Breaking Ground

(in Northeastern Ontario)

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

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Our e-mail address is: *gamblesgraham@yahoo.ca*

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

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

Breaking Ground

(in Northeastern Ontario) *Summer 2014*

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

75th OSCIA Anniversary
Grassroots Innovation Since 1939

Land Clearing 2014

by: Graham Gambles, Regional Communication Coordinator, NEOSCIA

Back in 2009 at the Earlton IPM, a new machine for land clearing was demonstrated, clearing a spruce bog for future farm production. This year, a new company has been incorporated in Temiskaming and has added a tracked forest mulching machine to its equipment list. Demora "Operations Manager", Bill Muggler (a former NEOSCIA Regional Director) believes that the time has come for the use of such a machine in the north. He says that restrictions on windrow burning by various townships and the MNR slow the development of new farmland, and that new techniques must be employed to encourage farm expansion. To this end, a mid June demonstration of the machine was held at the northern tip of "Casey Mountain" on Hwy 65 East. (Stop and take a look if you are in the area.)

Ideally, a site would have harvestable timber removed in the first winter. It is possible that lower quality biomass could be collected and sold to a wood pelletizing plant as well. The unit featured in the photo would then shred the remaining debris and stumps in the spring. A second machine would be used to dig down into the future plow layer and destroy all roots close to the surface. The topsoil will therefore be saturated with woody fibres that will break down relatively quickly by micro-organisms. Note that carbon decomposition is enhanced by nitrogen availability, so a forage stand with a large clover component would be ideal for the first ground cover.

This is innovative technology, and field research must be done to investigate the cropping requirements of rapidly changing forest land into productive farmland. This is the type of innovative work that the OSCIA "Major Grants" and NOHFC/FedNor government programs were designed for. See for yourself at the next demonstration of this machine, to be held on Thursday, July 24, at 3 pm along Hwy #11 near the Larder Lake/Tomstown turnoff, just south of Englehart. This opportunity will complement the morning Temiskaming Canola tour and the Temiskaming Crop Coalition "Twilight Crop Tour", to be held in the evening, starting at the Koch Farm elevators.

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

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

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Go to GeoVisage, http://geovisage.nipissingu.ca for Current and Historical Weather Data

COMING EVENTS

Sudbury District Event

Attend the St. Germain Farm Museum Summer Festival, July 5,6. Featuring live local musicians, vintage tractors, farm machinery displays, and the Slow Tractor race. In addition to these outdoor events, enjoy the indoor display of local museum artifacts. Located at 679 Dominion Drive, Hanmer (705-969-5027)

Manitoulin Summer Tour

The MSCIA are hosting a summer tour during the first week of August. Tour dates and site locations will be announced shortly. The tour will include the following:

"Grain and cereal corn plots, hulless barley and hulless oats plots, equipment demonstrations and more" Stay tuned to your local newspaper or your email inbox for tour specifics.

REMINDER

NLCAT AGGIES REUNION AUGUST 15-17, 2014

This is a final reminder for a once in a lifetime Reunion Weekend which will provide alumni a great opportunity to rediscover their New Liskeard "home" and to renew lifelong connections to this special place. It's a fantastic time to reconnect with friends and classmates and see how the community of New Liskeard (now called Temiskaming Shores) has evolved, including the New Liskeard Agricultural Research Station (NLARS).

Events include a Friday night reception and a Saturday night banquet at Dymond Hall. 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. Registration form and money must be received no later than Thursday July 31, 2014.

Suggested optional activities include a tour of New Liskeard Agricultural Research Station, Friday afternoon at 1:30-4:30 pm, the New Liskeard Farmers Market (Riverside, Saturdays, 8 till noon); a 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; a 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/

PLEASE indicate [on your cheque] if you prefer a roast beef or roast chicken supper at the banquet dinner!

Make the cheques payable to Don Leggett and mail to Candy Keith, 450 Ethel Street, Box 586, Haileybury ON P0J1K0. Please consider your cancelled cheque to be your receipt. If you have any questions, please contact Jean-Denis Methot @ jd40@xplornet.com or call at 613-307-7427.

Temiskaming Farm Tours

Block off Thursday, July 24, for a full day of education in Temiskaming! The events start at 10am at host Koch Farms (elevator) at Earlton. First up is the annual northern Canola Growers tour, where annual trials will include the new Lumiderm seed treatments, fungicide, and foliar fertilizer treatments. Staff from the University of Guelph will discuss Swede Midge monitoring and provide control updates.

