this guide is to assist farmers and their advisors in tracking the payments, and in cashflow and business planning.

This guide lists CAIS and APF Companion programs, NISA and programs based on NISA participation, BSE support programs and other programs.

The guide provides program details regarding:

- eligibility,
- payment calculations,
- application deadlines,
- time frames in which payments were issued,
- program contact phone numbers and website addresses, and
- a Payment Chart organized by calendar years 2003 through 2006 that gives a quick summary showing which programs issued payments in that year.

The Guide to Tracking 2003 - 2005 Program Payments to Ontario Farmers can be found on the OMAF website at: http://www. omafra.gov.on.ca/english/busdev/ facts/payments.htm

Award Of Merit Morley Shepherdson



The Temiskaming Soil & Crop Improvement Association is delighted to nominate Morley Shepherdson of New Liskeard for the North Eastern Ontario Soil and Crop Improvement Association - 2005- "Award Of Merit".

Born in New Liskeard on March 30, 1932, Morley was "lucky" number seven in a family of eleven children. Raised on the farm by his pioneering parents, Morley was always involved in sheep, cattle and crop production.

In 1951, he married Frances Edwards of Englehart and raised four children. Eventually, he spent a total of 41 years on his own farm operation, including 17 years in partnership with his son, Darwood.

But Morley had interests beyond farming, and this is why he is being honoured here today. He was always willing to accept leadership roles in farm organizations such as the Soil & Crop Improvement Association, the sheep producers, and the Temiskaming Cattlemen's Association. He also strayed into community organizations, some of which we will identify shortly. His ability to communicate may have been initiated with the Junior Farmers organization. In 1949, at the age of 16, he was the winner of their local speaking competition. He's been speaking ever since!

For instance, let's look at his background in the Cattlemen's Association. He was a director for Temiskaming in the period 1969 through 1991, and continued on as the Secretary-Treasurer until 2003. He was President of the Ontario Association in 1979-80, and was President of the Canadian Cattlemen's Association in 1989-90!

While he was with this association, he became a Charter Member of the "Northern Cattle & Stocker Sales", and struck with it for 42 years. He was a founding member of the "Beef Information Centre". He became a leader in the genetic evaluation program, both provincially and nationally. With this experience, he became the first non-governmental person to become President of the "National Advisory Council" an organization dealing with livestock genetic research work in Canada.

And as we said earlier, he liked to speak! He was a guest speaker for numerous farm organizations all over Canada and the USA. He also represented Canada in five countries at conferences on beef exporting in Australia, New Zealand, and the United States. His willingness to become involved as a leader in northern agriculture gave him the opportunity to directly influence top bureaucrats, Prime Ministers, and even the President of Japan!

For these efforts, in 1989 he received the "Centennial Award" from the Province of Ontario for his outstanding contribution to agriculture. This was followed in 1990 with his induction into the New Liskeard Secondary School's "Hall of Fame", now located in

Cochrane District Environmental Farm Plan Workshop.

Wednesday, Nov. 30, 2005 at Cochrane.

Contact Clare Venne at 705-594-9194.

the Temiskaming & District Secondary School.

Currently, just to keep his hand in the agricultural game, he is the Administrator for the "Temiskaming Agricultural Development Association", commonly known as "TADA". He is also the Secretary-Treasurer of the Temiskaming Crops Coalition, which includes the Temiskaming Soil and Crop Improvement Association.

But as we said earlier, he also contributes to community organizations as well. Since his teenaged years, he has been actively engaged in his Church in administrative roles, teaching classes, and on speaking assignments. These activities continue even today. In addition, he worked for the local Boy Scouts and for "Camp Quality", a regional camp for children with cancer.

Morley also has an artistic side! He plays the viola in the "Temiskaming Strings Ensemble", sings with, and is President of the "Temiskaming Community Choir", and is Chairman of the "Temiskaming Music Festival" Committee. A well-rounded individual indeed!

For these reasons, and more, we congratulate Morley Shepherdson for receiving the 2005 N.E.O.S.C.I.A. Award Of Merit!!! *Graham Gambles*

Muskoka District Environmental Plan Workshop.

Thursday, Dec. 01, 2005, at Milford Bay.

Contact Katya Riley at 705-764-1695.

Announcements

A 'MANURE STORAGE SEMINAR' will be held in Verner, Caldwell Twp. Bldg. on December 6, 2005, and at New Liskeard, Boreal College Rm. 557 on December 8, 2005. Presented by OMAFRA and Environmental Farm Plan. Both meetings run from 10:00 am to 12:30 pm.

Topics include manure handling, liquid & solid manure structures & construction, sizing of manure storage, Nutrient Management Act, and Government Funding. To register, contact OMAFRA at 1-800-461-6132.

NOTE: Would you like an on-farm visit by an OMAFRA engineer? Harold House, M.Sc., P.Eng., the Beef & Dairy Structures & Equipment Lead will be available **by appointment** from December 6 to 8 in Cochrane, Temiskaming, Nipissing, Sudbury and Parry Sound Districts. Contact OMAFRA at 1-800-461-6132 by November 29.

Breaking Ground (in Northeastern Ontario)

Consider using wood ash – It pays to use wood ash alone and in combination with lime or manure

Dr. Tarlok Singh Sabota

Previous studies at Thunder Bay Agricultural Research Station (TBARS), by John Heard and team, indicated that application of wood ash more than doubled the alfalfa yields and improved the barely yield by about 30 %. Soil pH increased by 0.5 - 1.2 units with wood ash and only 0 - 0.3 units with lime. In our ongoing experiments on wood ash, manure and lime, at TBARS, we observed that bluish green colour, typical of alfalfa, was retained only in wood ash applied plots. Our studies also indicate that it pays to apply wood ash alone and also along with lime and manure. In the first cut alfalfa (seeded May 2004, harvested June 2005) the protein content was in the order of:

Wood Ash + Manure > Wood Ash > Manure > Check (no manure or wood ash); there is more than 2.5 % increase in protein content with wood ash and 3.5 % increase with manure + wood ash over check. Manure alone increased the protein content by only 1.5 % as compared to the check. Both wood ash and manure were added at the recommended rates.

Wood Ash + Lime > Wood Ash > Lime > Check (no lime or wood ash); there is more than 2.0 % increase in protein content with wood ash and 2.5 % increase with lime + wood ash over check. Lime alone increased the protein content by only 1.15 % as compared to the check. In 'Wood Ash + Lime', each were supplied to meet 50 % of the liming requirement and the two together fully met the liming requirement of the soil.

Thus the positive effect of enhancing protein content in alfalfa was more with wood ash than that with manure or lime when all three inputs were used singly/separately. And the wood ash improved the efficiency of manure and lime. Higher protein content in alfalfa with wood ash could lower the feed costs and improve the milk yield of dairy cattle.

For soils within a pH range of 5.4 -6.0, lime at least@4 tonnes/ha would be required, which will cost at least \$ 244/ha. Whereas, 10 tonnes wood ash/ha would not only equal 4 tonnes lime/ha in liming effect but also do better job than lime and that too at no cost. For other benefits of wood ash vis-à-vis lime, please refer to my previous notes on wood ash in the Northwest Link/or feel free to call me at 807 475 1373.

