



Breaking Ground

(in Northeastern Ontario) Spring 2014

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

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Lifetime Achievement Winner John Rowsell, North Eastern Region



John was born and raised in Kitchener. His friends questioned why a city kid would attend an agricultural university. His reason was simple: people have to eat so it seemed like a secure career move.

He graduated from Guelph in 1977 majoring in Soil Science and again with a Master's degree in 1980. He moved to New Liskeard in 1979 to take a contract teaching job at New Liskeard College of Agricultural Technology (NLCAT). He succeeded Walker Riley in that position and had Walker, Alex Skepasts and Al Francis as his mentors. The first graduating class he taught made themselves known as the 'Animals of '80'. Their hijinks could fill several volumes.

His spouse, Becky Hughes, joined him at NLCAT in 1980 and they have been in New Liskeard since. A couple of years ago, John asked the former mayor of Timmins if living in the north more than 30 years and over half of one's life made them a northerner, to which Mr. Vic Powers dryly responded "Well it's a good start."

John's research pursuits were mostly in the area of soil fertility; however, it grew to include cultivar evaluation and agronomic practices for most of the crops grown in the north. Diversification of the crops grown was always a priority and led to projects on such things as hybrid poplar and miscanthus.

John served on many research, service and recommending committees including the Ontario Soil Management Research and Service Committee, the Ontario Soil, Water and Air Research and Services Committee, the Ontario Forage Committee and the Ontario Cereal Crops Committee. As chair or secretary of some of these committees, he recognized the dedication of the OSCIA representatives thereon. They could always be counted on to be there and to participate actively. Gerald Beaudry, Mac Emiry, Larry Lamb and Don Oliver stand out in his memory.

John retired in February of 2013. He now serves as 1st Vice Chair of the hospital board and Treasurer of South Temiskaming Community Futures Development Corporation. His spare time is taken up by photography, learning Spanish, two Corgis and providing domestic support for his spouse of 35 years, Becky Hughes.



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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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NLCAT reunion

It has been twenty years since the New Liskeard College of Agricultural Technology closed. Many of the 800 alumni and staff have been requesting a reunion in 2014. NLCAT Alumni President Don Leggett, Jean-Denis Methot and Candy Keith have volunteered to plan the week-end of August 15-16, 2014. This is a once in a lifetime opportunity to get together once again in New Liskeard (Temiskaming Shores) with many fellow alumni and staff.

Dymond Hall has been booked for the Friday night reception and cash bar, starting at 8 pm, and the Saturday night Banquet and cash bar (6 pm). Gisele's Catering, who ran the College cafeteria for years, will provide finger food for the Friday night reception and a choice of roast beef or roast chicken dinner on Saturday night. NO TICKETS WILL BE SOLD AT THE DOOR. The 2-day reunion package (Friday night reception and Saturday night Banquet) is \$60/person. No tickets sold for one night only. Deadline to buy tickets is Thursday July 31, 2014.

Suggested optional activities: Tour of New Liskeard Agricultural Research Station, Friday afternoon at 1:30-4:30 pm. Meet at the former teaching arena parking lot. New Liskeard Farmers Market (Riverside, Saturdays, 8 till noon); Saturday Team Penning Event sponsored by Northern Ontario Cow Horse Association at Cougar Ridge Farms on Greenwood Bridge Rd. in Thornloe, starts at 10:00 AM; Sunday Morning Brunch (participants plan for the brunch amongst themselves); the Steak Villa Restaurant, Temiskaming Mall, has a Sunday brunch from 10 am to 1:30 pm; Foire Gourmande open August 15-17, in Ville-Marie, where visitors get to taste food from north western Quebec and North eastern Ontario.

A block of 25 rooms has been set aside at the Quality Inn, 705-647-7357 @\$120/night for a standard room, non-smoker (1-2 persons). A block of 10 rooms has been set aside at Econo Lodge 705-647-6705; standard room (1-2 persons) @ \$109/night. Both blocks

are under the name NLCAT reunion. There are other interesting options under the following link, Accommodations: <http://www.temiskamingshores.ca/en/>



Name: _____ Address: _____

Phone number: _____ E-mail address: _____

Week-end (Friday night & Saturday night) \$60 per person: \$ _____

SATURDAY BANQUET DINNER (you must choose either roast beef or roast chicken)

persons roast chicken dinner _____ # persons roast beef dinner _____

If you have an allergy, please notify us with the specifics.

Cheques to Don Leggett,

mailed to Candy Keith, 450 Ethel Street, Box 586, Haileybury ON P0J1K0

Please consider your cancelled cheque to be your receipt.

Breaking Ground (in Northeastern Ontario)

Earlton Farm Show 2014



Earlton Arena

Friday April 11th, 10 am to 9 pm

Saturday April 12th, 7 am to 4 pm

Free Admission (please bring a donation for local food banks)

Join us on **Friday** from 11:30 am to 1:30 pm for a **KICK OFF LUNCH** including a buffet of salads, sandwiches, soup, desserts, tea and coffee. **Only \$5.00 !**

Lunch sponsored in part by **Pioneer** and **Bayer Crop Sciences**

View the annual Forage and Seed Show – students art show, and over 60 exhibits downstairs! **Interactive grain display for children and small animal displays.**

Two **live auctions** each day – come bid on farm equipment and supplies contributed by exhibitors. See reverse for partial auction list

Friday at 3 pm and 8 pm – Saturday at 11 am and 3 pm

New this year **YOUTH AG TALK – NORTHEAST** Friday at 6 pm



Graydon Bowman Memorial Breakfast

Sat. April 12th, 7:30 am to 9 am

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Breakfast sponsored by



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Friday 1 pm

Saturday 9 am

Saturday 10 am

Saturday 11 am

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Auction Items (partial list)

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Earlton Construction Solutions	Cement Mixer
Pickseed	2-\$150.00 gift certificate
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Agrione	4 pails Ag 300 and 4 pails Organo Hume
Northern Feeds	6 ft heavy green gate
Optimum Agri	Manual Bale Carrier, heavy Duty 4 wheel steer and brake (Big square bale carrier)
Pedersen Concrete Ltd.	8 Cm of ready mix delivered in the Tri-Town, Earlton, Englehart or Chamberlain area
Select Sires Canada	5 doses Dempsey Semen
Other item supplied with funds from Cash Sponsors to be announced	2-21' multipurpose extension ladders 9 hp Honda hydraulic self contained power pack good for wood splitter, grain & fertilizer wagon, etc.

Many more items still coming



Northern Ontario Farm Innovation Alliance March Update

Welcome to the First Monthly Update of Northern Ontario Farm Innovation Alliance (NOFIA). It is the intention of the Board of Directors to provide a monthly electronic update to our supporters and those interested in encouraging agricultural research and innovation in Northern Ontario.

HISTORY

In 2012 local farm leaders from the District of Temiskaming met with FedNor to discuss the needs of agriculture in Northern Ontario. When it became apparent that the New Liskeard Research Station (NLARS) was being considered for closure, the

Continued on page 30

Grass Fed Beef Production

New Liskeard Agricultural Research Station (NLARS)

Grass fed beef includes animals fed forages (hay, silage or pasture) from weaning through finishing. Various plant species can be used (grasses and legumes). They will vary in nutrient composition, based on species, maturity and storage methods.

NLARS conducted a Pasture Finishing Trial in 2007 which compared grass versus alfalfa pastures on specific growth performance and carcass traits. 40 Angus and 40 Hereford yearlings were allocated equally to 3 treatments of grass pasture, alfalfa pasture, and a high grain diet consisting of 85% whole shelled corn.

The results of the trial were as follows:

Control Group	AVG hg/day	Marbling
Grass Fed	1.27	53.8% A 34.6% AA 3.8% AAA
Alfalfa Fed	1.33	45.5% A 40.9% AA 4.5% AAA
Grain Fed	2.02	7.1% A 50% AA 42.9% AAA

A Forage Finishing Trial was conducted at both NLARS and KARS during the summers of 2010 and 2011.

50 Angus and 50 Hereford steers per site were allocated to 4 different management regimens. Forage finished cattle were fed a mixture of pasture (Alfalfa at NLARS and Reed Canary Grass at KARS), forage silage, and hay with an 85% corn ration fed for comparison.

Results for both sites were as follows:

KARS (Canary Reed Grass)	Pasture	Hay	Silage	TMR Grain Ratio
Net Energy(Mcal/kg)	0.92	0.95	0.86	1.66
Protein %	11.9	9.7	16.2	13.1
ADG (kg/day)	0.84 kg/day	N/A	0.85 kg/day	1.46 kg/day
NLARS (Alfalfa)				
Net Energy (Mcal/kg)	0.94	0.81	0.88	1.63
Protein	18.6%	13.4%	17.5%	12.4%
ADG (kg/day)	1.08 kg/day	1.04 kg/day	0.96 kg/day	1.82 kg/day


The full report on Grass Fed Beef Production written by Ira Mandell from the Department of Animal and Poultry Science at the University of Guelph is available by contacting Hal Brown, Farm Coordinator at NLARS by email at habrown@uoguelph.ca.

Kapuskasing Agricultural Research Station (KARS)

The management of pasture, quality of cattle and quality of stored feed had a large impact on the year to year differences at NLARS. For example, ADG on corn was 1.73 kg/day (2010) versus 1.87 kg/day (2011). Pasture ADG was 0.97 kg/day (2010) versus 1.15 kg/day (2011) and silage ADG was 0.92 kg/day (2010) versus 0.99 kg/day (2011). Hay had the largest variation, with almost double the gains, 0.72 kg/day (2010) to 1.4 kg/day (2011) due primarily to great quality second cut alfalfa hay in the second year. Beef quality information is also available.



It was not surprising that grain fed cattle outgained forage fed cattle with heavier carcasses. However, more fat resulted in less retail meat yield. Cattle finished with grain do have somewhat better beef flavor, tenderness and juiciness scores when evaluated by a trained taste panel. However, these differences cannot easily be detected by most consumers. The production of niche market beef requires producers to evaluate how their product is processed and marketed to attain the best possible returns.



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 – Jesse Louis Jackson

"Courage is being scared to death - but saddling up anyway."
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"If you don't know where you are going, any road will get you there."
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"Man is still the most extraordinary computer of all."
 – John F. Kennedy

"The minute you start talking about what you're going to do if you lose, you have lost."
 – George Shultz

"Let no one ever come to you without leaving better and happier."
 – Mother Teresa




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Soil Health: *Gaining New Life Through Cover Crops*

by Dan Towery, Crop Consultant, Indiana



To remain sustainable over the long term, the farm soil must become more resilient by increasing the rooting zone depth, maximizing biological activity, and adding moisture holding capacity. Ideally, this is achieved by minimal soil disturbance (top 2"), permanent soil cover, a living root area, and by keeping something growing on the land EVERY day of the year. The use of cover crops with dominant rooting systems (such as annual rye grass) can achieve this.

Reduction in frequency and depth of tillage is critical as we now know that the root systems of cash crops only explore about 1% of the soil volume. However, associated mycorrhizal fungi that thrive in undisturbed soil can increase the range of the cash crop root to effectively cover 20% of the soil volume. Reduction in tillage frequency and depth improves the overall soil biology over a NUMBER of years.

An increase in "Soil Reactive Carbon" over 3 to 5 years improves soil aggregation and thereby increases soil infiltration. Severe compaction in a localized area can be achieved with a ripper, but an improvement over a whole field requires the use of a cover crop such as red clover for 2 or 3 years. This is especially important in "cold" soils, as improved infiltration of rainwater allows for earlier warming of the soil. Note that root systems of cover crops are chiefly responsible for an increase in soil carbon. It can take 20 years to improve the Organic Matter from 2 to 4%, while still maintaining a positive yield.

Every region and soil type needs focussed field research to develop an information package on cover crop varieties, planting dates, seeding rates, etc. to match the primary production crops in that area. These are medium term trials as it takes 2 to 3 years to get associated yield increases.

Compiled by Graham Gambles, RCC for NEOSCIA.

Northern Lights Food Marketing

By Graham Gambles, Regional Communication Coordinator, NEOSCIA

The Elk Lake Eco Centre was the scene for a small conference on "Processed Food" opportunities here in the North-East on Feb. 28. Other than a few endeavours such as the former pea canning factory in Temiskaming (more than half a century ago), the long-serving Thornloe Cheese Factory, an extensive line of maple syrup producers, and the Boreal Winery, recently established near Warren, there are very few regional examples of moderate scale food processing. Most examples of northern food conversion orient toward smaller scale local Farmer's Markets.

Our northern agricultural economy is based primarily on commodity production, be it cash cropping, dairy, or beef production. As in mining and forestry, a bulk raw product is shipped beyond our region for end processing. Northern Lights Regional Foods, based in Haileybury, is encouraging the farm community to look at food processing as a way to expand the northern infrastructure. The Elk Lake event offered potential processors the opportunity to learn about food marketing and nutritional labelling.



Mark Venton, known for his "Fire In The Kitchen" line of spices, spoke on the 4 components of the basic marketing module. Part 1 is the ASSESSMENT of the landscape. Research your current competition through a market analysis to identify current challenges and future potential. Also do a consumer analysis to discover the needs of the buyer. Then analyze your personal strengths and weaknesses, opportunities, and threats to success. Develop your business plan and identify the profit margin.

Second, identify WHO is your target consumer. Study their demographics, behaviour, how that consumer thinks, and then take action to expand the number of targets. Look to the internet to help you with this one! There are hundreds of FOOD BLOGGERS out there who are willing to assist you for free. Remember that they could become your first consumers, and appreciation by them can spread

rapidly through social media, leading to significant initial sales by internet and courier delivery.

Third, define WHAT you want your brand to stand for in the mind of the consumer and decide how to set your brand apart from the competition. Be willing to spend money on a marketing specialist. There are government sponsored grants available to assist in hiring such an individual. Packaging is critical for grocery shelf sales, as it is the quality of the label that can make that first sale.

Finally, decide HOW you will communicate with your targeted consumer. Here, you must learn to engage your client at an emotional level. In a few words, (that can be put on a label), identify what is the key benefit of your product, AND give the consumer a reason to believe that what you claim is true.

Chef Daniel Esposito was the second guest speaker and he focussed on the development of NUTRITIONAL LABELS for processed products. He first reviewed the trends for winners and losers in the food industry to the year 2020. In fresh meat demand, the future is bright for producers of lamb, goat, game, chicken and fish, while beef consumption could drop by 14%. Ice cream consumption could drop by 50%! This is offset by an expected huge increase in demand for frozen fruit (40%) and frozen vegetables (35%).

Esposito's primary comments were directed toward the new "NutraCoster" computer software that can be used for Nutrition Analysis and Nutrition Facts Labelling. To meet the demands of both the public and the government for greater awareness of nutrition facts, this aid provides a database for the nutrient information of over 7000 common ingredients. The software is described as a "powerful tool for analyzing recipes and formulas. It allows you to precisely calculate nutrition, material costs, labor costs, packaging costs, and overhead costs." You can find all the details on this software on the internet. Note that this program can evaluate a full meal (such as a "Golden Beef" cheeseburger) as easily as it defines the contents of a jar of jam, and that may be a boon to the regional restaurant industry.