At 3pm, at the junction of Hwy #11 and the Tomstown /Larder Lake roads, (north of Earlton, but south of Englehart), Bill Muggler of Demora Construction will host a demo of their new forestry mulching machine that is used for preparing agricutural land. Park on Harman road to avoid congestion on the Highway!

Return to Koch Farms elevators at Earlton after 4:30 pm to enjoy a BBQ and a social time before boarding the buses that will take you on the annual "Twilight Tour" of local field crop demo's. Hosted by Temiskaming Crop Coalition, the primary stop will be the NLARS agronomy crop trials, where John Kobler will lead us through his maze of annual (and perenial) crop trials!

"A true friend is one who overlooks your failures and tolerates your success."
– Doug Larson

"Just because something doesn't do what you planned it to do doesn't mean it's useless."
– Thomas Alva Edison

"Happiness is not something ready made. It comes from your own actions."
– Dalai Lama

"You may be disappointed if you fail, but you are doomed if you don't try."
– Beverly Sills

"Freedom is not worth having if it does not include the freedom to make mistakes."
– Mahatma Gandhi

"Your most unhappy customers are your greatest source of learning."
– Bill Gates



CROP TALK

OMAFRA Field Crop Specialists – Your Crop Info Source

Ministry of Agrculture and Food, Ministry of Rural Affairs, Crop Technology Branch

Agricultural Information Contact Centre: 1-877-424-1300
Publication Order Centre: 1-888-466-2372
Northern Ontario Regional Office: 1-800-461-6132
OMAFRA Web Site: *www.omafra.gov.on.ca*

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Current field crop information as it happens!

@onfieldcrops

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Bonnie Ball, Soil Fertility Specialist
Scott Banks, Emerging Crops Specialist
Tracey Baute, Field Crop Entomologist
Horst Bohner, Soybean Specialist
Christine Brown, Nutrient Management Program Lead
Mike Cowbrough, Weed Management Program Lead
Brian Hall, Canola & Edible Beans Specialist
Adam Hayes, Soil Management Specialist - Field Crops
Peter Johnson, Cereals Specialist
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Scouting Alfalfa Fields for Potato Leafhopper

by Gilles Quesnel, Field Crop Integrated Pest Management Specialist, OMAF and MRA

Cropline 1-888-449-0937

Most years, potato leafhopper (PLH) is the "# 1 insect pest" of alfalfa. While PLH is seldom a problem on the first cutting of established alfalfa stands, the insect can start damaging new seedings as early as mid-June. The damage done by PLH is not as dramatic as the leaf shredding done by an alfalfa weevil outbreak, but the plant stunting caused by PLH significantly reduces alfalfa yield and quality *(Figure 1)*.

The Insect

Leafhoppers usually arrive in Ontario in late-May. Adults are 3 mm (1/8 inch) long, lime green and wedge-shaped (Figure 2). The juvenile leafhoppers or nymphs are about 0.8 mm (1/32 inch) long when they hatch. They resemble adults, but are wingless and are often found on the underside of the leaves.

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Ministry of Agriculture and Food
Ministry of Rural Affairs
Ontario

Scouting Alfalfa Fields for Potato Leafhopper

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Figure 2 - Adult potato leafhopper

Damage

Both the adults and nymphs feed on alfalfa. Potato leafhopper feeds by inserting its mouth piece at the tip of the leaf and sucking plant juices from the alfalfa plant. While sucking the plant sap, PLH injects a toxin into the plant, which interferes with transportation of fluids and nutrients in the leaves. The result is the characteristic "hopperburn", which starts as a wedge-shaped "V" yellowish pattern at the leaf tips (Figure 3). The injury often goes undetected, with leaf yellowing and cupping, and plant stunting dismissed as "drought damage" or nutrient (boron) deficiency.

Figure 3 - Hopperburn symptoms

When left untreated, high PLH populations can reduce al-falfa yields by 1 tonne per acre or more, or the equivalent of a mid-summer alfalfa cut. PLH feeding also reduces root development and the crude protein level of the alfalfa harvested. Reduced yield and vigour in severely damaged stands carries over to future years, and can result in increased risk of winterkill.

Leafhopper damage is most severe in new seedings and during regrowth after cutting. Most of the PLH damage oc-curs from June to mid-August. High-risk factors include hot, dry seasons.