Temiskaming Crops Coalition

2004

Innual

Manitoulin District Environmental Farm Plan.

Thursday, Dec. 01, 2005, at Manitoulin.

Contact Mary Scott at 705-377-4928.

Corn Grazing Project 2004

Little boy blue Come blow your born Cows in the corn! Barry Potter Livestock Specialists, OMAF

Introduction:

This project looked at extending the grazing season for beef cattle by planting corn in the spring for grazing in November / December. The corn was actually grazed in September, as the corn experienced frost damage on August 24th. Grazing the corn in September allowed our stockpiled grass to continue to grow during the warm, dry September.

Project Description

Area: 3.7 acres of tiled (100-ft) clay soil

Animals:

- Purebred Charolais Cows, average weight 1450 lbs.
- Calves born mid March to late May.
- Cows grazed for 26 days, from September 16 to October 12.
- On September 16, 41 adult animals and 21 calves were placed in the corn patch. On September 22,

ten calves were weaned, leaving 11 calves and 31 adult animals. On September 25, ten adult animals were returned to leave 41 adult animals and 11 calves for the duration of the trial. This allowed for a total of 1036 cow days and 340 calf days, or 280 cow days per acre, and 92 calf days. The trial results focus on costs per cow days per acre.

Field

Previous crop: trefoil-grass mixture plowed down fall 2003

	Soil Test
рН	6.5
Р	13 Medium
К	237 Very High
Mg	828 High
Texture	Fine

Cultivation

The field was mould board plowed in the fall of 2003. The field was disked in the spring of 2004. Fertilizer was broadcast at a rate of 100-40-0. The field was then cultivated and seeded on June 1, 2004 with a conventional 20 by 6-inch spacing conventional drill. Every two out of three runs were blocked to provide in-field rows of 18 inches. Two units of corn were seeded on 3.7 acres (originally expected to be 5 acres.) The crop was strip grazed using a single strand of electrified polywire to control access. Cows were allowed into a new section every two to three days, as they cleaned up the corn and residue. A three-point hitch mower was used to cut a swath about 4 feet wide in the corn. This allowed for a single hotwire to separate sections of corn to allow the cattle access as they moved down the field. The mowed strip allowed easier placement of the fence wire, and provided an opportunity for the cows to see the fence.

The field was chisel plowed post grazing. An observation was that the ground of the corn land was compacted and harder to chisel than the canola land next to it. During the grazing period the weather was drier than normal, reducing what could have been a higher incidence of compacting.

Results and Discussion

Plant population count one month after planting: 41849 plants per acre.

Although the corn was grazed earlier than planned, it allowed the grazing season to be extended (into November) by sparing the other forages that had been stockpiled, which the cattle utilized after the corn was finished.

Algoma District Environmental Farm Plan Workshop.

Contact Jonathon Stewart at 705-842-0392.

Animal Behaviour: Upon entering a new block, the cattle would go to the center of the area and then graze out to the sides. The cows ate almost all of the plant. Very little residue remained save for about six to ten inches of the corn stalk once the cows had finished grazing a block.

Costs: The costs for this project ended up being \$0.79 per cow day of grazing. We pay pasture rent at \$0.53 per cow calf pair per day at another location. The corn was more expensive to grow than traditional grass pasture but provided us with grazing during a critical interval when we would have been without pasture. Stored feed costs us approximately \$1.00 per cow per day.

Conclusions: The corn fitted into an overall grazing program. It would be interesting to observe results in a wet fall. The corn provided extra grazing at less cost than stored feeds. Other forage species may supply the same benefit at less expensive costs.

Table 1. Total Project Costs

	Per Acre	Project	Per cow day
Machinery	\$53.00	\$196.10	\$0.189
Seed	\$96.76	\$358.00	\$0.346
Fertility	\$55.00	\$203.50	\$0.196
Spray	\$4.75	\$17.58	\$0.017
Labour	\$2.16	\$45.00	\$0.043
Total Cost	\$211.67	\$820.18	\$0.79

Breaking Ground (in Northeastern Ontario)

Temiskaming Crops Coalition Annual Report 2004

Table 2. Machinery Costs: Based on2004 Custom Rates

	Per Acre	Project Cost
Plowing	\$18	\$55.50
Disking	\$12	\$44.40
Cultivating	\$9	\$33.30
Seeding	\$10	\$37.00
Spraying	\$7	\$25.90
Total Machi	\$196.10	

Labour

Set up Fencing:	1.5 hour
Tear Down:	1 hour
Movement:	8 times @ 0.25 hours = 2 hours
Total Labour:	4.5 hours @ \$10 per hour = \$45.

Table 3. Project Costs by Percentage



Other Costs

Fertility: 100-40-0 Cost: \$55 / acre X 3.7 acres = \$203.50Seed: Dekalb DKC 2712 Roundup Ready: CHU 2250: 2 X \$179 = \$358.00Crop was sprayed with Transorb Roundup after emergence at 0.5 litres per acre x \$9.50 / 1 = \$4.75 x 3.7 = \$17.58.

Thanks to the following for their support: Sean Cochrane, Monsanto Kevin Pratt, Fergusson Farms Custom Operations Manager Liz Potter, Golden Meadow Farms, Managing Partner Michelle Menard, OMAF Client Services Representative Terry Phillips, Temiskaming Ag Centre Bob Marshall, Fergusson Farms, Technical Support Phillip Potter, Technical Support Daniel Tasse, Agricultural Representative



Nipissing **District** Environmental **Farm Plan** Workshop.

Contact Clare Venne at 705-594-9194.

Field Information

ing Groun (in Northeastern Ontario)

Temiskaming Crops Coalition 2004

Annual Report 2004 Canola demonstration plots at Ken and Monique Peplinski

Canola Plots / Harvest Results Oct 7, 2004 Ken and Monique Peplinski

Variety	Graded	Dockage	Grade	Yield adjusted		Yield Increase	Yield Index	Yield Index
	Moisture %	%		at 10%	t/ac	Treated	Untreated	Treated
Invigor 2643	8.3	1.6	#1	2,206	1.00		107	
+Lance	8.7	1.1	#1	2,508	1.14	14% (302lbs)		101
Invigor 5020	8	2.9	#1	2,079	0.94		101	
+Lance	8	1.4	#1	2,738	1.24	32% (659lbs)		111
Hyola 512RR	7.7	2	#1*	1,608	0.73		78	
+Lance	8.2	1.7	#2 G	2,061	0.94	28% (453lbs)		83
Pioneer 45H21	7.8	2	#1	2,041	0.93		99	
+Lance	7.8	1.4	#1	2,497	1.13	22% (456lbs)		101
Hyola 514 RR	6.9	2.6	#2 G	1,870	0.85		91	
+Lance	7.1	2.4	#2 G	2,334	1.06	25% (464lbs)		94
Hyola 357RR	7.6	2	#1	2,146	0.97		104	
+Lance	7.5	1.3	#1	2,457	1.11	14% (311lbs)		99
Invigor 5030	6.9	1.4	#1	2,352	1.07		114	
+Lance	7	1.4	#1	2,587	1.17	10% (235lbs)		105
Invigor 5070	6.9	2.7	#1 *	2,041	0.93		99	
+Lance	7.2	1.3	#1	2,488	1.13	22% (447lbs)		101
Invigor 2643	6.6	1.8	#1	2,168	0.98		105	
+Lance	6.6	1.5	#1	2,595	1.18	19.69% (427lbs)		105

* bordeline,

G = green seed



Swathed Sept 15-16th , harvested October 7th, 2004

Thanks to Ken and Monique Peplinski for the extra work required to do these test plots.