For more information on "Northern Lights Regional Foods", contact Maurice Landriault at 705-672-5161 x228, or e-mail him at lan098@ntl.sympatico.ca (www.northernflavours.ca).



CROP TALK

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Publication Order Centre: 1-888-466-2372

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Wheat Nitrogen Strategies

by Peter Johnson, Cereal Specialist OMAF and MRA

Wheat yields pushing 150 bu/ac are very possible with good management and increased nitrogen (N) rates.

Recent research clearly shows an interaction between fungicides and nitrogen. But high nitrogen rates immediately raises questions about lodging, nitrogen source, and application timing. Wheat's nitrogen demand is much earlier than corn, so nitrogen management needs to be different. What is the right rate, and are there any strategies that might help get those monster yields, without breaking the bank?

Rate Without Fungicides

90 lbs N/acre and full stop! You will never achieve big wheat yields under Ontario weather conditions without fungicides, so you might as well pull in your horns and let the real wheat growers pass you by.

Rate With Fungicides

120 lbs N/acre is the base rate. In over 50% of our trials, the most economic rate of nitrogen (MER-N) pushed very close to 150 lbs N/acre. However, 150 lbs/ac N added only a small increase to the bottom line, so if you are afraid of lodging, go slowly. Try just 2 or 3 strips in the field at 150 lbs/ac, with the balance at 120 lbs/ac, until you learn how to keep rates high and that there is more yield there, without having flat wheat.

Rates and Rotation

Wheat after peas or very early planted wheat with high plant populations should have lower N rates. Pea nitrogen releases perfectly for wheat, meaning that 60-90 lbs N/ac acts like 120-150 lbs N/ac. Early planted, thick wheat has higher lodging potential, and 120 lbs N/ac may make it go flat. Proceed with caution.

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Wheat Nitrogen Strategies

Continued from page 7

Source

Trials over the past several years have shown little impact of N source on yield. 28% or 32% liquid sources have consistently shown a small (2.5 bu/ac) yield advantage over dry, due mostly to more even distribution.

ESN, Agrotain Plus®

ESN has shown no yield advantage in winter wheat, but has provided a boost in protein. Agrotain Plus® actually decreased yields when nitrogen applications were delayed by weather into mid-May. Agrotain Plus® may have a fit with early nitrogen applications, but should not be used on later timings. ESN has a fit as part of the nitrogen blend on hard wheat, but only when protein brings added value. The jury is still out on whether to buy these “protected” N products, or just spend the extra dollars on more nitrogen.

Sulphur

The need for sulphur (S) has not been as consistent as expected when the deficiency first showed in 2011. When it occurs, the response stops at 10 lbs S/acre. To date, the best general recommendation is to add 10 lbs S/ ac (40 lbs/ac ammonium sulphate or 3 gal/ac ammonium thiosul) as an “insurance” policy, and do trials on each farm to find responsive and non-responsive fields. There is no slam dunk that added sulphur will pay.

Single Applications

Time single applications for late-April. This avoids significant N loss concerns from wet soil conditions that might occur earlier, while providing N when the crop demand goes high. However, large single N applications increase lodging concerns.

Split Applications

Yield increases with split N applications have been seen, but are not consistent. Other considerations drive split N applications more than yield. Reduced concerns over N loss, better weed control from crop competition, more uniform heading and less lodging all accrue from split applications. Apply 50-80 lbs N/ac as early as possible (on frost), with the balance at the first to second node (May 10th).

Wheat is the most responsive crop to management that we grow. Added attention to detail will give higher yields. With good management it is possible to eliminate lodging yet achieve very high yields. Whatever strategy you chose, you will be rewarded according to the amount of effort you put into the crop. Manage the crop, and be a REAL wheat grower!

Validating Sulphur Rates and Sources for Alfalfa in Ontario

by Bonnie Ball, Soil Fertility Specialist & Brian Hall OMAF and MRA



Figure 1 - Response of alfalfa to sulphur application / (100 lb S/ac elemental to right of stake)

Alfalfa has the highest sulphur (S) requirements of any of the field crops. A 5 ton/ac crop of alfalfa removes about 25 lbs/ac of sulphur. By comparison, a 45 bu/ac spring canola crop, also a high user of sulphur, removes 15 lbs/ ac. A 150 bu/ac corn crop removes 10 lbs/ac of sulphur.

In Ontario, sulphur deposition from acid rain has decreased steadily. The amount of S deposited has decreased by over 50% since 1990. Instances of S deficiency have also increased due to reductions in the organic matter pool, higher crop yields and higher protein yields. S deficiencies in alfalfa are more likely to occur on soils that have not had a manure application within 2 years.

S Tissue Testing In Alfalfa

There currently is not a reliable soil test for sulphur in Ontario. However, tissue testing of alfalfa (at late-bud stage) is considered a suitable diagnostic approach for determining sulphur deficiencies. The critical level below which alfalfa is considered S deficient and may benefit from applying sulphur is 0.25%. A 2012 field survey of Ontario alfalfa stands (Figure 2) indicated that 21% of fields had S- tissue analysis below this level. Put another way, 79% of these fields would have been unlikely to have an economic response to applying sulphur. It is also noteworthy that 37% of these fields tested below the critical K value of 1.7%.

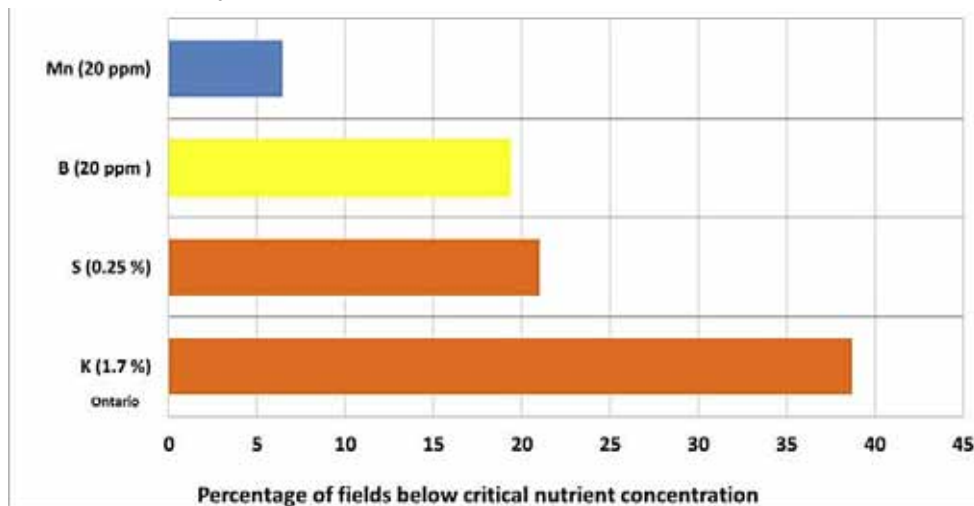


Figure 2 - 2012 Tissue Sample Survey of Nutrient Deficiencies in Ontario Alfalfa Fields

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Why Pre-Plant Herbicides Are So Critical In Soybean Production

by Mike Cowbrough, Weed Specialist OMAF and MRA

If you grow soybeans and have Canada fleabane, common ragweed or giant ragweed growing in your fields, the use of pre-plant herbicide tank-mixes will be your best chance at achieving good control of these weeds.

Management options for these three weeds are either limited or do not provide acceptable control once the soybean crop has emerged.

Why are these weeds so difficult to manage?

Populations of all three species exist in Ontario that are resistant to glyphosate. In addition there are also populations of Canada fleabane and giant ragweed resistant to FirstRate (cloransulam) and Classic (chlorimuron).

Canada Fleabane (also known as Mare's Tail and Horseweed) Table 1 Herbicide Control)

- Figures 1-3
- 12 Counties in Ontario have glyphosate resistant populations (Figure 4)
- 12% of confirmed glyphosate resistant sites in Ontario were also resistant to "group 2" herbicides (e.g. FirstRate) and occur in six counties (Figure 4).
- Tall plants (1.5 m (4'-6") or higher) can produce over 200,000 seeds
- Majority of seeds (~80%) will germinate upon dispersal.
- Seeds are air born and will move several hundred metres.
- Table 1—Herbicide Control



Figure 1 - a small seedling fleabane plant shown in mid-September.

I heard Sencor (metribuzin) was effective on fleabane.

Why isn't it included in the Table 1?

The 600 g/acre rate of Sencor 75DF (metribuzin) provided exceptional control in Dr. Sikkema's trials. However, this is the highest label rate and can cause significant crop injury and yield loss if used on high risk soils (low organic matter, coarse textured). Efficacy of Canada fleabane with lower rates of metribuzin have not

been evaluated in Ontario. However, Eubank et al., 2008 used the equivalent of 225 g/acre of Sencor 75DF and observed Canada fleabane control that ranged from 53-73%.



Figure 2 - A Canada fleabane rosette in late-May. This is beyond the ideal stage to effectively manage with either herbicides or tillage.



Figure 3 - A 2 leaf giant ragweed seedling

- Giant Ragweed**
- 7 Counties in Ontario have glyphosate resistant populations (Figure 5)
 - 6% of confirmed glyphosate resistant sites in Ontario were also resistant to "group 2" herbicides (e.g. FirstRate) and occur in 3 counties. (Figure 5)
 - Considered one of the most competitive species in Ontario.
 - Female plants (seed producing) are wind pollinated by male plants.
 - Wind born pollen can travel several kilometers.
 - Figure 6
 - Table 2 Herbicide Control



Figure 6 - A giant ragweed plant past the ideal stage for control with a herbicide.

Pre-plant management options for Canada fleabane:

Table 1: Visual control of glyphosate resistant Canada fleabane when herbicides with different modes of action were tank-mixed with glyphosate and applied prior to planting soybean.

Glyphosate tank-mix partner	Rate %	Control
Eragon + Merge	14.4 g + 0.5% v/v	98
FirstRate*	17 g/ac	95
Amitrol 240**	3.3 L/ac	93
2,4-D LV Ester 700**	0.32 L/ac	86
Liberty	1 L/ac	75

* populations of Canada fleabane are also resistant to this herbicide.

** must be applied a minimum of 7 days prior to planting

Data courtesy of Dr. Peter Sikkema, University of Guelph (Ridgetown Campus)

Pre-plant management options for giant ragweed:

Table 2: Visual control of glyphosate resistant giant ragweed when herbicides with different modes of action were tank-mixed with glyphosate and applied prior to planting soybean.

Glyphosate tank -mix partner	Rate	% Control
2,4-D LV Ester 700**	0.32 L/ac	96
Amitrol 240**	3.3 L/ac	91
Eragon + Merge	14.4 g + 0.5% v/v	87
FirstRate*	17 g/ac	84

* populations of giant ragweed are also resistant to this herbicide.

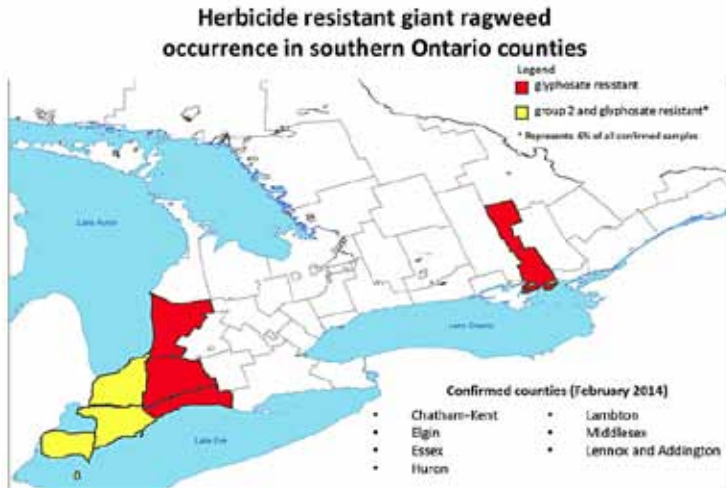
** must be applied a minimum of 7 days prior to planting

Data courtesy of Dr. Peter Sikkema, University of Guelph (Ridgetown Campus) and is based on 7 studies, except FirstRate data which was based on 8 studies

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Why Pre-Plant Herbicides Are So Critical In Soybean Production

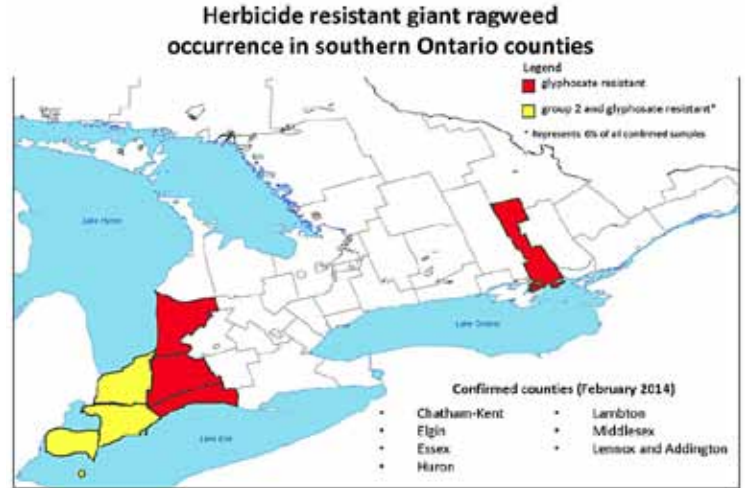
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Source: Dr. Peter Sikkema, University of Guelph

Prepared by: Mike Cowborough, OMAF/MRA

Figure 4



Source: Dr. Peter Sikkema, University of Guelph

Prepared by: Mike Cowborough, OMAF/MRA

Figure 5

ACKNOWLEDGEMENTS: The research conducted by Dr. Sikkema's lab could not have been done without the assistance of Chris Kramer (research technician), and current and former graduate students Holly Byker, Laura Ford, Joanna Follings and Joe Vink.

Funding for this project was provided by the **Agricultural Adaptation Council**, **Monsanto Canada** and the **Grain Farmers of Ontario**

Lystek—Introducing a New Organic Amendment

by Christine Brown, Nutrient Management Specialist OMAF and MRA



For crop producers looking for a balanced nutrient source that also contains some organic matter, a new bio-fertilizer source has been introduced. From a nutrient content it is similar to liquid hog manure and provides available N-P205 -K20 (in year of application) of about 30 – 27 – 31 lbs / 1000 gallons. It also contains micro-nutrients, including about 10 lbs of sulphur / 1,000 gallons, and about 5% organic matter.

What is Lystek?

Lystek is a processed liquid biosolid that is registered through the Canadian Food Inspection Agency (CFIA) and is treated as a commercial fertilizer product.

- pH of 9.5
- Patented process that combines sewage

biosolids + potassium hydroxide + heat (70 °C) + a lysing process

- CFIA registered – pathogen free (no NMP or NSAM plan is required)
- 12 – 13 % dry matter (lysing process makes it more watery and less viscous than dairy manure at the same DM content)
- About 30 – 27 - 31 lbs / 1,000 gal of available N-P205- K20 in year of application (providing a fertilizer value without the value of micro-nutrients of over \$ 50 / 1,000 gallons)
- \$12.50 / 1,000 gal delivered and applied
- The main plant is in Dundalk, with facilities in Elora, Guelph, St Marys and Iroquois

The material is hauled and applied at a rate between 3,000 and 4,000 gal/ac. The ammonium-nitrogen content is high, so injection or immediate incorporation is important to avoid N loss through volatilization. The cost of application is included in the product price.