Scout Before Damage Occurs

It is important to identify the presence of leafhopper populations before the damage occurs since economic losses occur before visual plant symptoms appear. If leaf yellowing has already started, it is too late to prevent damage to that cutting and harvesting is the best option. Scouting with a sweep net will help you determine whether early harvest or spraying is needed. In new spring seedings, start scouting fields when the plants are 10 to 15 cm (4 - 6 inches) high. Scout at intervals of 5 to 7 days. In established stands begin scouting after first-cut, when plant regrowth is 5 to 10 cm (2 to 4 inches) high.

To determine the number of leafhoppers present, including adults and nymphs, take 10 sweeps and divide by 10. Do this in 5 representative areas of the field and note the height of the alfalfa.

Recommended action thresholds are as follows:

Recommended Action Thresholds	
Stem Height	Average Leafhoppers per Sweep1
9 cm (3.5 in.)	0.2 adults
15 cm (6 in.)	0.5 adults
25 cm (10 in.)	1.0 adults or nymph
36 cm (14 in.)	2.0 adults or nymph

[1] 1 sweep = 180° (half circle) sweep with the net.

Management Strategies

- Alfalfa varieties resistant to PLH are available. These varieties have glandular hairs, both on the leaves and stems that act as mechanical barriers to PLH feeding. Varieties rated Highly Resistant (HR) to PLH include FSG400LH, TrailBlazer 4.0, WL345LH, and Pioneer 53H92 (www.goforages.ca). The glandular hairs are not fully expressed the first year, so treat new seedings of PLH-resistant varieties the same as regular alfalfa.
- When considering whether to use a PLH-resistant variety, include the level of PLH infestation expected in a typical year. PLH is typically more of a problem in the Lake Erie counties and Niagara area. Also consider the cost of scouting, insecticide and spraying, and the cost and performance traits of the PLH resistant variety, such as yield and disease resistance.
- Cutting alfalfa early will potentially reduce PLH egg, nymph and adult populations. A naturally occurring fungal pathogen helps reduce the populations of the PLH under cool, moist conditions.

Refer to OMAF/MRA Publication 812, "*Field Crop Protection Guide*" and product labels for insecticide information.

What is the Correct Time to Apply Foliar Fungicides to Soybeans?

by Horst Bohner, Soybean Specialist, OMAF and MRA

Spraying soybeans with a foliar fungicide has not been common practice in Ontario. Over the last 10 years there has been increased interest in applying foliar fungicides to soybeans. Many trials have been conducted in Ontario to assess the yield and seed quality benefits. Averaged across 5 years of trials the average response has been 2.3 bu/ac. Seed size and quality can be improved, especially when there is significant disease pressure. In 2012 Dr. David Hooker (University of Guelph, Ridgetown) conducted trials to evaluate the correct timing for maximum economic return. The trial results were surprising in that soybeans responded more when sprayed relatively early. An application at the R2.5 growth stage (full flower) provided more yield than at later growth stages. *Refer to Figure 1.*

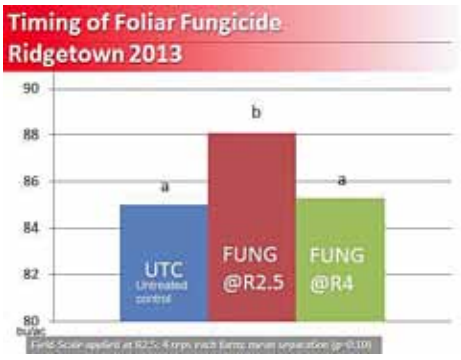

Figure 1

Although the economic return on fields with no disease is questionable, it does appear that earlier application timing may be necessary to maximize yield response. More trials are being conducted in 2014 to assess the best timing, including in-furrow applications. Stay tuned for the results.

The Appeal Of Late N Applications In Corn

by Greg Stewart, Corn Specialist, OMAF and MRA

Recently there has been a fair bit of attention paid to late applications of nitrogen (N) in corn. Three things have contributed to this excitement:

1. Equipment that can deliver N (principally 28% - UAN) into much taller corn than traditional tractor-drawn sidedress equipment. This includes high clearance sprayers equipped with injection coulter toolbars or drop tube systems.
2. American high corn yield contest winners have been speaking in Ontario about how late (around tassel emergence time) N applications boost corn yields to new heights.
3. Research in the US Corn Belt has shown that new hybrids tend to take up more N post-silking than older hybrids. When this research was recently summarized, the amount of N taken up post-silking averaged 37% of the total crop uptake of N (Pioneer Crop Insight, March 2014).