Thanks to the following

suppliers ! Tembikaming Ag Center / **Rools** verieties & Lance Terry Phillips • Wahi View Elevators / **Finneer / Kevin Runnally** · Cordinal Farm Supplies / Invigor varieties

Wayne Hawke



Prepared by: Daniel Tassé, OMAF

· Previous crops: barley,

· soil type- New Liskeard Clay - muck across

wheat

center tile drain @ 100ft seeded June 3th .2004 fertilizer : 90-34-55 seeding rate +/- 5lbs/ac

Plots sprayed July 23ed





Fungicide - Lance

- Registered on canola, beans, lentils, chickpeas & potations
- · canola sclerotinia stem 305
- inhibits spores germination, mycelial growth on leaf surface apply at 20-50% flowering
- rate 142g/ac (\$22.50/ac)

application \$7.00/ac =

\$29.50/ac/application

20 bs

195 lbs

184 bs

173 bs

.15/b

.16/b

5 the

.09 the

.08 fisc

di fac



OMAFRA Field Crop Specialists – Your Crop Info Source

Don't Guess... Soil Test!

ropline

by Keith Reid, Soil Fertility Specialist, OMAFRA, Stratford

With all of the soil samples that are analyzed each year, I'm amazed at the number of fields that still don't get soil tested. It baffles me why a farmer would spend thousands of dollars on fertilizer, without investing twenty bucks in a soil test to tell him if he is putting on the right amount.

It is possible to grow good crops without soil testing, the same as it is possible to get away with never checking the oil in your tractor. The risk of not

knowing what is in your soil is that you could be losing yield from insufficient nutrients, or spending far more on fertilizer than you need to. There has been lots of criticism of the accuracy of soil tests, but you can

minimize most of the potential errors by following a few easy steps.

• Take the sample properly

The sample has to be representative of the field, so avoid sampling in dead furrows, near gravel roads, or where manure or lime has been piled. For a single sample from a field, make sure the sample reflects the proportion of knolls and hollows, or different soil types. Don't try to represent more than 25 acres with a single sample. If you are subdividing larger fields, divide along the old fence boundaries first (to reflect past management), then according to topography or soil type. Always sample to a consistent depth.

 Mix the sample carefully Break up all the lumps, and mix the sample thoroughly, so the sub-sample that goes to the lab reflects the sample you put in the pail. It should take as long to mix the samples as it did to collect it, if you are mixing properly.

• Send the samples to an accredited lab

The OMAFRA accredited labs make their business analyzing farm soils, and their results are checked regularly. Other labs may analyze the occasional

farm soil, but it is a sideline for them.

The science of soil analysis is complex enough that only labs that are doing it all the time can provide

consistently accurate results.

• Insist on the OMAFRA accredited analyses

Most of the accredited soil test labs will perform more analyses than just the accredited OMAFRA test, because they are analyzing samples outside of Ontario. The OMAFRA tests have been proven to be the most consistent and accurate for the range of soil types found in Ontario, and the fertilizer recommendations in OMAFRA publications and software are based on these tests. Be sure to specify the OMAFRA accredited soil tests for every sample.

Fall is a great time to get soil sampling done. The weather is pleasant, it's easy to get across the fields, and there is lots of time to get the sample results back before next spring. It might just be the best investment you ever made.

A SOIL REMEDIATION PROJECT Follow Up 13 Years Later

by Adam Hayes, Soil Management Specialist - Field Crops, OMAFRA, Ridgetown

In 1991 OMAFRA staff worked with a Middlesex farmer in an attempt to restore the productivity to three eroded knolls in a field with the addition of soil and manure. The field was part of the OMAFRA/ University of Guelph Tillage 2000 project in the late 1980's. Benchmark yields taken from different areas in the field identified the lower yielding eroded knolls. Soil was taken from the nearby depressions and moved to the knolls with the farm's front end loader. Approximately 10 to 15 cm (4 - 6") of soil was added to one-half of the three knolls. Manure was added to the top half of the knoll giving four treatments.

A year after applying the amendments a soil characterization was done on the most eroded knoll. This showed that where the soil was added, the topsoil layer (Ap) was thicker and the bulk density was lower than the no soil treatment. The soil structure was also greatly improved.

Yields were taken from the treatments on the most eroded knoll in the following years. The results can be found in Table 1.

Table 1. Corn yield averaged over 2 years.

Treatment	Yield (bu/ac)
Check (no soil added)	97
10 ton/ac manure (no soil added)	138
Soil added	141
Soil and Manure	146

Thinking About Soil Fungi

by Hugh Martin, Organic Production Crop Program Lead, OMAFRA, Guelph

I'll bet you have not thought much about the fungi in your soil lately. Fungi make up 70 % of the soil biomass (the critters in your soil). There are over 25,000 species of soil fungi. It has been estimated that there are 10 - 20 million per gram of soil and 3 -300 meters of hyphae per gram of soil. Soil fungi can be categorized in three groups:

- Saprophytes
- Pathogens
- Mutualists

Saprophytes

The saprophytes are good guys. They are the primary degraders of organic matter and plant residues, which are then further degraded by bacteria decomposers. They recycle C, N, P, and K. Saprophytes are mostly on the soil surface and make up less than 1 % of the soil fungi.

Pathogens

The pathogens are the bad guys. We know them mostly as the cause of plant diseases. Cropping practices influence their effects. Tillage, crop rotation, and plant genetics are all practices to reduce their impact. Natural plant defenses to pathogens include physical barriers on root tips (mucigel), cell walls (lignification), enzymes and proteinase inhibitors produced in the plant.

Mycorrhizae

The mutualistic arbuscular mycorrhizal fungi account for the majority of the fungi in your soil. These fungi need a source of carbon for food. They penetrate the plant root and take photosynthetic carbon (sugars) as a food source for the fungi. In exchange they transfer nutrients along the hyphae into the roots. The mycorrhizae have long hyphae that grow out into the soil up to 8 cm from the roots, greatly increasing the size of the root rhizosphere. This benefits the plants and is complementary to their root system. Over 70 % of plant species are known to associate in this way with mycorrhizae. Exceptions are most brassica species (mustard, cabbage, canola, and sugar beets).

P Uptake

Phosphorous (P) is not mobile in the soil and having aq good level of mycorrhizae can improve the P nutrition of the crop. Mycorrhizae is the most efficient mechanism for P uptake, especially under stress conditions. Nitrogen, iron, copper, zinc, and water uptake is also improved by mycorrhizal fungi. In recent years, it has been found that mycorrhizae produce glomalin (a protein) which improves soil structural stability. In addition to greater uptake of P and other nutrients, mycorrhizae improve water use efficiency, increase plant vigor, decrease plant root pathogens, and can decrease the susceptibility to nematodes.