Where is the best fit for Lystek?

As with any nutrient or material that is similar to liquid manure, the best fit is when it is applied to a growing crop or

just ahead of a growing crop. Lystek applied just ahead of, or into standing corn will provide the majority of required nutrients for the crop. When Lystek is applied after wheat harvest, a cover crop will help utilize the nutrients to avoid losses.

Although Lystek includes biosolids and has some organic matter, the processing of the material makes it different from livestock manure. The organic matter will provide carbon for soil organisms and will benefit soil health, especially when combined with a wheat or forage based rotation and/or cover crops. The heating and high pH does limit the microbial population in the Lystek. The material provides about 40 lbs of calcium / 1,000 gallons, but is not marketed as a liming source for low pH soils due to the buffering capacity of most soils.

Anyone interested in this material as part of a side-by-side comparison to regular fertilizer program is invited to participate in an OSCIA study (contact christine.brown1@ontario.ca).

For product information, contact Mike Dougherty, 519-923- 3539 mdougherty@lystek.com

What Rate of S?

A general thumb rule for S application on alfalfa is 5 lb/ac per ton of dry matter yield. The University of Wisconsin recommends 15 – 25 lbs/ac of S in the sulphate broadcast on established stands, or 25 – 50 lbs/ac of elemental S incorporated at seeding. Research is required to verify these numbers in Ontario.

What Form of S?

What is the most economical source of S to use with alfalfa? The sulphur must be in the sulphate form to be usable by the plant. Sulphate fertilizers include:

- ammonium sulphate (34 - 0 - 0 - 24)
- potassium sulphate (0 - 0 - 50 - 18)
- sulphate of potash magnesia (aka Sul-Po-Mag, or KMag) (0 - 0 - 22 - 20)
- calcium sulphate (0 - 0 - 0 - 17)

Elemental sulphur, rather than sulphate, could be a good fit for forage stands, supplying a potentially cheaper S source over a longer period of time. Elemental S must be converted to sulphate by soil bacteria before plants can use it.

Elemental S consists of finely ground sulphur that has been pelleted. The sulphur content is often 80-90%, but less than 50% is considered available in the year of application. The remainder becomes slowly available.

Limited Ontario Research

Ontario research on sulphur rates, source or application timing for alfalfa has been limited. Results from 2012 research trials applying sulphate to alfalfa were mixed. Some sites showed no response to applying sulphur. However, one site showed a dramatic yield increase in an alfalfa-grass mix of 1.55 ton/ac (including increasing first-cut yield from 2.2 to 3.1 ton/ac). Crude protein increased 4 percentage points, with the percentage of alfalfa in the harvested forage improved from 33 to 56%.

2013 Research Trials

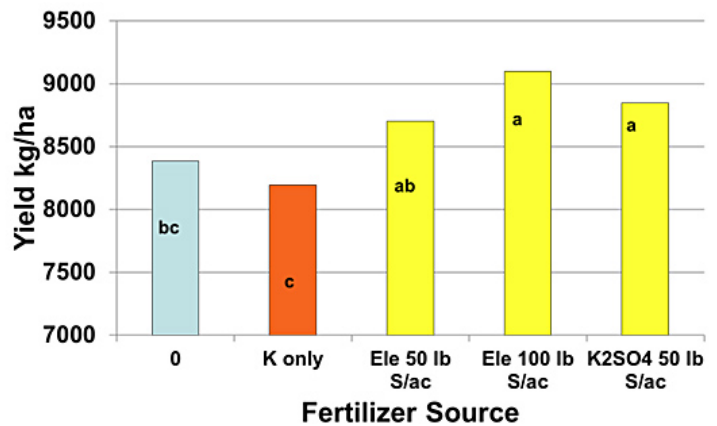
A new field project was started in 2013 to look at the rates, timing and form of sulphur on alfalfa-grass yield and quality. Another goal was to refine tools for identifying S-responsive sites, using tissue and soil testing.

Three forage stands were selected where a positive yield response to S was anticipated based on low S-tissue analysis.

Treatments included:

- no S
- 50 lbs/ac S fall-applied elemental S
- 100 lbs/ac S fall-applied elemental S
- 50 lbs/ac S spring-applied potassium sulphate (which also includes 142 lbs/ac K2O)
- no S + muriate of potash (which includes 142 lbs/ac K2O)

In these trials where we anticipated a S response, sulphur application improved forage yield an average of 9% (Figure 3). The yield response was greater in second-cut than first cut. The third-cut yield response was greater than first- or second-cut in a 3-cut system. There were no significant differences between sulphur sources (i.e. elemental S vs. sulphate of potash).

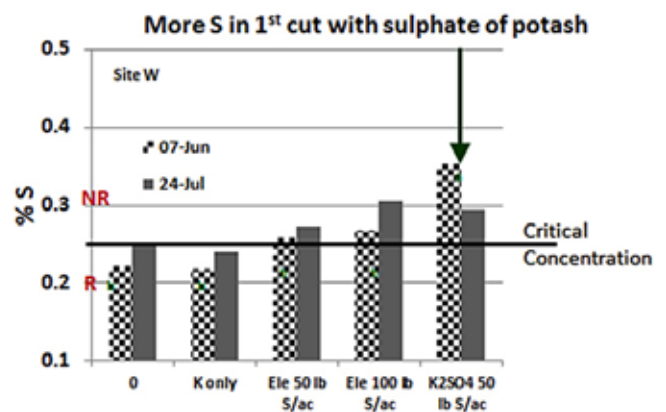


Note: to convert kg/ha to lbs/acre multiply by 0.9 (eg 8,000 kg/ha X 0.9 = 7,200 lb/acre)

Figure 3 - Yield response (kg/ha) to Sulphur in 2013 Trials on Responsive Sites

These results verified the 0.25% S-tissue test threshold. Treatments without S remained below this level, while S application improved S-tissue concentrations. Figure 4 shows S-tissue concentration in first and second-cut. Sulphate rather than elemental-S had the highest S-tissue concentration in the first-cut, indicating more availability to the plant. Sulphur application did not improve crude protein. At 2 sites, % alfalfa in the alfalfa-grass mix was increased by 10%. Spring K application did not improve yield, even though soil tests indicated a requirement for potash.

Tissue S Concentration 1st & 2nd cut



Note: Tissue concentrations below line (0.25%) are considered low and responsive to S application

Figure 4 - Tissue S concentration at Site W

In 2013, elemental sulphur provided a similar yield increase to sulphate. It has been generally regarded that because of slow availability of elemental S that the product should be applied 12 to 18 months ahead of crop. The mild winter in 2012-2013 may have improved the S availability. These trials will be repeated in 2014-2015.

Acknowledgement: Thanks to Greta Haupt, Shane McClure, Katie Walch, OMAF students, and John Lauzon, University of Guelph. Special thanks to the farmer co-operators. Financial support for the project: Heartland Regional Soil & Crop, Ontario Forage Council, Canadian Agricultural Adaptation Council. For more information on the research project, refer to "Crop Advances".

Is Your Soil in Good Physical Shape?

by Adam Hayes, Soil Management Specialist OMAF and MRA

Soil health is broken down into three components - physical, biological and chemical. Each component is important, but the physical component is one that can have a significant impact on yield. Soil physical aspects break down into two main areas:

- soil structure, including aggregate stability, and
- available water capacity.

Aggregate Stability

Aggregate stability is a measure of how well soil aggregates or clumps of soil stay together when they are subjected to a test with water or simulated rainfall. Soil aggregates with good stability will largely stay intact when exposed to the test. Soils with poor aggregate stability will breakdown into individual soil particles. (Figure 1).

So what are the implications of aggregate stability in the field? A soil with poor aggregate stability is prone to water erosion. When raindrops hit the soil the individual particles are easily broken away and washed down the slope and potentially off the field. The same is true for wind erosion.

Soil particles are more easily broken off and blown with the wind. Poor aggregate stability increases the incidence of crusting. The rain hits the soil surface breaking the aggregates apart and spreading them across the soil surface filling in the soil pores. When the soil dries, it is a solid layer that slows water movement into the soil and makes it difficult for the crop to emerge through. (Figure 2).

Soil structure refers to the way in which soil particles cling together to form aggregates. When individual soil particles are aggregated, they form larger, relatively stable primary structures. Structure also encompasses how soil particles are bound together and the spaces or pores in between. Structure has a significant effect on soil water properties and the ability of a soil to resist erosion. Good soil structure increases porosity, aeration, drainage and permits easier root penetration, all of which are important on soils with limited internal drainage, such as clays. Conversely, poor soil structure in the topsoil produces hard, massive clods, which makes a poor seedbed for germinating crops. Poor structure in the subsoil results in dense, compact properties which limit root and moisture penetration.

Clay particles tend to cling tightly together and resist separation more than sand particles. As organic matter decomposes to humus, a variety of compounds are released which "glue" soil particles together. Soil structure is formed through the actions of:

- drying and wetting or shrinking and swelling, this creates cracks and planes of weakness for roots
- freezing and thawing
- roots through the removal of water, root exudates or organic materials that bind soil particles and the formation of root channels
- soil animals like worms and beetles, moving soils, mixing and releasing organic materials
- microorganisms breaking down plant and animal residues
- tillage - reduces the size of aggregates, an artificial way of creating structure in some soils, generally not long lived.

Tillage

Tillage breaks down soil structure, so minimum tillage or no tillage is the best. Increasing organic matter in the soil through the use of manures, other organic materials such as compost, a diverse crop rotation and cover crops will improve soil structure.

Compaction

Soil compaction is a part of the soil profile that has poor structure. The compacted layer lacks good structure, making it difficult for roots to grow through, (Figure 3) and for air and water to move through. Taking measures to minimize compaction, such as keeping axle loads below 5 tons per axle, reducing traffic in the field, making sure the soil is fit and using radial tires and reduced tire pressure, will help prevent the problem.

Water Holding Capacity

Plant growth depends on the water stored in the soil. Available water capacity is a measure of the soil water that is available to the plant. Water is stored in the soil in the pores and in organic matter. Adding organic matter, such as manures and composts, is a good way to improve the water holding capacity of sandy soils. Soil that is in good physical shape will have good soil structure. A well-structured soil will allow water to move through the soil, air to enter the soil, will not crust and favours good root growth.

(Figure 4). Minimizing tillage and compaction, using a multi-crop rotation including cover crops and adding organic materials such as manure and composts, will greatly improve the structure of the soil.



Figure 1 - Two similar sized aggregates were placed in these petri dishes of water for 5 minutes. The soil on the left has very good aggregate stability and the one on the right is poor.



Figure 2 - Soil crusting due to poor aggregate stability can impede emergence and significantly reduce crop stands.



Figure 3 - The roots went down until they hit the compacted layer and then went horizontal. The resulting shallow root system will suffer moisture stress during dry periods.



Figure 4 - A well-structured soil allows for easy rooting and water and air movement through the soil.

Mob Grazing, Stocking Rate and Stock Density

by Jack Kyle, *Grazier Specialist OMAF and MRA*

When discussing pasture management, reference is often made to stocking rate and stock density, and sometimes you will hear the term “mob” grazing. Understanding these terms and how they relate to your grazing operation is important.

Stocking Rate

Stocking rate is the number of animals or animal units (standardized to 1000 lbs. of animal) per acre for the entire grazing season. If you have 50 animal units on a 75 acre pasture for the grazing season this would be a stocking rate of $50 / 75 = 0.66$ animal units per acre.

Stock Density

Stock density is the number of animal units on an area at a point in time. Using the above example of 50 animal units on a 75 acre pasture, divided into 25 paddocks of 3 acres each, what is the stock density? The stock density on that 3 acre paddock

when the animals are grazing it would be $50 / 3 = 16.66$ animal units per acre, or 16,660 lbs of livestock per acre. If these same animal units were on 1 acre the density would be $50 / 1 = 50$ animal units, or 50,000 lbs of animal per acre. It has been my observation that good quality pasture can support a 1 day stock density of about 1 lbs of animal per square foot, or 43,560 lbs of animal per acre for 1 day.

Mob Grazing

Popular grazing articles sometimes refer to high density “mob” grazing. In these scenarios the producer is looking at 200,000 to 1,000,000 lbs of animal/acre for a very short period – often about 1 - 2 hours, and then the animals are moved to another area. This is generally done on a pasture that has been neglected for years and needs to be rejuvenated, usually when the grasses have headed out.

The high impact of the animals will tramp any uneaten vegetation into the soil, and cause some surface disturbance that will stimulate growth of seeds that are in the soil seed bank. After this high impact grazing lasting for only an hour or two, the area will not be grazed again for a significant length of time, generally a year. Mob grazing should be done when the soil is relatively dry and

is best done with cows rather than younger animals. Mob grazing is a method of renovating a paddock more than it is a grazing method. It is a way to renovate a neglected pasture without using a plow, cultivation and seed drill. It is the first step in renovating an overgrown, unproductive pasture so that you can include that paddock in a regular rotational grazing system. Remember a long rest and recovery period must follow a “mob” grazing impact.

OSCIA Commitment to On Farm Trials and Projects

by Ian McDonald, *Applied Research Coordinator OMAF and MRA*

At the recent OSCIA Annual Meeting in London, a Round Table discussion explored the organization’s involvement in on-farm trials and projects. The input and suggestions provided will assist the OSCIA executive and OMAF Field Crop staff to better meet the needs of members. The discussion by the 80 delegates was lively and engaging, and summarized as follows:

What has worked in the past and what hasn’t?

Successful projects have clearly identified goals and provide good data on issues of interest. Project proposal submissions and review by the executive improved projects. Data analysis by OMAF staff is good, but more time is needed to do setup, monitoring and communication with cooperators. Reporting is good. Both good and bad project results should be communicated to give producers more information to formulate their own decisions.

Where do we go from here, how do we make it better?

There was concern that lack of technical support to set up, monitor and interpret data limits the value of project results. While costs have increased, grant values have not, with little compensation for farmers directly involved in field trials.

Does OSCIA have a mandate to do on-farm research?

It is well within the mandate of OSCIA to do on-farm research. Project involvement by members has pushed agricultural trends (hemp, no-till, biomass, GPS). Annual meeting delegates tend to be more involved in projects so there may be a bias. Increasing member participation in projects is challenging due to the time and cost involved without much recognition or compensation.

Have we had success with the current system?

Project success should be measured by the learnings.

Knowledge provided helps farmers with their own decisions that lead to the opportunity to capture profit. Poor or unexpected results allow members to learn without a huge personal risk in exploring new opportunities. Local projects engage both members and non-members. Local projects are often the only ones that occur on less than ideal ground, such as clays and sands, as opposed to research station and company plots on better soils.

The partnership between local associations and OMAF staff in doing projects works

well. However, more membership involvement in the projects is needed, rather than the same cooperators all the time. More funding is required. Farmers need to be empowered and supported by OSCIA.

Does the current grant system work and what could be changed?

There is concern about the lack of support from the federal government. The current funding approval system should be changed to be merit based. Having standard funding available to all counties and regions means some poor ideas or projects are being supported while other good ideas are left on the table. The system should be flexible to allow unallocated money from one area not fully utilized to be used in another category. Duration of projects should be explored to include 5 years projects rather than the current options of 1 or 3 years. One year projects and data may increase the chance of providing misleading results. Local projects are a good verification of research station results.