Here are a few reminders to consider as we search for improved corn yield and improved nitrogen-use efficiency through later applications of nitrogen.

1. Ontario research supports the idea that split applications of N improve profit potential, especially if better N rate decisions based on rainfall, yield potential, soil nitrate status and crop colour can be made. The movement to high clearance equipment widens the window to make these "split" applications, and this may be a critical step forward in improving N management. However, if "improved" N rate decisions are not part of the system and we simply apply the same amount of N but do it in two applications rather than one, the profit improvement will not be as great.
2. While we consider 30 lbs of N per acre adequate to carry a corn crop to the typical sidedress window, it will likely be insufficient to carry a crop to waist high or beyond. 60—100 lbs/acre is probably a safer early season N rate.
3. Applying 240 lbs/acres of N early in the season and then coming back with another 60 lbs/acre at tassel time to win a yield contest is a much different context than applying 100 lbs/acre early and then coming back with 60 lbs/acre later to try to get improved yields. Dry soils, lack of soil incorporation, or no rainfall after the application of N, may result in the N supply being restricted to the corn plant and therefore a considerable risk of lower yields if only 100 lbs of N is actually available during peak demand periods.
4. The risks of not getting the N into the soil matrix are real and they increase as you delay N application later into the season. As we move to understand late applications of N and how to manage the options, it might be best to consider waist-high applications as a less risky option than waiting to chest high or tasselling corn.

We look forward to researchers, corn producers and industry personnel working together to refine nitrogen management systems that fit with modern high yielding hybrids and generate improved profitability and greater efficiencies in the way we use N fertilizers. 2014 will generate a significant amount of Ontario experience on later, high clearance applications of N in corn. Keep an eye out for these developments.

Things To Watch For In 2014 Corn

by Greg Stewart, Corn Specialist, OMAF and MRA

1. Strategic N Management Can Pay

If you apply all your nitrogen (N) preplant it is difficult to maximize return on your dollar invested in N. Split applications are often more profitable. However, the profit boost is not just from splitting. It really comes when the second application is adjusted for soil N supply. If you put 100 lbs down up front and side dress 40, that can improve returns somewhat. But if you put 100 lbs down up front and then use the weather and soil nitrate tests to decide whether this is the year you should sidedress 0,40 or 80 lbs, then the potential to improve returns jumps considerably.

2. Streamer Nozzle Application of UAN Has Risks After 4 Leaf Corn

Producers can apply UAN (28%) using streamer nozzles over the crop canopy up to the four-leaf stage with a little leaf burn but no yield loss. At later stages, the research suggest that crop injury or less available N lowers yields compared to UAN applied directly to the soil.

3. Watch N Losses From Surface Application.

When UAN or urea is applied to a wet soil surface the chances of losing N to volatilization goes up considerably compared to dry conditions. Crop residue will also add to the risk.

4. Emphasize Uniform Development

Don't ignore all the factors that can contribute to a uniform, high yielding stand. Fertilizer application, tillage uniformity, even distribution of crop residues, compaction, depth of secondary tillage, planting depth and seed trench conditions are all important to a uniform crop stand. You can have perfect spacing and not have a uniform, high yielding corn crop. Look for poor corn plants (2 or more leaf stages behind, smaller stem diameter, small ear, etc.). Investigate what might have caused this poor performance. Shallow planting, side wall compaction or poor root development should be first things to look for.

5. Experimenting with Spring Strip Tillage

Can we make strip tillage the winner in both profits and soil protection? We will focus on:

1. spring strip tillage,
2. incorporating all of our fertilizer in that zone while we go - so planting follows 6 hours later with no need for coulters, trash whippers, fertilizer, etc. and
3. using RTK GPS and run it on the contour so no blowing out row zones if we get a big rain.

Keep an eye out for equipment and plots in 2014.

Cover crops Following Cereals and Late Summer Harvested Crops

by Adam Hayes, Soil Management Specialist – Field Crops & Anne Verhallen, Soil Management Specialist – Horticulture Crops, OMAF and MRA

What is the best cover crop species to use following wheat and other crops harvested in late summer? Cover crops can help improve soil structure, protect the soil from erosion, cycle nutrients, provide feed for livestock and much more. Cover crops are not a magic solution for your soil problems, but when combined with other good soil management practices they can help improve soil health.