Enhance Beneficial Soil Fungi

To enhance beneficial fungi in the soil consider the following (Adapted from Magdoff and Weil, 2004):

- Reduce tillage to avoid disruption of hyphae networks
- Reduce fertilizer inputs (especially phosphorous) to encourage nutrient scavenging by fungi
- Increase the number of crops in the rotation
- Plant cover crops to maintain the presence of living roots as hosts.
- Use biocontrol measures for weeds and pests to reduce the impact of fungicides and other pesticides.

Have a good look at your soil, there is a lot more than meets the eye.

A SOIL REMEDIATION PROJECT: Follow Up 13 Years Later

continued

The field has been in no-till since the remediation. The farmer has observed that the areas where the soil was added continue to perform better than where no soil was added. In the fall of 2004 one of the knolls was revisited to examine the soil properties 13 years after the remediation. The results can be found in Table 2.

The top 6 inches where the soil was added generally has higher fertility and higher organic matter than where no soil was added. The lower 6 inches where the soil was added would be a similar soil to the area without additional soil and the soil test numbers reflect that.

The soil profiles were examined at the same time as the soil samples were taken. The depression area still has about 30 cm (12") of topsoil and it is a dark brown colour, indicating a high organic matter level. The area where the soil was added shows two layers of topsoil, the added soil 15 cm (6") and the original topsoil 12 cm (5"). The added soil is a darker brown

colour which agrees with the soil sample numbers. The area where no soil was added has about 15 cm (6") of topsoil and is a light brown colour. The profile from the nearby headland is a lighter colour still and has about 12 cm (5") of topsoil.

The remediation on this site was successful at improving the soil quality and yield in the long term. One of the limitations of this type of remediation is that there is usually more soil required to cover eroded areas than is available in the depressions. Generally, organic amendments are more feasible for soil improvement.

Table 2. Soil test results from the fall of	of 2004
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Treatment (depth of sample)	рН	Phosphorus (ppm)	Potassium (ppm)	Magnesium (ppm)	Organic Matter %
Soil added (0 - 6")	7.6	23	164	175	5.5
Soil added (6 - 12")	7.7	13	81	136	3.7
No soil added (0 - 6")	7.7	12	123	162	3.5
No soil added (6 - 12")	7.7	6	133	187	2.5

BULLETIN GRANDES CULTURES

MAAO – des spécialistes en grandes cultures – votre source d'information

Les analyses de sol: bien mieux que les devinettes!...

par Keith Reid, spécialiste de la fertilité des sols, MAAARO, Stratford

Malgré le nombre important d'échantillons de sol qui sont analysés chaque année, je suis toujours étonné de constater la quantité de champs qui ne font toujours pas l'objet d'analyses! Je ne peux pas comprendre comment un agriculteur peut dépenser des milliers de dollars en engrais, sans investir une vingtaine de dollars dans une analyse de sol qui lui indiquera s'il applique les bonnes quantités d'engrais.

On peut bien sûr obtenir de bonnes récoltes sans analyse de sol, tout comme il

est possible de bien s'en tirer sans jamais vérifier le niveau d'huile du tracteur. Mais, en ne sachant pas ce que contiennent vos sols, vous risquez de manquer de certains éléments nutritifs

et de réduire ainsi vos rendements ou alors d'acheter des quantités d'engrais bien supérieures à ce dont vous avez besoin. On a beaucoup critiqué l'exactitude des analyses de sols, mais il est possible de grandement réduire les risques d'erreurs en suivant ces petits conseils.

• Prélevez les échantillons de façon appropriée

L'échantillon doit être représentatif du champ, alors évitez de le prélever dans des creux improductifs, à proximité des chemins en gravier ou près des amas de fumier ou de chaux. Si vous ne prenez qu'un échantillon pour un champ, assurez-vous de respecter la proportion de buttes et de dépressions ou les différents types de sol qu'on y trouve. Il est inutile d'essayer de couvrir plus de 25 acres avec un seul échantillon. Si vous subdivisez de plus ... grands champs, faites d'abord vos démarcations le long des anciennes limites de clôtures (afin que l'échantillon soit représentatif des méthodes de culture antérieures), puis selon le relief ou le type de sol. Prélevez toujours des échantillons assez profondément.

• Mélangez soigneusement l'échantillon

Brisez toutes les mottes et mélangez complètement l'échantillon, de manière à ce que le sous-échantillon qui est expédié au laboratoire soit représentatif de ce que vous avez dans votre contenant. Il devrait être aussi long de mélanger l'échantillon que de le prélever.

• Envoyez les échantillons à un laboratoire accrédité

Les laboratoires accrédités du MAAARO sont spécialisés dans les analyses de sol et les résultats qu'ils obtiennent sont vérifiés régulièrement. D'autres laboratoires peuvent

analyser des échantillons de sol à l'occasion, mais ce n'est

pas leur activité principale. L'analyse des sols est une activité complexe et seuls les laboratoires spécialisés sont en mesure d'obtenir des résultats précis de façon continue.

• Insistez pour obtenir des analyses accréditées du MAAARO

La plupart des laboratoires accrédités pour les analyses de sol offrent plus d'analyses que les analyses accréditées du MAAARO, car ils analysent aussi des échantillons qui proviennent de l'extérieur de l'Ontario. Il a été démontré que les analyses du MAAARO sont les plus fiables et les plus précises pour les types de sols que l'on trouve en Ontario. De plus, les recommandations de fertilisation dans les publications du MAAARO sont basées sur ces analyses. Il est donc important de préciser que vous demandez les analyses accréditées du MAAARO pour chaque échantillon.

L'automne est le moment idéal pour les analyses de sol. La température est agréable, les champs se parcourent aisément et vous avez amplement le temps de recevoir les résultats avant le printemps. Cela pourrait bien être votre meilleur investissement.

PROJET DE RÉTABLISSEMENT d'un champ - 13 ans plus tard

par Adam Hayes, spécialiste de la gestion du sol, grandes cultures, MAAARO, Ridgetown En 1991, le personnel du MAAARO a collaboré avec un agriculteur du Middlesex pour tenter de rétablir la productivité de trois vallons érodés dans un champ, par des apports de terre et de fumier. Le champ en question faisait partie du projet Tillage 2000 du MAAARO/ Université de Guelph mis en place à la fin des années 1980. Des rendements de référence ont été enregistrés à divers endroits et ont permis de localiser les vallons les moins productifs. On a transporté de la terre provenant de dépressions avoisinantes jusqu'aux vallons en question avec la chargeuse de la ferme. De 10 à 15 cm (4 à 6") de terre ont été ajoutés, remplissant la moitié des trois vallons. Du fermier a par la suite été ajouté à la moitié supérieure du vallon, ce qui portait le nombre de traitements à quatre.

L'année suivant l'apport d'amendements, une caractérisation du sol a été réalisée sur le vallon le plus érodé. L'analyse a démontré que la couche arable (Ap) était plus profonde à l'endroit où on avait ajouté de la terre, et que la densité apparente du sol était plus faible que dans le sol n'ayant pas reçu de traitement. La structure du sol s'était également beaucoup améliorée.