Annual Meeting suggest that the system is working, but could be improved. It was suggested the OSCIA explore how members could get federal or provincial tax

Continued on page 14

OSCIA Commitment to On Farm Trials and Projects

Continued from page 13

credits for involvement in on-farm research projects. Although some suggested more involvement and support from industry, the independence from agri-business with OSCIA is seen as an advantage.

Where do project ideas come from?

Things are different today. In the past, there were more farmers with more time on their hands. More extension staff was available, so there was less need for the farmers themselves to do the project work. There is concern over the general lack of funding for agricultural research.

Project ideas come from local, director and agri-business meetings, and OMAF staff. Ideas come from conferences (such as SWAC, FarmSmart) and international travel. Local project are sometimes limited by the lack of equipment and technology available to cooperators.

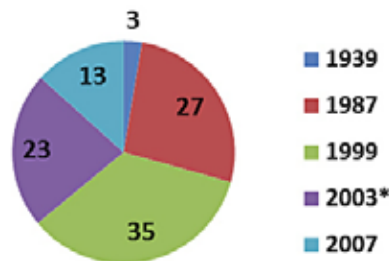
How do we get member involvement in field projects?

Projects need to meet the interests of local farmers, and be done where equipment and resources are available, including knowledgeable people. There is a need for more local industry involvement since projects often explore new inputs or technologies that local business may benefit from selling. It is very important to ensure that members and participating cooperators receive local project reports. Local project results rolled up into large projects sometimes results in local information not getting reported. It is important to increase awareness and interest of local projects through tours and meetings.

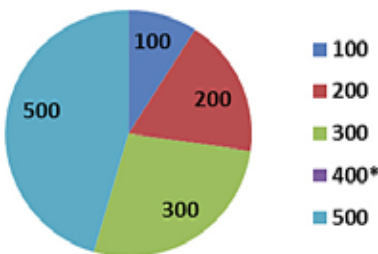
Survey Results

Prior to the Round Table discussion, the delegates were asked a number of questions to set the stage for the discussion. The results are reported below. OSCIA through the posting of the individual and annual Crop Advances reports has a tremendous resource available to all. This is not being utilized by the membership and needs more communication of its availability and excellent content. The results are expressed on a percentage of response basis.

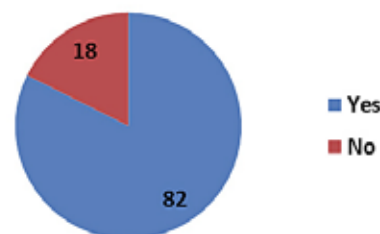
What Year did Crop Advances start to report OSCIA projects?



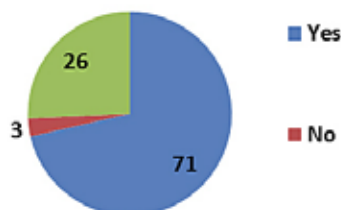
How many Crop Advances reports are available to you?



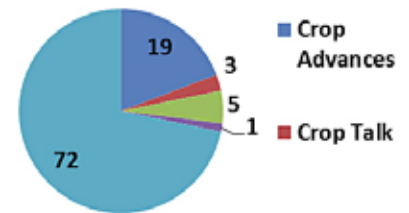
Have you had direct participation in a Soil and Crop project?



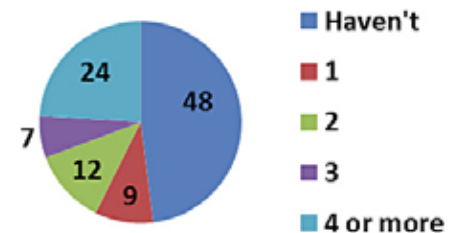
Are you open to direct involvement in Soil and Crop projects on your farm?



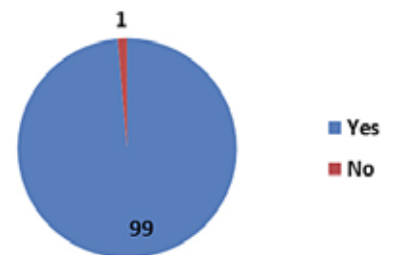
Where are OSCIA member projects reported?



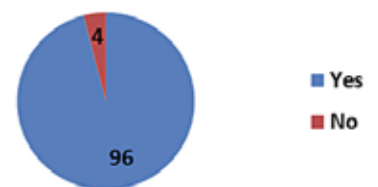
Per year, have you read online Crop Advance Reports?



Should OSCIA continue to be involved in on farm field trials?



Have the results of OSCIA field trials or Crop Advances reports influenced your practices at home?



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 Compilation: Julie Gamache

Stratégies concernant l'apport d'azote dans le blé

par Peter Johnson, spécialiste de la culture des céréales, MAAO et MAR

Des rendements en blé atteignant 150 boisseaux/acre sont très possibles avec de bonnes pratiques et une hausse de l'apport en azote (N). Des recherches récentes montrent clairement une interaction entre les fongicides et l'azote. Des doses élevées d'azote soulèvent cependant des questions sur la verse, la source d'azote et le moment idéal de l'application. La demande en azote pour le blé survient beaucoup plus tôt que celle du maïs, les méthodes utilisées sont donc différentes. Quel est le bon dosage, et existe-t-il des stratégies qui pourraient aider à obtenir ces rendements énormes sans que ce soit trop coûteux?

Dosage sans fongicides

90 lb de N /acre, point final! Vous n'obtiendrez jamais de gros rendements de blé sous les conditions climatiques de l'Ontario sans fongicides. Alors résignez-vous ou vous serez dépassé par les vrais producteurs de blé!

Dosage avec fongicides

120 lb de N/acre est la dose de base. Dans plus de 50 % de nos essais, la dose la plus économique d'azote (MER-N) était très près de 150 lb de N/acre. Toutefois, 150 lb de N/acre n'a permis que peu de gains, alors si vous craignez la verse, procédez avec prudence. Faites des essais sur deux ou trois rangées dans le champ à raison de 150 lb/acre, et le reste à une dose de 120 lb/acre, jusqu'à ce que vous puissiez évaluer à quel point les doses plus élevées se traduisent par des hausses de rendement rentables, sans que le blé se couche.

Doses et rotation

Le blé semé après des pois ou semé très hâtivement et très densément devrait moins recevoir d'azote. L'azote libéré par la culture de pois convient très bien au blé, ce qui signifie que 60 à 90 lb de N/acre exerce la même action que 120 à 150 lb de N/acre sans pois. Le blé semé tôt et densément est plus sujet à la verse et des doses de 120 lb/acre peuvent accentuer le problème. Allez-y prudemment.

Source

Les essais réalisés au cours des dernières années ont montré que la source d'azote avait peu d'effet sur le rendement. Des rendement (2,5 boisseaux/acre) comparativement aux formes sèches, surtout en raison d'une répartition plus uniforme.

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Validation des dosages et des sources de soufre pour la luzerne en Ontario

par Bonnie Ball, spécialiste de la fertilité du sol, et Brian Hall, MAAO et MAR



Figure 1 – Effet des applications de soufre sur les rendements de luzerne (100 lb S élémentaire/acre à la droite du piquet)

De toutes les grandes cultures, c'est la luzerne qui possède les exigences en soufre (S) les plus élevées. Une récolte de 5 tonnes/acre de luzerne prélève environ 25 lb/acre de soufre. En comparaison une récolte de canola de printemps de 45 boisseaux/acre, un autre important consommateur de soufre, prélève 15 lb/acre. Une récolte de 150 boisseaux/acre de maïs prélève quant à elle 10 lb/acre de soufre. En Ontario, les dépôts de soufre proenant

des pluies acides ont diminué de façon constante. Les quantités de S déposées ont diminué de plus de 50 % depuis 1990. Les cas de carences en S ont également augmenté en raison de la réduction du réservoir de matière organique, de la hausse des rendements et des teneurs plus élevées en protéines. Les carences en S dans la luzerne sont plus susceptibles de se produire dans les sols où il n'y a pas eu d'épandages de fumier au cours des deux dernières années.

Analyse des teneurs en S dans les tissus de luzerne

Il n'existe pas actuellement d'analyse de sol fiable pour le soufre en Ontario. On estime toutefois que l'analyse des tissus de luzerne (à la fin du stade du bouton) constitue un diagnostic convenable pour détecter les carences en soufre. Le seuil, sous lequel on considère qu'il y a carence en soufre dans la luzerne et à partir duquel cette dernière pourrait bénéficier d'un apport en soufre, est de 0,25 %. Un relevé effectué en 2012 dans des par-

celles de luzerne en Ontario (Figure 2) indique que dans 21 % des parcelles, les analyses de tissus montraient des concentrations de S inférieures à ce pourcentage. En d'autres mots, dans 79 % de ces parcelles il n'y aurait probablement pas eu d'avantages économiques à appliquer du soufre. À noter aussi que dans 37 % de ces parcelles, les analyses ont révélé des concentrations pour le potassium (K) inférieures au seuil critique de 1,7 %.

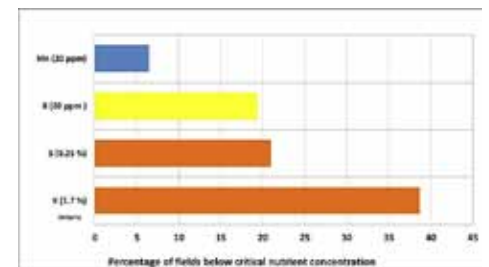


Figure 2 - Évaluation 2012 des carences en éléments nutritifs dans des échantillons de tissus provenant de parcelles de luzerne en Ontario.

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Stratégies concernant l'apport d'azote dans le blé

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ESN, Agrotain Plus®

ESN a n'a pas eu d'effet sur le rendement dans le blé d'automne, mais il a accru les teneurs en protéines. Agrotain Plus® a en fait eu un effet à la baisse sur les rendements lorsque les applications d'azote ont été retardées jusqu'à la mi-mai en raison de la température. Agrotain Plus® peut convenir aux applications hâtives d'azote, mais ne doit pas être utilisé plus tard. ESN convient dans les mélanges d'azote destinés au blé vitreux, mais uniquement lorsque les protéines constituent une source de valeur ajoutée. On est encore à évaluer s'il est pertinent d'acheter ces produits azotés « protégés », ou s'il vaut mieux réserver cette dépense additionnelle à un apport supplémentaire en azote.

Soufre

Les besoins en soufre (S) n'ont pas été aussi constants que prévu lorsque les carences sont apparues pour la première fois en 2011. Dans les cas de carence, il n'y a plus d'effet au-delà de 10 lb de S/acre. Jusqu'à maintenant, la meilleure recommandation générale est d'appliquer 10 lb de S/acre (40 lb/acre sous forme de sulfate d'ammonium ou 3 gal/acre de thiosulfate d'ammonium) pour ne pas prendre de risque, et de réaliser des essais à chaque ferme pour déterminer les parcelles où l'apport de soufre est efficace et celles où il ne l'est pas. On ne sait jamais quand l'apport de soufre donnera des résultats.

Applications uniques

Effectuer les applications uniques à la fin d'avril. Cela permet d'éviter des risques importants de pertes de N en sols détremés qui peuvent survenir plus tôt, tout en apportant l'azote au moment où les besoins de la culture augmentent. Les apports de doses uniques et élevées de N peuvent cependant entraîner des problèmes de verse.

Applications fractionnées

On a observé des hausses de rendement à la suite d'applications fractionnées d'azote, mais elles ne sont pas constantes. Les applications fractionnées d'azote apportent d'autres avantages plus intéressants que les hausses de rendement. Elles permettent notamment de réduire le lessivage de l'azote, de faciliter la lutte contre les mauvaises herbes en rendant la culture plus compétitive, en permettant une épiaison plus uniforme et moins de verse. Appliquer de 50 à 80 lb de N/acre dès que possible (sur sol gelé) et le reste entre le premier et le deuxième noeud.

Le blé est la culture qui répond le mieux aux pratiques de gestion. En portant une plus grande attention aux détails, on obtiendra des rendements plus élevés. De bonnes pratiques permettront d'éliminer la verse tout en obtenant des rendements très élevés. Quelle que soit la stratégie utilisée, vous serez récompensés de vos efforts. Soignez bien votre culture et soyez un VÉRITABLE producteur de blé!

Validation des dosages et des sources de soufre pour la luzerne en Ontario

Continued from page 16

Doses de S

Règle générale, on applique du soufre dans la luzerne à raison de 5 lb/acre par tonne de rendement en matière sèche. L'Université du Wisconsin recommande 15 à 25 lb/acre de S sous forme de sulfate à la volée dans des parcelles établies, ou 25 à 50 lb/acre de S élémentaire incorporé au moment des semis. Des recherches sont toutefois nécessaires pour vérifier ces doses en Ontario.

Formes de S

Quelle est la source la plus économique de S à utiliser dans la luzerne? Le soufre doit être sous forme de sulfate pour être utilisable par la plante.

Exemple d'engrais à base de sulfate :

- sulfate d'ammonium (34 - 0 - 0 - 24)
- sulfate de potassium (0 - 0 - 50 - 18)
- sulfate de potasse et de magnésie (appelé aussi Sul-Po-Mag, ou K-Mag) (0 - 0 - 22 - 20)
- sulfate de calcium (0 - 0 - 0 - 17)

Le soufre élémentaire, plutôt que le sulfate, risque de mieux convenir aux parcelles de plantes fourragères, offrant une source probablement moins coûteuse de S à la longue. Le S élémentaire doit être transformé en sulfate par les bactéries du sol avant de pouvoir être utilisé par les plantes.

Le soufre élémentaire se présente sous forme de granulés de soufre finement broyés. La teneur en soufre est souvent de l'ordre de 80 à 90 %, mais on estime que moins de 50 % est disponible pour la plante au cours de l'année de l'application. Le reste est assimilé lentement par la suite.

Recherches ontariennes limitées

Les recherches ontariennes sur les doses et sources de soufre, ainsi que sur le moment idéal d'application pour la luzerne sont limitées. Les résultats d'essais réalisés en 2012 au cours desquels on a apporté du soufre à la luzerne sont variés. À certains sites, les applications de soufre n'ont eu aucun effet. À un site cependant, on a observé une hausse très marquée de rendement de 1,55 tonne/acre dans un champ de luzerne-graminées (incluant une hausse du rendement de la première coupe de 2,2 à 3,1 tonnes/acre). La teneur en protéine brute a augmenté de 4 % et la proportion de luzerne dans les fourrages récoltés est passée de 33 à 56 %.

Parcelles d'essai 2013

Un nouveau projet a démarré en 2013 concernant l'effet des doses, des périodes d'application et des formes de soufre sur les rendements des parcelles de luzerne/graminées et leur qualité. Les essais visaient aussi à perfectionner les méthodes pour repérer, à l'aide des analyses de tissus et de sol, les sites qui réagissent aux applications de soufre.

Trois parcelles de plantes fourragères, dans lesquelles on prévoyait un effet positif à l'apport de soufre en raison des analyses foliaires révélant une faible concentration en S, ont été sélectionnées.