Red clover is still the best cover crop option in winter wheat as it provides a nitrogen credit to the following crop and produces significant top and root growth. If red clover is not an option or did not establish, then planting cover crops following a cereal crop is the next option. Many think that volunteer cereal growth is good enough, but a planted cover crop can provide up to five times the above ground biomass and root growth. It can also suppress weed growth, which volunteer cereal growth cannot do.

Cover Crop Selection

The cover crop chosen for a field will depend on why you want to grow the cover crop. You will also need to consider how it will fit into your cropping and tillage system and how much time there will be for the cover crop to grow. The OMAF and MRA website http://www.omafra.gov.on.ca/english/crops/pub811/8building.htm#cover (in the soil management section) provides comprehensive information on cover crop species selection and management. The "Agronomy Guide for Field Crops", OMAF and MRA Publication 811 also has cover crop information. The Midwest Cover Crop website http://www.mccc.msu.edu/selectorINTRO.html provides an Ontario cover crop selection tool.

When to Plant

Following cereals, or any other crop, plant the cover crop as soon as possible to achieve the most growth. Another great opportunity to plant cover crops is following corn silage harvest, as there is little cover left to protect the soil. Annual cover crops can be planted up until six weeks before a killing frost is expected. After that point a winter cereal is the best option.

How To Plant

If volunteer cereal growth is present, consider whether or not to spray it to prevent it from competing with the cover crop. Ensuring that the straw was spread well at harvest will improve cover crop establishment. A drill, planter or air-seeder can be used. Cover crops can be no-tilled, or tilled and then planted. Placing the seed in the ground will provide the best opportunity for quick establishment. Seed can also be flown on, broadcast or broadcast and worked in, or applied with a liquid manure application.

Options

Table 1 includes some suggested options. Single species are simple. More complex mixes have been gaining favour. The following will achieve good ground cover at a reasonable cost.

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NEOSCIA ONLINE LINKS

- Ag Professional
- Agriculture and Agri-Food Canada
- Agriculture and Agri-Food Canada Drought Watch
- Agricorp
- Canada's Outdoor Farm Show
- Canadian Farm Business Management Council
- Canadian Forage and Grassland Association
- Crop Advances
- Farm & Food Care Ontario
- Grain Farmers of Ontario
- Hasting County Plowing Match and Farm Show
- Innovative Farmers of Ontario
- Ontario Agri-Food Education Inc
- Ontario Agri-Food Technologies
- OMAFRA Crops Index Page
- OMAFRA Field Crop Newsletters *- Crop Talk*
- OMAFRA Field Crop Newsletters *- Crop-Pest Ontario*
- OMAFRA Field Crop Newsletters *- ON Organic*
- OMAFRA Field Crop Reports
- OMAFRA Newsletters
- Ontario Soil & Crop Improvement Association
- Ontario Beans
- Ontario Canola Growers
- Ontario Cereal Crops Committee www.GoCereals.ca *- Oat, Barley and Wheat Trial results*
- Growing Ontario's Corn www.GoCorn.net
- Ontario Hybrid Corn Performance Trials from 2013
- Ontario Hybrid Corn Performance Trials from 2012
- Ontario Forage Council
- GoForages.ca Forage Crop Variety Performance
- Ontario Hay Listing
- Ontario Institute of Agrologists
- Ontario Oil & Protein Seed Crop Committee Soybean www.GoSoy.ca
- The 2013 soybean variety report for 2011-2013 crop years as a PDF file
- Weed Pro 75 online herbicide selection
- weedinfo.ca
- European Buckthorn *- rust and aphid host*
- The International Survey of Herbicide Resistant Weeds. Online
- The No-Till Farmer
- Tillage Ontario
- FarmSmart Expo and Conference
- Southwest Agricultural Conference