Les rendements des sections traitées du vallon le plus érodé ont été relevés au cours

Tableau	1. Moyenne des rendements
	en maïs (2 ans)

Traitement	Rendement (boiss./ac)
Témoin (pas d'apport de terre)	97
10 ton/acde fumier (pas d'apport de terre)	138
Terre ajoutée	141
Terre et fumier	146



Fertilisation : à l'automne ou printemps

par Keith Reid - spécialiste de la fertilité des sols/MAAO

Date de création :23 septembre 2004Dernière révision :23 septembre 2004

Chaque automne, on nous demande s'il vaut mieux fertiliser à l'automne ou attendre au printemps. La réponse, comme c'est souvent le cas, est que cela dépend.

Azote

L'azote (N) est le seul élément pour lequel la réponse est claire. Compte tenu des conditions de l'Ontario, les risques de pertes d'azote durant l'hiver sont trop grands pour qu'un épandage automnal soit acceptable, tant sur le plan économique que sur le plan environnemental.

Phosphore

Le phosphore (P) n'est pas sujet aux pertes de la même façon que l'azote, mais quand un engrais phosphoré est appliqué au sol, il commence immédiatement à réagir avec des minéraux dans le sol pour former des composés moins solubles. Cela n'est pas un problème dans les sols fertiles, où la fertilisation vise à maintenir la fertilité du sol plutôt qu'à répondre à un besoin immédiat de la culture, puisque le phosphore qui se trouve immobilisé est compensé par le phosphore libéré par suite d'applications antérieures. Dans les sols très pauvres, toutefois, où l'engrais est épandu en pleine surface, il peut arriver que la quasitotalité de l'engrais se trouve immobilisé sous des formes non assimilables, avant même

la reprise de la croissance au printemps. L'épandage en bandes dans le but de réduire le contact avec le sol contribue à limiter la fixation du phosphore, mais tant qu'à se donner le mal d'appliquer le P en bandes, il est sans doute préférable de l'appliquer comme engrais de démarrage. En règle générale, les applications automnales de P devraient se faire en bandes avec les céréales d'automne, mais il demeure que l'essentiel de cet élément nutritif devrait être appliqué au printemps.

Potassium

Le potassium (K) ne réagit pas autant dans le sol que le phosphore. Dans les sols à texture légère qui ne sont pas travaillés, il peut être avantageux de faire l'application à l'automne, car les précipitations hivernales facilitent la migration du potassium dans la zone racinaire. Dans les sols argileux lourds, l'immobilisation éventuelle d'une partie du potassium entre les couches d'argile peut se trouver aggravée par les applications automnales, du fait que le processus s'accomplit alors sur une plus longue période. Évidemment, il y aura une certaine perte de phosphore et de potassium s'il y a érosion du sol dans le champ.

Temps et machinerie

Le temps constitue l'un des grands avantages des épandages automnaux. Le temps manque toujours au printemps, si bien que l'épandage d'engrais à cette période-ci de l'année pourrait se traduire par une récolte devancée de deux ou trois jours. La machinerie servant aux épandages est aussi plus facile à trouver à cette période de l'année. Il faut toutefois prendre soin de bien inspecter la machinerie au moment d'en prendre possession. Comme la révision de la machinerie se fait le plus souvent durant l'hiver, l'épandeuse qu'on obtient à l'automne a servi toute une saison depuis sa dernière révision complète.

Prix

L'aspect financier des épandages automnaux est plus difficile à prévoir et dépend beaucoup des circonstances particulières de chacun. Il y a souvent un écart de prix entre l'automne et le printemps, mais l'amplitude de cet écart est assez variable. S'il faut emprunter à un taux préférentiel, il faudrait que l'engrais subisse une augmentation de 3 % pour que les frais d'intérêt courus jusqu'au printemps soient récupérés, même en supposant que la disponibilité des éléments nutritifs ne diminue pas. S'il s'agit simplement d'essayer de se protéger contre des augmentations dans le prix des engrais, il faudrait analyser la possibilité de payer d'avance de manière à geler le prix de l'engrais qui sera livré au printemps.

Il ne saurait y avoir une seule réponse satisfaisante en ce qui concerne la pertinence d'appliquer l'engrais cet automne. Il faudra soupeser le pour et le contre avant de prendre une décision définitive.

PROJET DE RÉTABLISSEMENT : d'un champ - 13 ans plus tard

des années suivantes. On peut constater les résultats au Tableau 1.

Le champ n'a pas été labouré depuis son rétablissement. Le producteur a observé que les sections où il y avait eu des apports de terre continuent de donner de meilleurs rendements que les autres sections. À l'automne 2004, un des vallons a été inspecté afin d'y évaluer les propriétés du sol 13 ans après le rétablissement. Voir les résultats au Tableau 2.

Les premiers six pouces avec terre ajoutée étaient généralement plus riches et contenaient davantage de matière organique que les sections n'ayant pas reçu de terre. Les six pouces suivants dans les sections ayant reçu de la terre affichaient des caractéristiques semblables aux sections sans apport de terre et les analyses de sol en témoignent.

Les profils de sol ont été étudiés en même temps que les échantillons ont été prélevés. La dépression possède encore environ 30 cm (12") de sol arable d'un brun foncé, ce qui indique une teneur élevée en matière organique. La section où l'on a ajouté de la terre présente deux couches de sol arable: la terre ajoutée sur 15 cm (6") et la couche arable originale sur 12 cm (5"). La terre ajoutée est d'un brun plus foncé, ce qui coïncide avec les analyses de sol. La section sans où il n'y a pas eu d'apport de terre présente une couche arable d'environ 15 cm (6") d'un brun plus pâle. Le sol de la tournière avoisinante est encore plus pâle et la couche arable a environ 12 cm (5") de profondeur.

Le rétablissement de ce site a permis d'améliorer la qualité du sol et les rendements à long terme. Ce genre de rétablissement comporte toutefois certaines limites, car cela prend généralement plus de terre pour recouvrir les sections érodées que l'on peut en trouver dans les dépression. Il est généralement plus pratique d'améliorer de sol avec des amendements organiques.

Traitement (profondeur de l'échantillon)	рН	Phosphore (ppm)	Potassium (ppm)	Magnésium (ppm)	Matière organique %
Apport de terre (0 - 6")	7,6	23	164	175	5,5
Apport de terre (6 - 12")	7,7	13	81	136	3,7
Pas d'apport de terre (0 - 6")	7,7	12	123	162	3,5
Pas d'apport de terre (6 - 12")	7,7	6	133	187	2,5

Tile Drain Maintenance

As a number of landowners have discovered this year, tile drainage is not a matter of install and forget. In order to keep working at its best a tile drainage system does require some periodic maintenance, particularly of the outlets and related ditches.

The following comments are contained in OMAF Factsheet 90-223 available at: <u>http://www.omafra.gov.on.ca/english/</u> <u>engineer/facts/90-223.htm</u>

"A tile drain outlet must be kept clean and in good condition or the drainage system cannot function properly.

An inspection should be carried out in spring, fall and after severe storms to check for silting, debris, erosion, settlement and misalignment. All problems should be corrected immediately.

It is very important that the watercourse into which the tile outlet empties be maintained in an efficient working condition. Weeds, tall grass, brush, old fences, fallen trees, and any other debris should be removed. If not removed, the water flow is slowed down causing siltation and possible submergence of the tile outlet. Check culverts or bridges downstream for possible blockage and water backup.

Before doing any construction work along a stream or streambank, e.g., installing a tile outlet pipe, contact the Ministry of Natural Resources for prior approval".