Exemples de traitements :

- pas de S
- 50 lb/acre de S élémentaire appliqué à l'automne
- 100 lb/acre de S
- 50 lb/acre de S sous forme de sulfate de potassium appliqué au printemps (comportant aussi 142 lb/ac de K2O)
- pas de S + muriate de potasse (comportant 142 lb/acre de K2O)

Dans ces essais où l'on s'attendait à ce que l'apport en S ait un effet sur le rendement, la fertilisation a amélioré en moyenne le rendement en plantes fourragères de 9 % (Figure 3). L'effet sur le rendement a été plus important à la deuxième coupe qu'à la première. L'effet sur le rendement de la troisième coupe a été supérieur à ceux des première et deuxième coupes dans les systèmes à trois coupes. On n'a pas observé de différences significatives selon les sources de soufre (c.-à-d. S élémentaire versus sulfate de potassium).

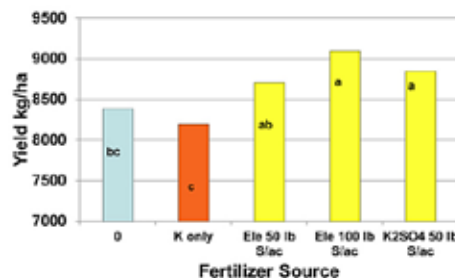


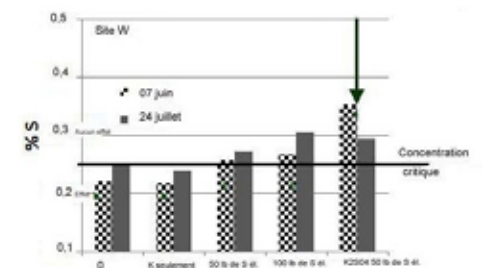
Figure 3 - Effet de l'apport de soufre sur le rendement 2013 (kg/ha).

Note : Essais dans les sites où l'effet du S a été positif pour convertir des kg/ha en lb/acre, multiplier par 0,9 (ex. : 8 000 kg/ha X 0,9 = 7 200 lb/acre).

Ces résultats ont validé qu'une concentration tissulaire de S de 0,25 % constituait un seuil critique. Sans apport de S, les concentrations tissulaires sont demeurées

sous ce seuil, alors que l'application de S a amélioré la concentration de soufre dans les tissus. La figure 4 illustre la concentration tissulaire de S dans les plants, aux première et deuxième coupes. À la première coupe, les concentrations tissulaires de S ont été plus élevées avec le sulfate qu'avec le S élémentaire, ce qui témoigne d'une plus grande disponibilité pour les plants. L'apport de S n'a pas amélioré la teneur en protéine brute. À deux sites, le pourcentage de luzerne dans le mélange luzerne-graminées a augmenté de 10 %. L'application printanière de K n'a pas amélioré les rendements, bien que les analyses de sol aient indiqué des carences en potasse.

Concentration tissulaire de S aux première et deuxième coupes



Note : Les concentrations tissulaires sous la ligne (0,25 %) sont considérées comme étant faibles et l'apport de S est alors positif.

Figure 4 - Concentration de S dans le tissu au site W.

En 2013, l'apport de soufre élémentaire a permis d'obtenir une hausse similaire de rendement à celle qu'a procurée le sulfate. On estime généralement qu'en raison de la faible disponibilité du soufre élémentaire, le produit devrait être appliqué de 12 à 18 mois avant la récolte. L'hiver doux de 2012-2013 pourrait avoir amélioré la disponibilité du soufre. Ces essais seront répétés en 2014-2015.

Remerciements : Merci à Greta Haupt, Shane McClure, Katie Walch, les étudiants au MAAO et John Lauzon, de l'Université de Guelph. Mercis particuliers aux producteurs participants. Commanditaires financiers du projet :

Heartland Regional Soil & Crop, Ontario Forage Council, Conseil de l'adaptation agricole du Canada. Pour plus d'information sur le projet de recherche, consulter la publication « Crop Advances » (en anglais seulement).

Votre sol est-il en bon état physique?

par Adam Hayes, spécialiste de la gestion des sols, MAAO et MAR

La santé du sol comporte trois volets : physique, biologique et chimique. Chacun est important, mais la composante physique est celle qui peut avoir l'impact le plus significatif sur le rendement. Les propriétés physiques du sol reposent sur deux indicateurs principaux, soit :

- sa structure, comprenant entre autres la stabilité des agrégats;
- sa capacité de rétention d'eau.

Stabilité des agrégats

La stabilité des agrégats est un indicateur de la cohésion des agrégats ou particules de sol lorsqu'ils sont soumis à des tests d'humectation rapide ou de précipitations simulées. Les agrégats du sol qui présentent une bonne cohésion resteront en majorité intacts au cours du test. Les sols présentant une faible stabilité structurale vont se séparer en particules distinctes (Figure 1). Quels sont donc les effets de la stabilité des agrégats dans le champ? Un sol instable est plus vulnérable à l'érosion hydrique. Lorsque les gouttes de pluie entrent en contact avec le sol, les particules individuelles se défont facilement et sont lessivées vers le bas de la pente et éventuellement à l'extérieur du champ. Le même constat s'applique à l'érosion éolienne au cours de laquelle les particules de sol instable se défont plus aisément et seront emportées par le vent. Par ailleurs, une faible stabilité des agrégats accroît l'encroûtement. En effet, la pluie qui heurte la surface du sol défait les agrégats et les répand à la surface du sol, remplissant ainsi les pores de ce dernier. Avec l'assèchement du sol, une couche solide se forme et ralentit la circulation de l'eau dans le sol, ce qui nuit à la levée des jeunes pousses (Figure 2).

La structure du sol désigne la façon dont les particules du sol s'agglutinent les unes aux autres pour former des agrégats. Lorsque les particules individuelles du sol forment des agrégats, cela donne de plus grosses structures primaires, relativement stables. La structure désigne aussi le type de lien qui unit les particules du sol et les espaces ou pores qui les séparent les unes des autres. La structure exerce un effet important sur les propriétés de l'eau contenue dans le sol et la résistance du sol à l'érosion. Une bonne structure accroît la porosité, l'aération, le drainage, et facilite la pénétration des racines dans le sol. Ce sont tous là des aspects importants dans les sols dont le drainage est déficient, comme les sols argileux. Inversement,

l'horizon superficiel des sols ayant une faible structure contient des mottes de terre dures et massives qui constituent de piètres lits de semence pour les cultures. Une faible structure dans les horizons inférieurs provoque la formation de couches denses et compactes qui freinent la pénétration des racines et de l'humidité.

Les particules d'argile ont tendance à s'agglutiner ensemble et à se séparer plus difficilement que les particules de sable. À mesure que la matière organique se décompose en humus, diverses substances sont libérées et contribuent à l'agrégation des particules de sol. La formation de la structure du sol dépend des paramètres suivants :

- l'alternance d'assèchement et d'humidification ou de contraction et de gonflement, entraînant la formation de fissures et de plans de faiblesse nuisibles aux racines;
- le cycle gel/dégel;
- la présence de racines par l'intermédiaire du prélèvement d'eau, des exsudats des racines ou de la matière organique qui lie les particules sur sol et permet la formation de réseaux racinaires;
- les organismes du sol, comme les vers et les insectes, qui déplacent les particules de sol, les mélangent et libèrent des substances organiques;
- les microorganismes qui décomposent les résidus végétaux et animaux;
- le travail du sol qui réduit la taille des agrégats, ce qui représente une méthode artificielle d'améliorer la structure de certains sols, mais généralement à court terme seulement.

Travail du sol

Le travail du sol défait la structure du sol; le travail minimum du sol ou le semis direct sont donc préférables. L'augmentation de la matière organique dans le sol par l'épandage de fumiers, ou d'autres matières organiques comme le compost, diverses rotations culturales et des cultures de couverture vont aussi permettre d'améliorer la structure du sol.

Compactage

Les sols dont la structure est mauvaise ont souvent des horizons compactés. La couche compactée n'a pas une bonne structure, ce qui nuit à la pénétration des racines (figure 3) ainsi qu'à la circulation de l'air et de l'eau. On peut prévenir le

problème en adoptant des mesures qui atténuent le compactage, comme garder la charge par essieu inférieure à 5 tonnes, réduire la circulation dans le champ, s'assurer que le sol est en mesure de recevoir la machinerie, utiliser des pneus radiaux et réduire leur pression.

Capacité de rétention d'eau

La croissance des plantes dépend de l'eau contenue dans le sol. La capacité de rétention d'eau d'un sol est un indicateur de la quantité d'eau disponible pour les plantes. L'eau est retenue dans le sol dans les pores de ce dernier et dans la matière organique. L'apport de matière organique, sous forme de fumier ou de compost, est un bon moyen d'améliorer la capacité de rétention d'eau des sols sableux.

Les sols qui sont dans un bon état physique auront une bonne structure. L'eau circule bien dans un tel sol et l'air y pénètre facilement; il ne se forme pas de croûtes, ce qui favorise la croissance des racines (Figure 4). On peut grandement améliorer la structure d'un sol par la réduction du travail du sol et du compactage, le recours à des rotations avec plusieurs cultures, à des cultures de couverture et par l'épandage de matières organiques comme du fumier ou du compost.



Figure 1 - Deux agrégats de dimensions semblables ont été placés dans des boîtes de Pétri remplies d'eau pendant cinq minutes. À gauche, le sol présente une très bonne stabilité des agrégats alors qu'à droite, le sol présente une faible stabilité structurale



Figure 2 - L'encroûtement du sol attribuable à une faible stabilité des agrégats peut nuire à la levée et réduire considérablement les densités de peuplement.

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Votre sol est-il en bon état physique?

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Figure 3 - Les racines ont pénétré en profondeur jusqu'à ce qu'elles rencontrent une couche compactée, puis se sont développées à l'horizontale. Le système racine superficiel qui en a résulté sera soumis à des stress hydriques durant les périodes sèches.



Figure 4 - Un sol ayant une bonne structure est propice à la croissance des racines et facilite la circulation de l'eau et de l'air dans le sol.

L'engagement de l'OSCIA concernant les essais et les projets à la ferme

par Ian McDonald, coordonnateur de la recherche appliquée, MAAO et MAR

Au cours de la récente assemblée annuelle de l'OSCIA à London, la participation de l'organisation dans les projets et les essais à la ferme a fait l'objet d'une discussion en plénière. Les observations et les suggestions qui ont été formulées aideront les dirigeants de l'OSCIA et le personnel de terrain du MAAO à mieux répondre aux besoins des membres. LA discussion entre les 80 délégués fut très vivante et dynamique. En voici le résumé.

Qu'est-ce qui a bien et moins bien bien fonctionné par le passé?

Les projets qui ont du succès se caractérisent par des objectifs bien définis et ils génèrent des données valables sur des sujets d'intérêt. L'examen des propositions de projets par les dirigeants donne des résultats positifs. L'analyse des données par le personnel du MAAO est une bonne chose, mais il faudrait accorder plus de temps à la mise en place, au suivi et aux communications avec les collaborateurs. Les rapports sont corrects. Les résultats des projets, qu'ils soient bons ou mauvais, devraient être communiqués afin de donner plus de renseignements aux producteurs et leur permettre de prendre leurs propres décisions.

Quelle est la direction à prendre maintenant et comment s'améliorer?

On semble s'inquiéter du manque de soutien technique pour la mise en place, le suivi et l'interprétation des données, qui limitent l'utilité des résultats livrés par les projets. Bien que les coûts ont

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Pâturage de masse, capacité porteuse et densité de chargement

par Jack Kyle, spécialiste des animaux de pâturage, MAAO et MAR

Lorsqu'on discute de gestion des pâturages, on parle souvent de capacité porteuse, de densité de chargement et on entend parfois l'expression pâturage de masse ou de nettoyage. Il est important de comprendre ces termes dans le contexte de son exploitation.

Capacité porteuse

La capacité porteuse correspond au nombre d'animaux ou d'unités animales (normalisées à 1000 lb de bétail à l'acre pour toute la durée de la saison de pâturage. Si vous avez 50 unités animales dans un pâturage de 75 acres pour la saison, cela représente un taux de chargement de $50 / 75 = 0,66$ unité animale à l'acre.

Densité de chargement

La densité de chargement en bétail correspond au nombre d'unités animales sur une superficie à un moment donné. En utilisant l'exemple ci-dessus de 50 unités animales dans un pâturage de 75 acres, divisés en 25 enclos de trois acres chacun, quelle est la densité de chargement en bétail? La densité de chargement dans l'enclos de trois acres lorsque les animaux sont au pâturage serait de $50 / 3 = 16,66$ unités animales à l'acre, ou 16 660 lb de bétail à l'acre. Si ces mêmes unités animales étaient sur un acre, la densité serait de $50 / 1 = 50$ unités animales ou 50 000 lb de bétail à l'acre. Selon mes observations, un pâturage de bonne qualité peut soutenir une densité de chargement en bétail par jour d'environ un livre de bétail au pied carré, ou 43 560 lb de bétail à l'acre par jour.

Pâturage de masse

On fait parfois référence, dans certains articles de vulgarisation, au pâturage de masse ou de nettoyage. Dans ces scénarios, le producteur fait pâturer 200 000 à 1 000 000 lb de bétail/acre pendant une très courte période, souvent une ou deux heures seulement, puis les animaux sont amenés ailleurs. Cela se fait d'habitude dans un pâturage qui a été négligé pendant des années et qui doit être remis en condition, ordinairement au moment de l'épiaison des graminées.

Le piétinement des animaux va fortement renfoncer toute végétation non consommée et provoquer des altérations à la surface du sol, qui vont stimuler la levée des graines déjà dans le sol. Après ce pâturage de nettoyage d'une ou deux heures, la parcelle ne sera pas broutée de nouveau avant un bon moment, soit normalement un an. Le pâturage de masse devrait être pratiqué lorsque le sol est relativement sec et, préférablement, avec des vaches plutôt qu'avec des animaux plus jeunes.

Le pâturage de masse est un moyen de remettre un enclos en condition plus qu'une méthode de pâturage. Il permet de rénover un pâturage négligé sans avoir à le labourer, à travailler le sol et à utiliser un semoir. Cela constitue la première étape pour rénover un pâturage trop dense et improductif qui pourra faire partie ensuite d'une parcelle utilisée régulièrement en rotation. Se rappeler qu'un épisode de pâturage de masse doit toujours être suivi d'une longue période de repos et de récupération.

L'engagement de l'OSCIA concernant les essais et les projets à la ferme

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augmenté, le montant des subventions n'a pas suivi et les producteurs qui participent directement aux essais reçoivent peu d'indemnités.

Est-ce que l'OSCIA a le mandat de réaliser des projets de recherches à la ferme?

C'est tout à fait dans les mandats de l'OSCIA de réaliser des projets de recherches à la ferme. La participation des membres à des projets a inspiré de nouvelles tendances en agriculture (culture du chanvre, semis directs, biomasse, GPS). Les délégués à l'assemblée annuelle ont tendance à s'impliquer davantage dans les projets; il risque donc parfois que les choix soient tendancieux. Il est cependant difficile d'accroître la participation des membres aux projets en raison du temps et des coûts et du peu de reconnaissance et de compensations financières qui y sont associés.

Le système actuel fonctionne-t-il bien?