Cover crops Following Cereals and Late Summer Harvested Crops

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Cover Crop	Seeding Rate (frost sensitive)	Comments
Oats or barley	45 - 100 kg/ha - depends on goal and soil type (low rate on clay and higher on sand) (killed by frost)	- simple - can be used for forage - inexpensive - nitrogen scavenger - suitable broadcast or drill
Oats + radish	40 – 80 kg/ha oats 2 – 4.5 kg/ha radish (killed by frost)	- oat has fibrous root and radish a tap root - nitrogen scavenger - moderate cost - oats will help radish flow in the drill - broadcast or drill
Oats + clover	40 - 60 kg/ha oats 4 .5 kg/ha clover (oats killed by frost)	- grass and legume - clover produces nitrogen - moderate cost - broadcast or drill
Oats or barley + peas	80 - 100 kg/ha oats or barley 50 - 75 kg/ha peas Reduce seeding rate if not harvesting for feed.	- can be used for forage - grass and legume synergy - peas produce nitrogen - drill or broadcast - incorporate because peas are a large seed and need more moisture to germinate
Winter cereals (rye, wheat, triticale)	65 -130 kg/ha	- establishes and grows well in mid- to late-fall
Multi-mix grass + legume + brassica (i.e. oats or rye + clover or peas + radish)	Depends on species used.	- variety of growth habits - cost varies depending on species used and amount planted - 3 or more species can be included - can increase diversity - select mix carefully to ensure compatibility i.e. do not use buckwheat - some add sunflowers or other flowering cover crops to support pollinators - drill or broadcast and incorporate if peas or other large seeded crops are in the mix

Nitrogen and Cover Crop Growth

The spring cereals and the brassicas require nitrogen to grow just like corn and cereals we grow for grain. If manure has been applied then there will likely be enough nitrogen for good cover crop growth. If the cover crop is following a winter wheat crop then there may be very little growth without adding 35 - 55 kg/ha N of nitrogen. Legume cover crops should be inoculated if they haven't been grown in the field before.

Termination

Before planting a cover crop it is important to think about what management it may require. Many cover crops are killed by frost and don't require a herbicide treatment.

Others will survive the winter and will need to be killed in the fall or spring. Some will go to seed, so they will need to be mowed or managed before then. Tillage, using a roller crimper or grazing are other methods that can be used to manage or terminate the cover crop.



BULLETIN
GRANDES CULTURES

14ième vol. 2ième édition | MAAO et MAR - des spécialistes en grandes cultures | juin 2014

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Considérations pour les propriétaires de chevaux qui achètent du foin

par Joel Bagg, spécialiste de la culture des fourrages, MAAO et MAO

De nombreux propriétaires de chevaux trouvent qu'il est de plus en plus difficile de s'approvisionner en foin de qualité pour les chevaux à un coût abordable. Les faibles rendements obtenus en 2012 dus à la sécheresse ont été suivis par une dégradation de la qualité, en raison du temps pluvieux pendant la fenaison en 2013. Cependant, il y a aussi des facteurs économiques à long terme qui entrent en ligne de compte et qui limitent la production de foin. Un approvisionnement plus limité de foin de qualité pour les chevaux pourrait bien devenir la réalité dans l'avenir. Les propriétaires de chevaux doivent devenir des acheteurs astucieux, développer de bonnes relations d'affaires avec les producteurs et les négociants de foin, apprendre à gérer les grosses balles sur leur ferme et réduire au minimum les pertes lors de l'entreposage et de l'alimentation du foin.

Conditions météorologiques et problèmes agronomiques

La production de foin a été extrêmement difficile en 2012, avec de faibles rendements et des quantités en stock restreintes. Des rendements de 50 % à 75 % de la normale ont souvent été signalés. Parmi les autres facteurs agronomiques ayant eu un impact important sur la baisse des rendements, mentionnons les dommages dus aux rigueurs de l'hiver et aux gelées du printemps, ainsi que les déprédations du charançon de la luzerne, des vers blancs, de la légionnaire et de la cicadelle de la pomme de terre.

De meilleurs rendements ont été obtenus en 2013, mais en raison du temps humide lors de la première coupe, d'importantes quantités de foin ont été endommagées par la pluie ou la moisissure dans le cas de foin mis en balles à un degré d'humidité trop élevé. Avec les luzernières endommagées par l'hiver dans certaines régions au printemps 2014, les stocks de foin de qualité pour les chevaux pourraient de nouveau être restreints, tout dépendant des conditions météorologiques à venir.