Further information on drain maintenance may be obtained in OMAF Factsheets, "Maintenance of the Drainage System", Agdex 553. This factsheet is available at: <u>http://www.omafra.gov.on.ca/english/ engineer/facts/87-062.htm</u>

This factsheet addresses a number of drain maintenance issues. On the topic of ditch maintenance the following comments are found:

"Open ditches can be kept in efficient working condition only by careful maintenance. Trees, brush, and weed growth in the ditch slow down the water, causing excessive silting; this submerges the drain outfalls and reduces the ditch capacity. Trees, weeds, logs, brush, old fencing, and other debris should be cleared from the channel. These are a real hazard where culverts or bridges may be blocked by this refuse.

Burning and the application of chemicals are sometimes effective weed control, but the use of chemicals may create a hazard to livestock that use the drainage water for drinking purposes, or cause pollution downstream. A permit is required for burning and for the use of chemicals.

A good grass sod on the ditch banks will reduce maintenance problems.

Stock should not have access to the ditch either when the banks are saturated during freezing and thawing weather.

The ditch will have to be mowed. Side slopes should be four feet horizontal for each foot vertical. After mowing, the vegetation should be used for hay. If left, it will wash downstream, collect at culverts and bridges, and cause local flooding. Check the ditch banks for erosion. The ditch may have to be widened to decrease velocity, increase capacity, or keeo it on course. Rock gabions or other forms of bank protection may have to be used in critical areas to protect the banks.

When row crops are planted at right angles to the ditch, do not permit individual furrows to drain directly into the main ditch as the water will seriously erode the bank. Collect the water in a small head ditch for disposal into a sodded water-way. Controlling entry of the water to the main ditch in this manner also reduces silting.

Where abrupt changes in grade occur in a ditch, a sod chute, masonry drop structure, or pipe should be used to prevent erosion of the ditch bed."

In order to maintain an outlet one must know where to find it. Outlet locations are indicated on the tiling maps created when the system is installed however not every farmer has the technical equipment necessary to pinpoint the outlet from the mapping information. A low tech

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method of marking an outlet is simply a T - post beside the outlet set deep enough to withstand possible erosion activity in the ditch.

Small signs are also available to attach to the post indentifying the location as an outlet. Some preliminary discussions have been held to arrange for a supply of the identifying signs available to farmers in Northwestern Ontario.

Do you know where your outlets are located?

Roots can also represent a challenge for drainage systems. Some trees such as willows, tamarack, elder, and poplar, will cause trouble if they are within 15 to 25 m of a drain. These trees should be removed or root-proof pipe or tubing used in their vicinity. If roots of trees enter the drain, it will usually have to be dug up, although a sewer-cleaning rod may clear them out. Difficulties with roots occur only in drains that carry water in dry parts of the year.

After the major capital investment that has been made in tile a relatively small investment in maintenance will keep your drainage system operating at its design capacity.

New Factsbeets

05-051: Responsible Disposal Of Unwanted Medicines And Sharps, Agdex 661/400

05-053: Safe On-Farm Storage Of Uwanted Medicines And Sharps, Agdex 661/400

04-097: Anaerobic Digestion Basics (Printed August 2005), Agdex 720/400

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Breaking Ground (in Northeastern Ontario)

On-Farm Funding For Climate Change and Water Supply Projects

ntario farm and agribusiness operators now have access to over \$20 million in their ongoing efforts to care for the health of the environment and reduce greenhouse gas emissions.

The Greencover Canada Program will support projects that enhance biodiversity, prevent wind and water erosion of precious farmland and improve the quality of surface water and groundwater. The Canada-Ontario Water Supply Expansion Program (COWSEP) will help Ontario producers develop, converse and enhance sustainable water supplies.

"The Greencover Canada and Water Supply Expansion programs support the agriculture industry in its longstanding tradition of carefully managing the environment," says Minister Mitchell. "Canadian producers are dedicated to sound environmental practices, and the Government of Canada is pleased to provide strong programs to assist them."

Under Greencover Canada, the Government of Canada will contribute \$15 million in financial and technical assistance to help producers improve water quality in streams, rivers and lakes, adopt sustainable land use practices, reduce greenhouse gas emissions and enhance fish and wildlife habitat.

Producers who have completed an Environmental Farm Plan and identified an eligible project under one of Greencover's Beneficial Management Practices (BMPs) categories may qualify for up to \$20,000 in cost-shared funding to help implement their project. Projects such as establishing buffer strips of permanent vegetation along streams and rivers and fencing to limit livestock access to watercourses will be eligible.

Through COWSEP, the Government of Canada will provide \$5.6 million in technical and financial assistance. Primary producers, agricultural and conservation groups, rural communities and municipalities, agribusinesses and rural enterprises, educational institutions and provincial government agencies and Crown corporations are eligible for COWSEP assistance.

Under COWSEP, three types of projects will be eligible for

assistance: Tier 1 - on-farm water projects; Tier 2 - multi-user water supplies; and Tier 3 - strategic initiatives. The Government of Canada will allocate up to \$2.2 million for each of the on-farm and multi-user programs, and up to \$1.2 million for strategic initiatives. The provincial government will match the federal government's contribution towards multi-user projects over the lifetime of the program.

In Ontario, the Greencover Canada Program and the \$2.2 million on-farm portion of the COWSEP program (Tier 1) will be delivered by the Ontario Soil and Crop Improvement Association (OSCIA) in partnership with the federal and provincial agriculture departments. The OSCIA is also the program delivery agent for the federal government's \$57 million Canada-Ontario Farm Stewardship Program and Environmental Farm Plan programs, which were announced April 16, 2005 and the province's \$20 million Nutrient Management Financial Assistance Program.

The Agricultural Adaptation Council (AAC) will deliver Tiers 2 and 3 of the COWSEP Program.

"Ontario has a great opportunity to realize tangible environmental benefits through COWSEP," says Bob Bedggood, AAC Chair. "Now more than ever, we need to encourage the adoption of sustainable methods for developing and protecting water resources in the rural and agricultural regions of Ontario, and this program will support just that."

Information on the Nutrient Management Financial Assistance Program and application forms for the Greencover Canada, Canada-Ontario Farm Stewardship and the Environmental Farm Plan programs will soon be available from OSCIA at 1 800 265 - 9751 or visit www.ontariosoilcrop.org/EFP/EFP.htm

Announcement to the press by:

Kelly Synnott

Office of the Ontario Minister of Agriculture, Food and Rural Affairs (416) 326-6439

Introduction to the Bio Energy Opportunity For Farm Operators

Prepared by Don Dautovich July 31, 2005

1. The Province of Ontario has released its latest request for proposals (RFP III) to invite proposals for further renewable energy supply. Ontario is short of energy supply and needs to take all steps to makeup for the shortfall. Proposals for the RFP are due December 15, 2005 and contracts for successful proposals will be issued during March 2006. The Ontario Power Authority will award successful proponents a 20 - year power supply contract for power sold to the grid. Energy from biogas through the digestion of manure qualifies for the RFP.

2. Ontario and the federal government have introduced tax based incentives including rapid depreciation of capital expenditures, and the acceptance of flow through share corporations and write off against other income.