La réussite d'un projet devrait se mesurer par les connaissances qu'il permet d'acquérir. Ces dernières aident les producteurs à prendre leurs propres décisions menant à une plus grande rentabilité. De mauvais résultats ou des résultats inattendus permettent aux membres d'acquérir des connaissances sans prendre d'énormes risques personnels tout en explorant de nouvelles possibilités.

Les projets locaux font participer des membres et des non-membres. Ces projets sont souvent les seuls qui sont réalisés dans des sols de moindre qualité, comme des sols argileux ou sableux, contrairement aux sols des stations de recherche et des entreprises qui sont souvent des sols de texture plus favorable. Le partenariat entre les associations locales et le personnel du MAAO dans la réalisation de projet fonctionne bien. Il faudrait cependant qu'il y ait plus de membres qui participent aux projets, car ce sont souvent les mêmes collaborateurs qui s'impliquent. Il faut davantage de financement. Les agriculteurs doivent être représentés et soutenus par l'OSCIA.

Est-ce que le mécanisme actuel de subventions fonctionne et qu'est-ce qui pourrait être changé?

On s'inquiète du manque de soutien du gouvernement fédéral. Le mécanisme actuel d'approbation du financement devrait être modifié pour être fondé sur le mérite. Un financement égal étant offert à tous les comtés et régions, il arrive que des projets ou idées médiocres soient financés au détriment des meilleurs. Le mécanisme devrait être souple et permettre que les sommes non attribuées dans une région puissent être utilisées à d'autres fins. La durée des projets devrait être revue afin d'inclure des projets de cinq ans, plutôt que de se limiter au choix actuel d'un ou trois ans. Les projets d'un an et les données correspondantes risquent de hausser les chances de se retrouver avec des résultats trompeurs. Les projets locaux représentent un bon moyen de valider les résultats obtenus dans les stations de recherche.

Le nombre et la variété des rapports de subvention présentés à l'assemblée annuelle laissent croire que le mécanisme fonctionne, mais il pourrait être amélioré. On a suggéré que l'OSCIA se renseigne pour savoir comment ses membres pourraient obtenir des crédits d'impôt du fédéral ou du provincial pour leur participation à des projets de recherche à la ferme. Bien que certains aient suggéré une plus grande participation de l'industrie, l'indépendance de l'OSCIA face au secteur de l'agrinégoce est perçue comme un avantage.

D'où proviennent les idées des projets?

La situation a bien évolué à cet égard. Par le passé, les agriculteurs étaient plus nombreux et ils avaient plus de temps pour eux. Les conseillers aussi étaient plus nombreux et les producteurs avaient donc moins besoin de s'impliquer dans les travaux de recherche. On s'inquiète maintenant du manque de financement général dans le secteur de la recherche en agriculture.

Les idées de projets sont formulées par les producteurs de la région, au cours de réunions du secteur et du personnel du

MAAO. Certaines idées ont été mises de l'avant dans les colloques (comme SWAC, FarmSmart) ou s'inspirent des voyages à l'étranger. Les projets locaux sont souvent limités par le manque de matériel et de technologie à la disposition des participants.

Comment faire participer les membres à des projets sur le terrain?

Les projets doivent répondre aux intérêts des agriculteurs de la région et être réalisés à des endroits où le matériel et les ressources sont disponibles, y compris des ressources humaines compétentes. Il faudrait que l'industrie locale participe davantage aux projets, car ces derniers portent souvent sur l'évaluation de nouvelles technologies ou du nouveau matériel que les entreprises locales pourraient souhaiter mettre en marché.

Il est très important de s'assurer que les membres et les producteurs participants reçoivent les rapports du projet.

Il arrive parfois que l'information ne soit pas diffusée localement lorsque des projets locaux font partie de plus vastes projets. Il est important d'accroître la sensibilisation et l'intérêt envers des projets locaux dans le cadre de tournées et de réunions.

Résultats du sondage

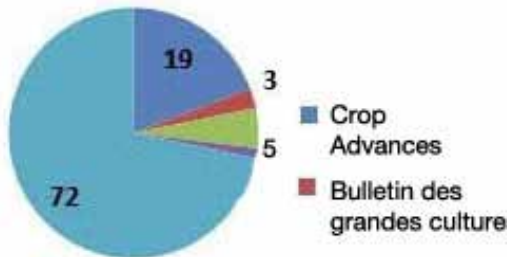
Avant la discussion en plénière, un certain nombre de questions ont été posées aux délégués pour lancer la discussion. Les résultats sont donnés plus bas. Grâce à la diffusion des bulletins et des rapports annuels de Crop Advances, l'OSCIA détient une formidable ressource qui est offerte à tous. Celle-ci n'est pas suffisamment utilisée par les membres et devrait faire l'objet de promotion pour que son excellent contenu soit davantage connu et qu'on sache comment y accéder. Les résultats sont exprimés en pourcentage.

Continued on page 21

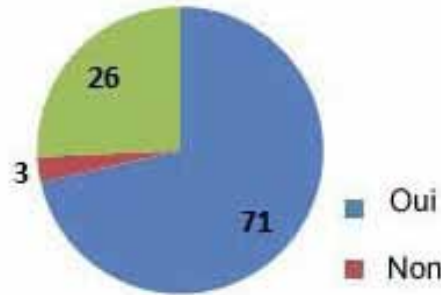
L'engagement de l'OSCIA concernant les essais et les projets à la ferme

Continued from page 20

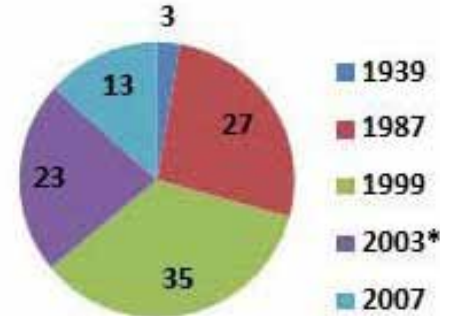
Dans quelles publication sont diffusés les résultats des projets des membres de l'OSCIA?



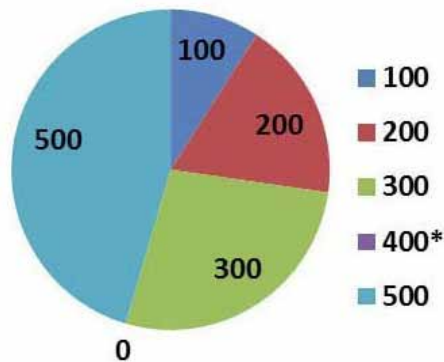
Accepteriez-vous de participer directement à un projet sur les sois ou les cultures à votre ferme?



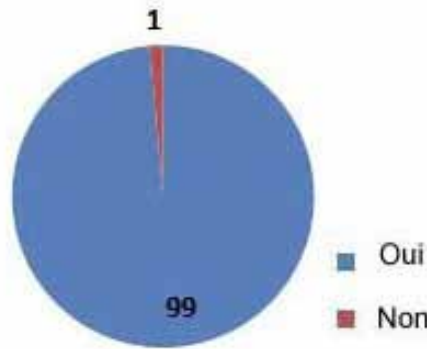
En quelle année, a-t-on commencé à publier les résultats des project de l'OSCIA dans Crop Advances?



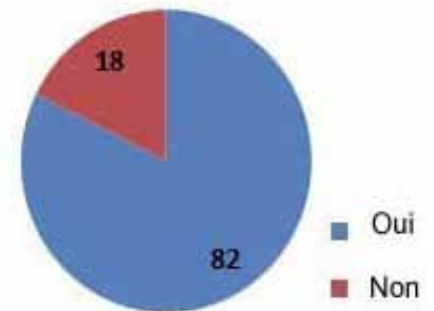
Combien y a-t-il de bulletins Crop Advances à votre disposition?



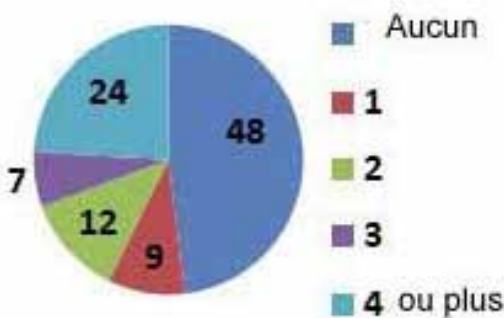
Est-ce que l'OSCIA devrait continuer à s'impliquer dans les essais à la ferme?



Avez-vous déjà participé directement à un projet sur les sois ou les cultures?



Combien avez-vous lu de bulletins Crop Advances par année en ligne?



Est-ce que les résultats des essais au champ de l'OSCIA ou les bulletins de Crop Advances ont eu un effet sur vos pratiques culturales?



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Pourquoi les traitements d'herbicides en présemis sont-ils si importants dans le soya?

par Mike Cowbrough, chargé de programme, lutte contre les mauvaises herbes, grandes cultures, MAAO et MAR

Si vous cultivez du soya et que vous avez de la vergerette du Canada, de la petite ou de la grande herbe à poux dans vos champs, l'utilisation de mélanges en cuve d'herbicides en présemis constitue le meilleur moyen de lutter efficacement contre ces mauvaises herbes. Les mesures de lutte contre ces trois mauvaises herbes sont soit limitées ou n'offrent pas d'efficacité acceptable une fois que les plants de soya ont levé.

Pourquoi ces mauvaises herbes sont-elles si difficiles à combattre?

Il existe des populations de ces trois espèces résistantes au glyphosate en Ontario. On trouve aussi des populations de vergerette du Canada et de grande herbe à poux résistantes à FirstRate (clo-ransulame) et à Classic (chlorimuron).

Vergerette du Canada (aussi appelée hip-puride vulgaire et queue de cheval)

Tableau 1 Efficacité des herbicides

- Figures 1-3
- On dénombre des populations résistantes au glyphosate (Figure 4) dans 12 comtés en Ontario.
- 12 % des sites présentant une résistance confirmée au glyphosate en Ontario présentaient aussi une résistance aux herbicides du groupe 2 (ex. : FirstRate) et se retrouvent dans six comtés (Figure 4).
- Les plants de grande taille (1,5 m (4 pi 6 po) ou plus haut) peuvent produire plus de 200 000 graines.
- La majorité des semences de vergerette (~80 %) vont germer lorsqu'elles sont dispersées.
- Les semences se déplacent par voie aérienne et parcourent plusieurs centaines de mètres.
- Tableau 1—Efficacité des herbicides



Figure 1 – Petite pousse de vergerette à la mi-septembre.

J'ai entendu dire que Sencor (métribuzine) était efficace contre la vergerette. Pourquoi n'est-il pas dans le tableau 1?

La dose de 600 g/acre de Sencor 75DF (métribuzine) a été exceptionnellement efficace dans le cadre des essais du Dr Sikkema. Toutefois, il s'agit de la dose la plus élevée mentionnée sur l'étiquette et elle peut causer d'importants dommages aux cultures et des pertes de rendement

majeures dans les sols à risque (à faible teneur en matière organique, de texture grossière). L'efficacité de la métribuzine contre la vergerette du Canada avec des doses plus faibles n'a pas été évaluée en Ontario. Toutefois, Eubank et al., en 2008, ont utilisé l'équivalent de 225 g/acre de Sencor 75DF et observé que ce produit offrait une efficacité de 53 à 73 % contre la vergerette du Canada.



Figure 2 – Rosette de vergerette du Canada à la fin-mai. À ce moment, le stade idéal pour que la lutte contre cette mauvaise herbe soit efficace à l'aide d'herbicide ou du travail du sol est dépassé.



Figure 3 – Jeune pousse à deux feuilles de grande herbe à poux.

Grande herbe à poux

- On dénombre des populations résistantes au glyphosate dans sept comtés en Ontario (Figure 5).
- 6 % des sites présentant une résistance confirmée au glyphosate en Ontario présentaient aussi une résistance aux herbicides du groupe 2 (ex. : FirstRate) et se retrouvent dans trois comtés (Figure 5).
- 8 Considérée comme une des espèces les plus compétitives en Ontario.
- Les plants femelles (qui produisent des graines) sont pollinisés par les plants mâles par voie aérienne.
- Le pollen transporté par le vent peut parcourir plusieurs kilomètres.
- Figure 6
- Tableau 2 - Efficacité des herbicides



Figure 6 – Plant de grande herbe à poux après le stade idéal pour la lutte avec un herbicide.

Choix de produits contre la vergerette du Canada appliqués en présemis

Tableau 1: Efficacité visuelle d'herbicides ayant différents modes d'action, mélangés en cuve avec du glyphosate et appliqués avant les semis de soya contre la vergerette du Canada

Produit mélangé en cuve avec du glyphosate	Dosage	% d'efficacité
Eragon + Merge	14,4 g + 0,5% v/v	98
FirstRate*	17 g/ac	95
Amitrol 240**	3,3 L/ac	93
2,4-D LV Ester 700**	0,32 L/ac	86
Liberty	1 L/ac	75

* Les populations de vergerette du Canada sont également résistantes à cet herbicide.

** Doit être appliqué au moins 7 jours avant les semis.

Données : courtoisie de Peter Sikkema, Université de Guelph (Campus de Ridgeway).

Choix de produits contre la grande herbe à poux appliqués en présemis

Tableau 2: Efficacité visuelle d'herbicides ayant différents modes d'action, mélangés en cuve avec du glyphosate et appliqués avant les semis de soya contre la grande herbe à poux.

Produit mélangé en cuve avec du glyphosate	Dosage	% d'efficacité
2,4-D LV Ester 700**	0,32 L/ac	96
Amitrol 240**	3,3 L/ac	91
Eragon + Merge	14,4 g + 0,5 % v/v	87
FirstRate*	17 gal./ac	84

Données : courtoisie de Peter Sikkema, Université de Guelph (Campus de Ridgeway), basées sur sept études, sauf pour les données sur FirstRate qui sont basées sur huit études.

* Les populations de grande herbe à poux sont également résistantes à cet herbicide.

** Doit être appliqué au moins 7 jours avant les semis

Continued on page 23

Pourquoi les traitements d'herbicides en présemis sont-ils si importants dans le soya?

Continued from page 22



Figure 4

Source : Dr Peter Sikkema, Université de Guelph
Préparé par: Mike Cowbrough, MAAO/MAR



Figure 5

Source : Dr Peter Sikkema, Université de Guelph
Préparé par: Mike Cowbrough, MAAO/MAR

REMERCIEMENTS : Cette recherche réalisée par le laboratoire du Dr. Sikkema n'aurait pas pu se faire sans le concours de Chris Kramer (technicien de recherche) ainsi que les étudiants diplômés actuels et anciens Holly Byker, Laura Ford, Joanna Follings et Joe Vink. Le financement de ce projet a été fourni par le Conseil d'adaptation agricole, Monsanto Canada et les Grain Farmers of Ontario.

Lystek—Présentation d'un nouvel amendement organique

par Christine Brown, spécialiste en gestion des éléments nutritifs, MAAO et MAR



De quoi est fait Lystek?

Lystek est un biosolide liquide traité homologué par l'Agence canadienne d'inspection des aliments (ACIA) et considéré comme un produit commercial fertilisant.