Tendances économiques à plus long terme

L'économie a un impact sur l'approvisionnement à long terme et le prix du foin. Le foin sera disponible, mais pas nécessairement au prix

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Ministère de l'Agriculture et de l'Alimentation
Ministère des Affaires rurales
Ontario

Considérations pour les propriétaires de chevaux qui achètent du foin

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que nous avons l'habitude de le payer. Historiquement, il y avait surabondance de foin et le marché était à l'avantage de l'acheteur. Le prix du foin restait bas, et à un niveau qui était souvent inférieur au coût de production de l'agriculteur. Cependant, l'augmentation de la demande mondiale et des prix pour des cultures comme le maïs, le soya et le blé a changé le cadre économique. La réaction des agriculteurs a été de réduire leurs productions de foin et d'augmenter leurs productions de céréales et d'oléagineux. Le marché du foin de moins bonne qualité a également diminué, en raison du déclin du nombre de vaches de boucherie. Les cultures de maïs et de soya ont aussi des avantages par rapport au foin, car la gestion des risques en situation d'intempéries est plus efficace, elles offrent des options de couverture et de commercialisation accrues et une garantie de de paiement par les exploitants d'élévateurs à grain agréés.

On a enregistré une réduction importante des superficies en cultures fourragères en Ontario entre les années de recensement de 2006 à 2011, avec une réduction de 500 000 acres de foin et de 250 000 acres de pâturage. C'est beaucoup de foin! La demande d'exportation du foin de qualité aux États-Unis est forte. Pour que les agriculteurs soient incités à cultiver de plus grandes quantités de foin et en augmenter les superficies, une hausse des prix est nécessaire. Les jours où le foin se vendait à faible prix ou au-dessous du coût véritable de production sont probablement chose du passé. Les propriétaires de chevaux devront faire face à cette nouvelle réalité.

Coûts de production du foin

Les producteurs de foin doivent aussi payer des factures. Le prix du foin est à la hausse, mais les coûts pour produire le foin le sont aussi, comme les engrais, la terre, les machineries, les bâtiments et la main d'oeuvre. En exprimant le prix du foin en « cents par livre », le prix du phosphore et du potassium prélevés du sol par la culture de foin est actuellement équivalent à environ 1,5 ¢/lb.

Le coût attribué à la terre peut varier de 1 ¢/lb pour les terres qui se louent à 60 $/acre et qui donnent des rendements de 3 tonnes jusqu'à 4 ¢/lb pour les terres qui se louent à 320 $/acre avec des rendements de 4 tonnes.

Les frais d'établissement de la culture (semis, désherbage, etc.) avoisinent généralement 0,5 ¢/lb. Les coûts de récolte (coupe, râtelage, mise en balles, manutention, etc.) peuvent atteindre 2 à 2,5 ¢/lb (en se basant sur le tarif à forfait), tandis que les coûts d'entreposage peuvent augmenter le coût total d'un autre 1 ¢/lb.

La somme de ces coûts peut amener le coût de production à plus de 6 - 9 ¢/lb de foin, avant tout retour sur le risque, la gestion et le bénéfice. Le foin de qualité doit se vendre plus cher pour compenser le prix réduit du foin moisi ou endommagé par la pluie. Les bénéfices d'une culture de foin doivent être similaires à ceux des cultures concurrentes, sinon les agriculteurs vont tout simplement choisir de produire ces autres cultures.

Tendance vers des grosses balles rectangulaires et rondes

La production des petites balles rectangulaires est en baisse et celle des grosses balles rectangulaires est en hausse. Les petites balles rectangulaires exigent des producteurs non seulement plus de manutention, mais la capacité de production de ce système est moindre. La capacité de production journalière d'une presse de petites balles rectangulaires est beaucoup plus petite. Cela signifie qu'une quantité moindre de foin peut être récoltée au cours de ces périodes de temps limitées sans prévision de pluie. Les propriétaires de chevaux qui passent au système des grosses balles auront besoin d'un tracteur et d'un chargeur pour déplacer les balles, et peut-être d'un chariot d'alimentation dans l'écurie. Toutefois, étant donné que les petites balles rectangulaires deviennent plus difficiles à trouver, le système des grosses balles peut offrir davantage d'options de foin.

Il est très courant de voir des grosses balles rondes, mais elles ont plutôt tendance à être servies comme nourriture à la ferme ou à être vendues localement, étant donné qu'elles peuvent être déplacées avec un tracteur et une voiture plutôt qu'en camion. Elles se vendent générale-ment moins cher et peuvent très bien convenir aux mangeoires à foin extérieures, mais il faut être prudent pour éviter les risques de problèmes respiratoires.