3. The federal government has offered a further incentive by making provisions for a 1 cent/kWh incentive over 10 years for renewable energy including bio energy.

The minimum economically viable size digester unit and genset is about 100 kW. The digestion of the manure of about 475 cattle or 2500 pigs or 40,000 chickens could achieve this output. Of course manures can be mixed and plant wastes or vegetation can also be used. Neighbouring farms could also share a single facility on one of the farm properties by transporting manure to the facility. 5. Some farms are currently exploring business of installing an anaerobic digestion system to produce energy through the production of methane from manure, consuming the methane in a special internal combustion engine to drive an electrical generator thereby providing entirely for their own heat and electrical energy needs and selling surplus electricity to the grid.

6. Digestion produces sanitized plant nutrients in liquid or solid compost forms. Studies indicate that plants more easily absorb plant nutrients produced this way than from chemical fertilizers or raw manure.

An Investment Banking Company believes that many of the features associated with the renewable energy projects would be of strong interest to their investor clients. The Company is prepared to work towards providing majority private financing for such projects on mutually favourable terms to both the host farms and to the private investors. Payback of the initial investments is likely in about 7 years.

8. Farm operators are welcome to contact Don Dautovich to learn more about the opportunity of producing energy from manure and other agricultural wastes and how they can participate in the government's RFP III. Don can be reached by email at: <u>dautovic@magma.ca</u> or by phone at 519 270 4514.

Ontario Government Supports Rural Infrastructure Finalizes New Municipal Drainage Funding Program

Minister of Agriculture, Food and Rural Affairs Leona Dombrowsky announced details of the new \$6 million Agricultural Drainage Infrastructure Program (ADIP) on September 22, 2005.

The government has finalized the \$6 million Agricultural Drainage Infrastructure Program (ADIP) under the Drainage Act to encourage the development of agricultural land in an environmentally responsible manner.

The new program includes better defined funding criteria which will maximize the use of taxpayers' dollars by:

- Providing grants to agricultural landowners for up to one third of the costs for new drain construction or improvement projects.
- Covering up to two-thirds of the costs for this work in Northern Ontario.
- Providing grants to municipalities to cover one half of the cost of employing a drainage superintendent.
- Clarifying what parts of a drainage project are eligible for grants.

This program is not intended for drainage projects on behalf of private individuals. Only Municipal Drains within the meaning of the Drainage Act are eligible.

During the fall, ministry staff will be hosting several meetings across the province with municipalities and representatives of the drainage industry to provide details of the ADIP, answer questions and distribute application forms.

In Northwestern Ontario the meeting is scheduled to be held October 18, 2005 at the LaPlace Rendez-vous Hotel in Fort Frances. Start time is 9 a.m.

Soil Pit Revelations

OMAFRA crop specialist, Keith Reid, told the group gathered around the soil pit that their best diagnostic tool for determining the presence of soil compaction is a shovel. His question for them was, "Has anyone dug a pit on his/her own farm to investigate compaction problems?" Reply from someone near the back of the group- "Does tile drainage count?" and Mr Reids response, "Yes. But only if you have your eyes open".

Knowing what to look for is the key. Mr. Reid explained that a plants roots follow a path of least resistance and tend to follow the root channels of previous crops. Normal rooting depth for corn can be 2 to 3 feet. Better rooting



Keith Reid described the many things that can be learned from careful examination of a soils profile.



Soil profile showing 1 foot of silt loam top soil above a slightly reddish layer indicating imperfect drainage.

is achieved if the roots can follow the channels of any crop other than itself. In general deep roots go for moisture and surface roots for fertility.

Commenting on the practice of using deep tillage to correct soil compaction Reid said "it is much like chemotherapy. There will be side affects". He further explained that while the compaction layer may be temporarily eliminated by deep tillage, if management practices are not changed the problem will return and next time will be worse than ever. In his opinion deep tillage is used far to much. In heavy clay soils, soil cracking does the job naturally and more effectively.



OSCIA 2006 ANNUAL MEETING

Date: February 7 & 8, 2006

Place: Sheraton Fallsview Hotel Niagara Fall

Responses to Resolutions

Responses that have been received to the resolutions passed at the OSCIA Annual Meeting held in February are entered onto the OSCIA website.

To access the resolutions on the website, go to www.ontariosoilcrop.org and click on the "Resolutions" button.

Coming Soon - a new look for OSCIA's website...

Watch for a new and exciting revamped website for Ontario Soil and Crop Improvement Association.

Great photos - easy to navigate - a members-only section providing the latest information on technological advances for today's producer.

OSCIA Awards Soil and Water Conservation Farm Award:

The purpose of this award is to recognize, reward, and acknowledge farmers who practice excellent soil and water management on their farms,



as well as provide high profile to the basic principles of conservation. This is a resin all-weather sign measuring 16" x 19".

Recognition Certificate:



This certificate is designed to recognize individuals in your community who have contributed to the organization. When requesting the certificate, please indicate the recipient's name and date of presenta-

tion. This is a paper certificate, suitable for framing, measuring 8 1/2" x 11".

These awards are ideal for presentation at the annual meetings. Both are available by calling Evelyn Howse at the Provincial Office (1-800-265-9751). Please allow 2 weeks for preparation and shipping time.



Message from the President

It is September already - where did the summer go? New continuing high temperature records have been established throughout Ontario, and I am sure that some low rainfall records have been set as well.



Where I live, south of Ottawa, it was a hot summer with adequate rainfall. The wheat crop was average to above average. Soybean and corn yields are expected to be above average, but I do not get too excited until it is all harvested. Less than an hour's drive from my farm, one sees what most of Ontario looks like due to the extreme lack of rain. For example, in Prince Edward County, the wheat yield was less than half of the average yield. This summer, I have been able to tour and attend Soil & Crop meetings in the regions of Eastern Valley, Ottawa Rideau, East Central, Georgian Central, Heartland, Thames Valley and Golden Horseshoe. The lack of rain has impacted parts of all of these regions. However, it is amazing how well many crops have survived under the dry conditions.

As we are into the Fall season, I would ask those of you who have various crop trials and projects on your farm, that after harvest, to input the results as quickly as possible to the appropriate destination, such as the Ontario Field Trials On-line.

Do your best to attend your county annual meeting as much good information is shared by local Soil & Crop members, as well as by OMAFRA, field staff, and guest speakers. Furthermore, it is beneficial to get together with fellow farmers to socialize, encourage and support one another. This is what OSCIA is about - doing various projects and sharing the results. Often we learn something new that can be implemented or incorporated into our farm. Nevertheless, there can be an occasion when a project may not provide the expected results and we learn what not to try on our farm.

As President, I will attend as many local county annual meetings as my schedule permits.

My main goal for OSCIA this year is to increase membership numbers. This is not an easy goal to achieve. Deanna Deaville, our Special Projects Coordinator, John Finlay from OMAFRA, our office staff and the OSCIA Executive have been helping me with ideas on how to achieve this goal. We are making progress and will have some information to share at annual meeting time.

Wishing each of you a good and safe harvest.

Ontario Forage Masters Program

Pickseed representatives are currently tabulating the results of the 2005 Ontario Forage Masters Program.

The local winners will be announced through the local contact person. A chart showing the top three places in each local association will be sent to each participant as well as posted on the OSCIA website.