- pH de 9,5
- Processus breveté comprenant des biosolides d'eaux usées + de l'hydroxyde de potassium + de la chaleur (70 °C) + un procédé de lyse (éclatement) homologué par l'ACIA— exempt d'agent pathogène (aucun PGEN ni de plan MSNA requis).
- 12 – 13 % de matière sèche (le procédé de lyse donne un produit plus aqueux et moins visqueux que le fumier de bovins

laitiers contenant le même pourcentage de MS).

- Environ 30 – 27 - 31 lb / 1000 gallons de N-P205-K20 assimilable l'année de l'application (fournissant une valeur fertilisante en oligoéléments de plus de 50 \$/ 1000 gallons)
- 12,50\$ / 1000 gallons livrés et appliqués
- L'usine principale est située à Dundalk, avec des installations à Elora, Guelph, St Marys et Iroquois.

Les matières sont transportées et épanchées à des doses variant entre 3000 et 4000 gallons /acre. La concentration d'azote ammoniacal est élevée; il est donc important que le produit soit injecté ou incorporé immédiatement afin d'éviter les pertes de N par volatilisation. Le coût d'application est inclus dans le prix du produit.

Quel est le meilleur moment pour épancher Lystek?

Comme pour tout élément nutritif ou matière semblable au fumier liquide, il est préférable de l'épancher dans la culture en croissance ou juste avant la croissance de cette dernière. Lorsque Lystek est appliqué juste avant que le maïs soit en place ou dans le maïs sur pied, il fournira la majorité des éléments nutritifs requis pour le

maïs. Lorsque Lystek est appliqué après la récolte de blé, une culture de couverture contribuera à l'utilisation des éléments nutritifs, évitant ainsi les pertes inutiles.

Bien que Lystek comprenne des biosolides et une certaine quantité de matière organique, le procédé de transformation utilisé le rend différent du fumier. La matière organique fournira le carbone nécessaire aux organismes du sol et contribuera à la santé du sol, surtout lorsqu'on l'utilise en combinaison avec une rotation incluant du blé ou des plantes fourragères ou des cultures de couverture. La chaleur et le pH élevé limitent la population microbienne du Lystek. Le produit procure environ 40 lb de calcium / 1000 gallons, mais il n'est pas vendu comme source de chaux pour les sols à faible pH en raison du pouvoir tampon de la plupart des sols.

Toute personne intéressée par ce produit dans le cadre d'une comparaison côte à côte avec un fertilisant ordinaire est invitée à participer à une étude de l'OSCA sur le sujet (communiquer avec christine.brown1@ontario.ca).

Pour des renseignements sur le produit, communiquer avec Mike Dougherty, 519 923-3539 mdougherty@lystek.com.



OSCIA NEWS

A NEWSLETTER TO UPDATE
OSCIA MEMBERS, PRESIDENTS,
SECRETARIES, TREASURERS, DIRECTORS,
AND OMAFRA AGRICULTURE DEVELOPMENT
CONTACTS

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Message from the President - Allan Mol



Happy Anniversary, OSCIA members! This year's Annual General Meeting in London recently marked 75 years for our association. Listening to our Past President Don Hill ('88) reminiscing about some of his memories and discoveries while sifting through our archive of minutes and reports, it was obvious that a half hour banquet speech couldn't begin to cover very much of our rich history. It was nevertheless very entertaining. The recognition given to eleven regional Lifetime Achievement Award winners also drew attention to a few of the people that have laboured steadfastly over the years, within their local communities. That brought the AGM to a fitting close.

So, where do we go from here? Our theme at the AGM was "Who Defines Sustainability?" Whether the question was answered with any degree of certainty is probably still up in the air. It doesn't seem that any one group has the ultimate ability to make their definition really stick. As farmers we would really like to have a say in what it means to us. Hopefully your provincial association also does its best to keep our ideas in the mix. Certainly, the work on Growing Forward 2 took up a lot of time and effort over the year past and recently the development of a special intake for PED has also carried that over into 2014. These no doubt, will give producers some new tools in defining what "sustainability" means to us, over the next few years. Now as we look towards an end to a long, cold and snowy winter, pretty much across Ontario, thoughts of a new crop year will be on our minds. Prices might not be where we hoped they would be and may affect our planting decisions. Whatever your challenges this season, I hope you can still find some way to involve yourself in Soil and Crop at the local level by doing a project, attending some workshops or crop tours. Maybe there will be some special 75th Anniversary event happening near you!

VISIT OUR WEBSITES:



www.ontariosoilcrop.org

&

<https://oscia.wildapricot.org>

It is an honour to be the 75th President of OSCIA . I have already been fortunate to serve these last few years as Provincial Director and as a Vice President. Just being able to meet with so many of our members in many regions of the province has been a rewarding experience and I look forward to even more in this next year.

Allan Mol, President, OSCIA




OSCIA Soil Champion Award

Adam Hayes, a Field Crops Soil Management Specialist with the Ontario Ministry of Agriculture and Food and Ministry of Rural Affairs (OMAF and MRA) has been the very first recipient of the OSCIA Soil Champion Award. This annual award was initiated by Don Lobb and Lillie Ann Morris who are both very well known for their passion towards soil conservation and soil health. Researchers, extension staff and conservation-minded farmers are increasingly concerned about soil erosion. It is important to direct attention to those who have excelled in the use and promotion of best soil management practices.



Left to Right: Henry Denotter, Harold Rudy, Adam Hayes, Lillie Ann Morris, and Don Lobb

The OSCIA Soil Champion Award was given to Adam for his exceptional career accomplishments in building and promoting soil health within the agriculture industry. Adam joined OMAF soon after graduating from the University of Guelph. He has served in many roles including soil conservation advisor, resource management specialist, soil and crop advisor, and has spent half his career as the soil management specialist in field crops. Adam initiated the Southwest Crop Diagnostic Days program at Ridgetown and chaired it for 13 years. He is currently co-chair of the Southwest Agricultural Conference. Adam spent much of his career promoting soil conservation and good soil management practices. He has also devoted a significant amount of time tracking agricultural climate change issues. Soil health is a key focus on many of his current efforts. Adam is an Ontario Certified Crop Advisor and has served on the provincial and international boards.

ATTENTION SEED GROWERS

~ ~ ~ ~ ~

OSGA Spring Workshop
at Four Points Sheraton in London

Fine-tuning Your 2014 Seed Production Plans

March 19th 9:30 a.m. - 3:00 p.m.

RSVP by March 13, 2014

Register here: <https://oscia.wildapricot.org>

OSCIA Celebrates 75 Years with Lifetime Achievement Awards

In February, OSCIA celebrated their 75th anniversary at the association's Annual General Meeting in London, Ontario.

Despite winter's wrath, over 200 delegates and special guests attended the meeting and celebration, braving yet another snowstorm.

OSCIA's 11 regions nominated a member who has dedicated their time and efforts to the association over the past number of years.



Front Row (left to right): John Posthumus (Ottawa Rideau), Eric Kaiser (Quinte), Sydney Ryzebol (Georgian Central), John Kinghorn (East Central), Martin Schneckeburger (Eastern Valley), John C. Benham (Heartland)

Back Row (left to right): David Ainslie (St. Clair), Nick Stokman (Thames Valley), Bruce Forrest (Northwestern), Allan Yungblut (on behalf of Jim Yungblut, Golden Horseshoe)

During the banquet, the 11 Lifetime Achievement winners were awarded a plaque and accomplishments recognized by OSCIA Past President Henry Denotter (2013).

Cobi Sharpe, Administrative Assistant, OSCIA

Special On-Farm Corn Trials - Farm Cooperators Wanted!

OSCIA, in cooperation with OMAF and the University of Guelph (Ridgetown Campus) is looking for farm cooperators across Ontario willing to plant field-scale corn comparisons of neonicotinoid (eg. Poncho, Cruiser or Stress Shield) versus non-neonicotinoids. A combine width treated plot with neonics and a combine width of (non-neonics) fungicide only of the same corn variety will be required. Contact your corn dealer to obtain a bag of each, one treated with a neonic product and the other bag non-treated (fungicide only).

The objectives of these plots are to:

1. To determine key early season pests in Ontario corn and develop risk maps, and,
2. To measure the economic impact of neonicotinoid seed treatments for early season pest control.

The target is to establish 100 on-farm, field scale plots across Ontario. The variety you select doesn't matter as long as it is suited to your heat unit area and the same variety is used for both treated and non-treated.

Full details and a specific plot layout with protocols are required and this information is available on OSCIA's website at:

www.ontariosoilcrop.org/docs/OSCIA_Member_Study_2014-CORN_ONLY.pdf

OSCIA is making available a Grant of \$500 (based on the Project Grant guidelines) for each local association.

Jocelyn Smith at Ridgetown is the lead for this project. For further questions, Jocelyn can be reached at jocelyn.smith@uoguelph.ca, 519-674-1500 ext 63551 (note: email is the best contact).



Forage Rainfall Plan Improved for 2014 Agricorp

Following a review of forage insurance in Ontario, Agricorp has made several improvements to the Production Insurance forage rainfall plan for 2014. Agricorp and OMAF worked with an industry review committee to identify the needs of producers, review possible solutions, and establish priorities. Agricorp thanks OSCIA for their involvement in this committee.

The five improvements for 2014 include:

- increased flexibility in coverage values,
- an improved correlation between rainfall and yield used for claim calculation,
- an earlier rainfall claim trigger,
- the addition of a price index to reflect higher costs in times of forage shortage, and
- a minimum daily rainfall threshold to exclude amounts lost to evaporation.

The improvements to the 2014 Forage Rainfall Plan are a first step in response to Agricorp's commitment to industry and producers.

More details about these changes are included in both customer renewal packages and in the [forage rainfall section of agricorp.com](#). New customers can apply before **May 1, 2014**.

Willing to share forage yield information?

Agricorp is looking for growers willing to share forage yield information to help enhance forage insurance in Ontario in the future.

Agricorp would like yield information for the 2014 crop season for all cuts, forage types and end uses. Current participation in production insurance is not required.

For more information or to volunteer, please contact Debbie Brander at 1-888-247-4999 or debbie.brander@agricorp.com

Debbie Brander, Senior Industry Specialist, Agricorp



OSCIA Environmental Cost-share Programs

OSCIA is currently accepting applications for two environmental cost-share programs: the **Water's Edge Transformation Program (WET)** and the **Grassland Habitat Farm Incentive Program (GHFIP)**. Applications for both programs can be completed online and are being accepted until March 31st, 2014.

The **WET** program aims to enhance agricultural riparian systems and is available for farms in the Lake Simcoe, Nottawasaga and Severn Sound Watersheds (a map with eligible funding areas is available on the OSCIA website). Applicants must have a stream, shoreline, wetland, pond or river on their farm properties. They must also have a 3rd or 4th Edition Environmental Farm Plan. For more information visit <http://www.ontariosoilcrop.org/en/programs/wet.htm>.

GHFIP is available for producers across the province to support grassland bird species such as the Bobolink and Eastern Meadowlark. Through implementing select Best Management Practices (BMPs) farmers can contribute to protecting the habitat of grassland species. The benefits for farmers include being able to enhance current grazing systems, reincorporating underused or abandoned pasture into active grazing management and adopting different practices to enhance resource efficiency. Farm businesses must have a 3rd or 4th Edition Environmental Farm Plan to participate. Further information about the program can be found on the OSCIA website; the GHFIP brochure and program reference guide contain details on how to apply. For more information visit http://www.ontariosoilcrop.org/en/programs/grassland_habitat.htm.

OSCIA Commitment to On-farm Trials and Projects - Round Table Discussion

At the recent OSCIA Annual Meeting in London, a Round Table discussion explored the organization's involvement in on-farm trials and projects. The input and suggestions provided will assist the OSCIA executive and OMAF Field Crop staff to better meet the needs of members. The discussion by the 80 delegates was lively and engaging, and is summarized in Crop Talk Volume 14, Issue 1, March 2014.

Ian McDonald, Applied Research Coordinator, OMAF and MRA



2014 Suggested Potential OSCIA Farmer Projects Listing

The following list of potential field projects that OSCIA local and regional associations might consider has been compiled by the OMAF Field Crop Unit. Some of these projects are ongoing while others are new ideas. There is always interest in adding more data and opportunity for collaboration on any of the projects.

If any of these ideas are of interest to your group, please contact Ian McDonald (ian.mcdonald@ontario.ca or 519-239-3473) who will put you in touch with the right Field Crop Unit contact or supply assistance on protocol and procedures as appropriate.

- Boron on Corn
- Nitrogen Fixing Corn
- Neonicotinoid seed treatment evaluations
- Smart corn (5-50-fungicide) 1 year left
- Cover crop project (Joel Bagg, Ian McDonald, Scott Banks) 2 years left?
- Variable Rate corn seeding
- Corn under plastic (SAME planter)
- Evaluation of yield loss in corn overlap areas
- Fungicide plus KP+ or PHI 42 at VT on corn or R2 on soybeans
- Greenseeker and Y-drops on waist high corn. Evaluate the 36 ppm factor.
- Protected nitrogen on corn and wheat
- Cover crops into corn
- Cover crops into soys
- Evaluation of tillage to allow deeper root growth and more water availability (Tom Kilcer talk, SWAC)
- Chopping corn headers: benefit or detriment into no till soys
- Nitrogen response curve evaluations winter wheat, winter barley, spring wheat, barley, oat
- High speed seeding evaluations (Vaderstad, Amazone)
- Leaf burn mitigation on wheat
- Plant growth regulators on wheat and barley

- All-In (NPK) Spring Strip Tillage for Corn.
- Manure N Efficiencies for Direct Injection versus 6 hour versus 24 hour Incorporation.
- Tramlines for Herbicides, Fungicides and Winter Wheat Seeding in Full Season Plus Soybeans.
- Can I use a PSNT as a Top-up Indicator if I have Already Broadcast N at Planting?
- Tillage Challenge: Disc Ripper versus Vertical Tillage.
- Hybrid Mixing to Boost Yields and Improve Dry Weather Resiliency.
- Can I Use My RTK System to Farm on the Contour?
- Using Your Wheat Field to Recommend N Rates for Corn.
- Corn Plant Population X Nitrogen Rates
- Corn Response to N Rates/PSNT
- Corn Yield/Mycotoxin Response to Foliar Fungicide
- Corn/Soybean Response to AWAKEN ST and/or other cra...
- Soybean Response to Foliar Fungicide/ Foliar Fertilizer (KP plus)
- Soybean Yield Response to Long Maturity
- Side dressing waist high corn with green seeker
- Fungicide + KP plus on white beans
- Lumiderm seed treatment comparison on spring canola
- Spring cover crop prior to edible beans
- Inter seeding cover crop into corn, soys, or canola
- Sulphur rates on alfalfa, corn, canola, cereals
- Seeding rate in spring canola
- Pod Sealant on dry beans or canola
- Deep banding manure
- Side dressing N in edible beans
- Split N application in edible beans, canola, Corn, cereals
- Field scouting using remote sensing
- Pasture response to nitrogen using pasture cages or pre stocking sampling
- Forage yield, bale density, bale weight of various bale sizes

2013 CROP ADVANCES

Premier Website for Applied Research on Soil & Crop management

2013 Crop Advances is now available on the OSCIA website at:

<http://www.ontariosoilcrop.org/cropadvvol10.htm>



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- OG Mandino

John Vanthof MPP/député
Timiskaming-Cochrane

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"If you can't return a favour, pass it on."

- Louise Brown

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"Nothing I've ever done has given me more joys and rewards than being a father to my children."

- Bill Cosby



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"Enthusiasm is excitement with inspiration, motivation, and a pinch of creativity."

- Bo Bennett



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"There is nothing in a caterpillar that tells you it's going to be a butterfly."

- R. Buckminster Fuller

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Youth Ag Talk North East



**Earlton Farm Show
Friday April 11th, 2014 at 6 p.m.**

**Public Speaking
Competition**

Topics:

CHOOSE ONE OF THE FOLLOWING:

- I am a Canadian farmer and this is my success story
- Why succession planning is crucial to the future of Canadian agriculture
- As stewards of the land, can Canadian farmers do more?
- Why social media is an opportunity farmers can't ignore
- Why I am choosing a career in agriculture

Age Categories:

Ages 11-15

Ages 16-24

Speech length must be 4-6 minutes.
There will be cash prizes for the top
three speakers in each category.

Deadline to enter is April 1st, 2014

*Limited to the first 20 registrations



For more information, contact: Liz Potter: (705) 563 2752 or Elaine Bowman: (705) 563-8444

Email: youthagtalk.northeast@gmail.com

Attention Producers hiring summer students! Funding is available

The Northern Summer Jobs Service 2014 program has been launched and information is available on the Ministry of Northern Development and Mines (MNDM) website. In addition, MNDM staff (Northern Development Officers, Northern Development Advisors and/or Administrative Assistants) will be sending information packages to past participants and clients that they have received requests from.

You can access the information on the MNDM website by typing in the following short form web addresses.

For the English site it is:

www.ontario.ca/northernsummerjobs

For the French site is:

www.ontario.ca/emploidetunedunord

Please contact your area Northern Development officer with MNDM for more information

New Liskeard: Anne Marie Leroy
anne-marie.leroy@ontario.ca

Kirkland Lake: Laurie Ypya
email : Laurie.Ypya@ontario.ca

Iroquois Falls: Joanne Grenier

email: Joanne.Grenier@ontario.ca

Timmins: Graham Campbell

email : Graham.Campbell@ontario.ca

Cochrane: Joel Richard

email: joel.richard@ontario.ca

Kapuskasing: Michel Lamontagne

email: michel.lamontagne@ontario.ca

Hearst: Serge Alary

email: serge.alary@ontario.ca

Northern Ontario Farm Innovation Alliance

March Update

Continued from page 3

same group met with Minister of Agriculture Ted McMeekin and were given a 2 year moratorium on the NLARS facility and staff to allow the agricultural community to develop a business plan to sustain and advance research throughout the North.

In February 2013 the Northern Ontario Farm Innovation Alliance was visualized and by mid- June 2013, the corporation was structured with funding proposals submitted to South Temiskaming Community Futures, Northern Ontario Heritage Fund, Growing Forward 2 and a Stage One proposal to FedNor.

NOFIA will provide a research and innovation infrastructure for Northern Ontario Agriculture by creating partnerships that will become the core of a center of excellence for Northern Ontario.

This sustainable research and innovation infrastructure will address the future needs of the industry by establishing financial and advisory partnerships with farmers, commodity groups, education institutions, other research facilities, private sector industries and economic development agencies.

Through establishment of regional advisory councils made up of industry partners we will develop projects to determine direction with the ultimate goal producing direct research and development relevant to commercialization.

NEW OFFICES

The City of Temiskaming Shores has donated office space in the

NEW ADMINISTRATOR



Stephanie Vanthof

Community Hall on Whitewood Ave in New Liskeard. NOFIA will hold a grand opening of its offices on Friday March 28, 2014 at 1 pm. During our open house Jay Aspin, MP for Nipissing-Timiskaming will be making an announcement so if you are in the area, please plan to attend.

Northern Ontario Farm Innovation Alliance (NOFIA) are pleased to announce Stephanie Vanthof has joined the newly formed Not-For-Profit Corporation as Administrator. Stephanie was raised on a dairy farm in the Englehart area and has experienced first hand the unique challenges and opportunities faced by both large and small farms in Northern Ontario.

Her education includes an M.Sc in Geography and Environmental Studies from the University of Toronto, a B.E.S in Environment & Business and a diploma in Human Resource Management from the University of Waterloo.

Stephanie will begin her new position on April 1, 2014 at the NOFIA main office in the City of Temiskaming Shores.

Thank you for your interest in the Northern Ontario Farm Innovation Alliance (NOFIA). If you have questions or need more information, please contact us at bowen@parolink.net or ckidd@temiskamingshores.ca.

Remember – Earlton Farm Show will be held on April 11th & 12th 2014. Watch for our booth.

INTRODUCING: NOFIA'S INAUGURAL BOARD OF DIRECTORS

Board Member	Name	Farm Name & Industry
President	Norm Koch	Koch Farms Agri-Sales Inc. – Cash Crop and Elevators
Vice President	Yves Gauthier	North Haven Farms – Dairy & Cash Crops
Secretary Treasurer	Darlene Bowen	WindenBow Farm - Horses
Director	Carman Kidd	Kiddcrest Farms and Mayor of Temiskaming Shores – Dairy & Cash Crops
Director	Adrian Struyk	Farm of Adrian & Margaret Struyk – Dairy & Cash Crops
Director	Jim Johnston	Pasture Hill Farms – Sheep & Beef
Director	Matt Bowman	Bowmanlea Farms – Beef & Cash Crop
Director	Dennis Jibb	Double Ridge Farms – Dairy & Cash Crop

Breaking Ground (in Northeastern Ontario)

Modern Meat Marketing



SMALL SCALE FARM
INNOVATIO
CENTRE



by Katie Filion, Market Development Specialist, RAIN

On February 7th and 8th, 2014, the Rural Agri-Innovation Network (RAIN) hosted the RAIN Agriculture and Food Symposium in Bruce Station, Ontario.



The third-annual event was comprised of two sessions: "Marketing and Innovation for Local Food Producers," with discussion led by Bryan Gilvesy of Y U Ranch in Tillsonburg, Ontario; and "Northern Hardy Fruit Production," led by Dr. Bob Bors from the University of Saskatchewan. Over the two-days nearly one hundred farmers and agri-businesses were in attendance, learning new techniques and strategies from expert speakers.

On Friday evening, Bryan Gilvesy, one of the 2013 Premier's Award winners, led an inspiring discussion about marketing and innovation in the local food system. Bryan and his family operate Y U Ranch, a grass-fed beef business dedicated to improving the environment on their farm. Bryan's passion for farming were evident in his presentation, as he shared his family's experience transitioning from tobacco production to grass-fed beef, and how this shaped the way Y U Ranch markets their beef.

Transitioning from a commodity market, Y U Ranch was determined to maintain control in their business, and opted to sell their premium grass-fed beef in the local food market. Like northern Ontario food producers, Y U Ranch struggled with distribution challenges getting product to the market. Bryan shared how these challenges inspired Y U Ranch to develop the gas/hybrid electric mobile freezer mini-van which won the family the 2013 Premier's Award for Agri-Food Innovation. The freezer van not only serves as a means to distribute their grass-fed beef to restaurants, but

as a mobile market stand Bryan's family can take to farmers' markets. Additionally, Bryan shared tips on marketing within the local food system, emphasizing the importance of knowing your customer and adding value. Y U Ranch's successful marketing and distribution system has allowed them to sell their premium brand direct to restaurants and consumers locally. For more information on Y U Ranch, please visit: www.yuranch.com.

To access presentations and materials from the RAIN Agriculture & Food Symposium, or for more information on RAIN, please visit: www.rainalgoma.ca/resources, or contact Katie Filion, RAIN Market Development Specialist, at 705.942.7927 Ext. 3024.

RAIN's next event is the Eat Algoma Local Food Festival. This festival will serve as an opportunity for northern Ontario producers to market and sell locally-produced foods direct to consumers in Sault Ste. Marie and the Algoma district. Vendor spots are available, and registration forms can be found on www.eatalgoma.com.

Growing Fruit Trees in Zone #3

By Graham Gambles, Regional Communication Coordinator, NEOSCIA

Ron Lewis of Naughton was a guest speaker at the RAIN symposium in Algoma on February 8th. He sells "Foolproof" varieties of fruit trees that meet the standard required to survive in "Plant Hardiness Zone #3", typical of Sudbury. He has been involved in this segment of agribusiness since the 1970's, but it was the Mount St. Helens volcanic eruption of 1980 that gave him the opportunity to evaluate the relative hardiness of western vs. southern grown fruit tree varieties. Lewis says that within two years of the eruption, the global cooling associated with the event led to the local winterkill of most fruit trees originating in southern Ontario, while the stock from western Canada fully survived. Since then, he has only carried western grown varieties for sale in northern Ontario.

Currently, he carries 6 varieties of the dwarf "romance" line of sour cherries developed at the University of Saskatchewan. Despite the 'sour' reference, the cherries are in fact very sweet, as long as they are not picked when they are bright red. (The grower must wait until they darken to crimson or deeper shades.) These cherries are the mainstay of the processing/fruit pie industry. Some growers use a refractometer to help gauge the sugar content and thereby determine the picking date. As a point of caution, note that deer love the sour cherry, and have been known to eat both limbs and trunk.

There are many good varieties of western apples, but they are often biennial in production. This issue can be solved by removing a high portion of the bloom (through high pressure water blasts) or by removing 75% of the small fruit in July. (Small fruit is a high source of pectin.) This results in larger individual apples (up to 5 bu./tree) and a stronger tree that will reproduce on an annual basis. Western trees are far more productive than southern trees, and the biggest problem is often being able to economically distribute the product!

To control pests such as the codling moth, Lewis uses Safers "BTK" after the blossoms fall off. In the case of Apple Borer control, he notes that the insect always burrows into the trunk just above ground level. To reduce pesticide use, he uses a thin length of wire to slide into the hole and piece the single insect located there.

When purchasing fruit trees, Lewis recommends that you purchase the smallest trees available, especially if they are potted. These plants are the cheapest and easiest to transport, and they transplant more successfully than larger trees. Since 2009, when CBC North did a radio program on his operation, he has had excellent uptake by local clients who want control over their family food intake. Contact Ron by Email at ronlewis@unitz.ca or google: ron's fruit trees.

N.E.O.S.C.I.A.

North Eastern Ontario Soil and Crop Improvement Association
Serving the Northern Agricultural Community since 1966

Thunder Bay Farmer President of OSCIA

At the Ontario Soil & Crop Improvement Association's Annual General Meeting in February, Allan Mol, the Director for the Region of North Western Ontario, was elected President of the organization for the current year.

Allan has been a dairy farmer in the Thunder Bay area of Northwestern Ontario since 1981. The 550 acres of Slate River Valley farmland is owned and rented by the Valley Centre Farms partnership which includes his wife, Margaret, along with his brother, Henry, and wife, Jenny.

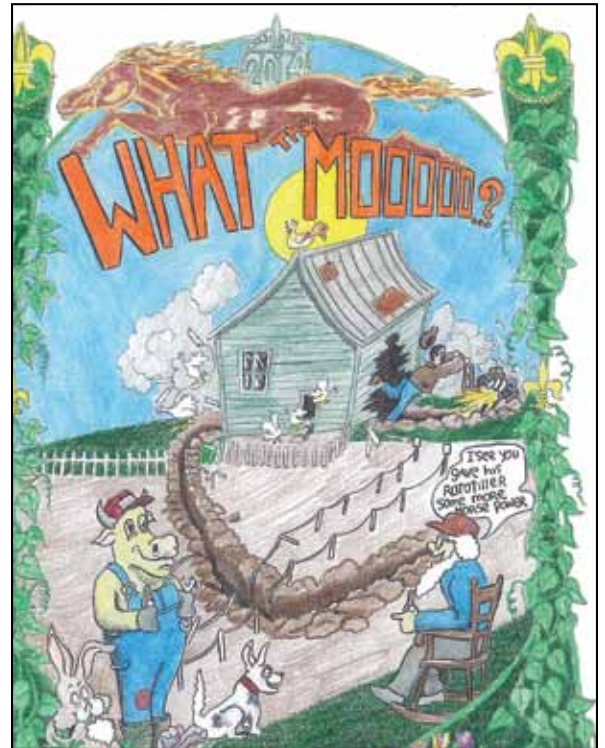
Allan and Margaret have six children, Christina, Erica (Russ, Mackenzie, and Zoe), Scott, Clark, Gabrielle and Madeline.

Allan's dedication and interests in farming have led him to grow in his knowledge in many areas. As a family farm, they have worked together growing as much of their own animal feed as possible. Finding crops that are best suited for the dairy herd of approximately 90 milking cows and 100 dry cows/replace-ment heifers is Allen's main goal.

Allan has always been involved in many committees such as church boards, Thunder Bay Agricultural Research Station and in the Thunder Bay Soil and Crop Improvement Association. Most of the time he serves a leadership position because he is very comfortable with people.

It is important to Allan to draw attention to the uniqueness of farming in Northwestern Ontario. Allan appreciates the diverse climate and the challenges of isolation.

Also participating on the Executive are First Vice President Alan Kruszel of Stormont County, Second Vice President Gord Green of Oxford County, and Third Vice President Mack Emiry of Massey (representing the Region of North-Eastern Ontario).



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

U of G Ends Teaching At Alfred and Kemptville

By Graham Gambles, Regional Communication Coordinator, NEOSCIA

The agricultural community of eastern Ontario was very surprised on March 12 when University of Guelph president, Alastair Summerlee announced that the institution was "consolidating regional Campus programs" to their Ridgetown and Guelph facilities. Summerlee, who is ending his term as president of U of G in the near future, said the following: "We are operating in an era of scarce resources. We must make difficult decisions together with changes that minimize duplication and preserve programs that are unique and central to our mission. This requires us to respond to current and future challenges while meeting the needs of an evolving sector."

There will be no new student intake by U of G at either Alfred or Kemptville in the fall of 2014. However, students who are eligible to complete their 2 year courses will be able to do so before the teaching facili-

ties are shuttered in 2015. It is expected that the "mandated two-year associate diploma programs" will transfer to Ridgetown, while the "four-year bachelor of bio-resource management (BBRM) equine management degree", taken at Kemptville for year 1 and 2, will be run totally on the Guelph campus.

Consolidation will eliminate 112 full time positions at the two facilities, plus a number of part time and casual workers. There will be few opportunities for transfers to Guelph or Ridgetown. In this regard, Summerlee said: "We regret that valued employees will be affected by this decision. This action is in no way a reflection on the importance of their past contributions. Our focus must continue to be on providing training that best supports the Province's priorities for agri-food research, education, and outreach." The decision will reduce

expenses by \$6.9 million (per year) over the long term, but will be offset by immediate upgrades required at both Guelph and Ridgetown in preparation for the change.

Although U of G will move the dairy research to its huge Elora facility, they will continue to manage field crop research at both satellites. Research at New Liskeard Agricultural Research Station will continue as is for the "immediate future". Since the U of G news release was made public, College Boreal of Sudbury and La Cite Collegiale in Ottawa announced that they would work with Guelph to continue French programs (in agriculture) for francophone students at Alfred, where Boreal has been offering a veterinary technician program since 2000. La Cite is also evaluating the potential of a new on-line program of agricultural courses for francophone students.