Deputy Minister Retires

On August 25, over 400 colleagues/friends celebrated the retirement of Dr. Frank Ingratta, Deputy Minister of Agriculture, Food and Rural Affairs. Frank's career spanned 33 years with the ministry. Frank served a brief term as ex-officio on the Board of OSCIA. We wish Frank all the best on his retirement from the ministry.

OSCIA Grant Application Deadlines

The deadline for submitting the 2005 Grant Applications (claims) to the provincial office is November 30, 2005

Although the deadline is a few weeks away, local and regional associations are encouraged to submit applications (claims) for projects that are complete.

OSCIA Summer

Directors' Meeting

The OSCIA Summer Directors' Meeting was hosted by 1st Vice President Keith Black on August 28-30. Keith and his wife Barb, along with daughters Vicky and Heather organized three days' events for the OSCIA Directors and their families in Huron County.

The Directors held their business meeting on Monday while the spouses, past presidents, and families toured the local area.

Local association executives are encouraged to keep in touch with their provincial director so that updates can be communicated to the membership.



Pat Lee, Alvin Brooks, Allan & Betty Brown are shown by their tour guide the many types of beans processed by the Hensall District Co-operative, which was one of the stops on the bus tour.

Breaking Ground (in Northeastern Ontario)



Highlighting Research at the University of Guelph

This article is the first of a series providing information on current research at the U of G. This article has been prepared by a student writing program in the Office of Research.

Phosphorus in phytate from grain-based pig feed doesn't dissolve well in water. Instead, it attaches to clay particles and accumulates in soils in a way that's unavailable to plants. Erosion and runoff from farms puts this phosphorus-rich mud into waterways, causing eutrophication (lake aging due to excess nutrients) that results in algae overgrowth, lower oxygen content and fish skills.

And phytate is a problem for pigs, too: it prevents the digestive tract's absorption of minerals such as calcium, iron, zinc and potassium. Farmers often supplement feed with extra minerals, but it's expensive and can cause undesirable side effects, including excess acidity, poor absorption and ulcers. These minerals can also pass through pigs, ending up on land and in waterways.

Dr. Duane Falk, Department of Plant Agriculture, hopes that low-phytate barley - created by the United States Department of Agriculture - can alleviate these phosphorus woes. There are still problems, though. Currently, low-phytate barley seeds usually contain hulls (seed coats), which drag down nutritional value because they don't provide much energy or protein. Hulls also take up space, so barley with hulls is more expensive to process, transport and store.

That's led Falk to try breeding the lowphytate character into barley without hulls. To do this, he's identifying highyielding hullness barley types with low phytate levels. By measuring levels of soluble phosphorus in seeds, he can figure out the phytate content.

Researchers elsewhere have also produced low-phytate corn and soybeans. Falk says barley stands out because its low-phytate varieties don't experience the loss of vigour or growth as corn and soybeans do.

"Soon we'll use this barley for pigs," says Falk. "But eventually it may be suitable for cattle, turkey, chicken and even people."

Other approaches to phytate control include supplementing feed with phytate - a naturally occurring enzyme that breaks down phytate - and developing animals (such as the Enviropig, which was created by University of Guelph researchers) with phytase in their saliva.

Falk is collaborating with Prof. Kees de Lange, Department of Animal and Poultry Science. This research is sponsored by the Oat and Barley Council of Ontario and the Ontario Ministry of Agriculture, Food and Rural Affairs.



Prof. Duane Falk, Department of Plant Agriculture, is working to improve barley for better animal health.

Breaking Ground

(in Northeastern Ontario)

AN...ND HERE'S THE PITCH!!!

Grabam Gambles, NEOSCIA Communications Coordinator

OK

You've read this bulletin cover to cover. Is it worth \$10.00 to you? Remember, there are still 3 more issues to come before we are back to beg at your mailbox!

As we said on page #1. Times have changed. This newsletter is no longer a "Freebee" from OMAFRA. If you are to continue to receive "Breaking Ground", then you must be a MEMBER of the Ontario Soil & Crop Improvement Association. Half of the \$10.00 fee goes to the Provincial OSCIA office at Guelph while the other half stays at your local District level.

Interestingly enough, none of your \$10.00 comes directly to this newsletter. About 50 % of the costs are paid by the head office while the rest is covered by advertising and from donations by supporting organizations within the farm community.

So if I've convinced you to cough-up \$10.00, send your cheque to the Soil & Crop Secretary-Treasurer in **YOUR** District:

Algoma:	Murray Cochrane, RR#1, Thessalon, P0R 1L0
Cochrane (North & South):	Jack Mann, Box 1441, Cochrane, P0L 1C0
Manitoulin:	Wendy VanEvery, Box 25, Gore Bay, P0P 1H0
Muskoka:	Ken Riley, RR#6, (1375 Butter & Egg Rd.) Bracebridge, P1L 1X4
Nipissing:	Gilles Renaud, 1175 Stewart Rd., Cache Bay, P0H 1G0
Parry Sound:	John MacLachlan, Box 454, Sundridge, P0A 1Z0
Sudbury:	Mario Seguin, 85 Montee Guerin, Noelville, P0M 2N0
Temiskaming:	Morley Shepherdson, Box 1594, Temiskaming Shores, POJ 1PO

If you don't think that this newsletter is good value for your \$10.00, please pass this issue on to a neighbour / relative / friend / enemy, rather than lining the bottom of the bird cage!

Also, please fill in the following subscription form and send it with your cheque so that we can send the next newsletter (pre-Xmas) to you. (Remember, NEATNESS counts!)

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-mail: (ONLY if you want your bulletin delivered by internet)	

Occupational Health and Safety On Farms

To help enhance health and safety on farms, the Ontario government has made a regulation to bring farming operations under the Occupational Health and Safety Act (OHSA). The regulation will come into effect on June 30, 2006.

Paid farm workers, both domestic and foreign, will now have the same basic health and safety rights that are already given to other Ontario workers employed in provincially-regulated workplaces. Farms operated by self-employed individuals without paid workers will continue to be exempt from the OHSA.

Rights and responsibilities

As a result of the regulation extending coverage of the OHSA to farming operations, certain rights and responsibilities will apply to both employers and farm workers.

For example, employers will have the duty to:

- Take every reasonable precaution to protect workers
- Provide information, instruction and supervision to workers
- Notify workers and supervisors about hazards in the workplace
- Notify the Ministry of Labour of workplace fatalities and critical injuries
- Cooperate with the workplace joint health and safety committee or the worker health and safety representative and respond to recommendations.

Paid farm workers would have the duty to work safely, in accordance with the act and regulations.

They would also have basic rights, including the right to:

- Participate in decisions about workplace health and safety, through either a joint health and safety committee or a worker representative
- Know about workplace hazards to which they are exposed
- Refuse unsafe work.

In addition, where required, specially trained and certified members of a joint health and safety committee will have the right to stop work in dangerous circumstances.

For more information visit the Ontario Farm Safety Association web site at http:// www.farmsafety.ca/ohsa.shtml

Looking for more information? Visit the OMAFRA website at http://www.omafra. gov.on.ca or the Business Development site at http://www.omafra.gov.on.ca/ english/busdev/agbusdev.html