L'utilisation de presses à grosses balles rectangulaires est en hausse, car elles augmentent la capacité de production et que le produit est plus dense et plus facile à transporter que dans le cas des grosses balles rondes. Les marchands de foin sont toujours à la recherche de foin de qualité en grosses balles rectangulaires. Pour les propriétaires de chevaux, les grosses balles rectangulaires ont également un avantage par rapport aux grosses balles rondes, en ce qu'elles peuvent être pressées « en tranches », ce qui en facilite la séparation quand elles sont servies à l'intérieur. Cela est particulièrement vrai quand la presse est équipée de « couteaux hacheurs », où le foin est partiellement coupé avant son entrée dans la chambre de pressage.

Utilisation accrue des agents de conservation du foin

Afin de gérer les risques de dommages dus à la pluie ou de moisissures quand le foin est pressé avant d'être assez sec, de nombreux producteurs utilisent des agents de conservation pour le foin, comme les produits tampons de propionates offerts sur le marché. Consultez la page Web intitulée « Preventing Mouldy Hay Using Propionate Pre-servatives » à l'adresse suivante http://fieldcropnews.com/?p=3655 (en anglais seulement).

L'utilisation des agents de conservation du foin tend à être plus grande au cours des années pluvieuses, ainsi que dans le cas des grosses balles rectangulaires. Selon les données de l'Agence canadienne d'inspection des aliments (ACIA), il n'existe aucune preuve scientifique que les agents de conservation du foin sont nocifs pour les chevaux, alors que les risques pour la santé que pourrait représenter l'alimentation d'un foin poussiéreux et moisi sont bien documentés. Les propriétaires de chevaux qui choisissent de ne pas servir à leurs bêtes du foin traité avec un agent de conservation vont avoir de plus en plus de difficultés à trouver du foin non traité.

Approvisionnement en foin et détermination des prix

Le prix du foin varie souvent avec l'offre et la demande perçue. Il a culminé à des niveaux sans précédent durant l'été sec de 2012. Le prix pour du foin de qualité est resté élevé en 2013, mais en même temps, le prix pour du foin de moindre qualité est revenu à des niveaux plus tradition-nels. Le prix du foin pour l'année courante va dépendre des rendements et de la qualité. Les petites balles rectangulaires obtiennent généralement un prix supérieur, alors que les grosses balles rondes sont escomptées, car elles sont plus difficiles à manipuler, à entreposer et à transporter. Le prix du foin varie beaucoup, tout dépendant de la qualité, des espèces qui le composent, du type de balle et de l'emplacement.

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Considérations pour les propriétaires de chevaux qui achètent du foin

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L'Ontario Forage Council (OFC) comporte un site Web d'annonces gratuites à l'intention des personnes qui souhaitent acheter ou vendre du foin (www.ontariohaylistings.ca/) (en anglais seulement). En outre, une section du site de l'OFC présente la liste des membres du « Hay Marketing Forum », une association de courtiers en foin www.ontarioforagecouncil.com/hay-marketing-forum/members.html (en anglais seulement).

Les propriétaires de chevaux devraient chercher à

développer et à maintenir de bonnes relations d'affaires avec des producteurs et des marchands fiables qui peuvent offrir un foin de qualité. Assurer un paiement rapide est important. La taille, la densité et le poids des balles varient considérablement. Par conséquent, lorsque c'est possible, il est préférable de comparer le prix du foin et de l'acheter sur une base « par livre », plutôt que « par balle ». Informez-vous des critères de qualité qui peuvent faire échouer une transaction, tels que la moisissure ou la poussière, par opposition aux critères qui peuvent être pardonnés, comme la décoloration par le soleil sur la face extérieure des balles.

Réduire au minimum les pertes d'entreposage et d'alimentation

Cela m'étonne toujours qu'avec le prix élevé du foin, je puisse encore voir du foin entreposé à l'extérieur et à découvert sur le sol, ou qu'il puisse être servi sans mangeoires à l'extérieur. De telles pratiques se traduisent par des pertes importantes. L'entreposage du foin à l'intérieur est préférable et payant à long terme, car la détérioration du foin est réduite. Les balles du bas qui sont en contact avec un plancher de béton ou de terre battue se détériorent en raison de l'humidité. L'entreposage des balles sur des palettes ou une couche de paille ou d'autres matériaux permettra d'éviter une telle détérioration. Les balles entreposées à l'extérieur doivent être au minimum placées sur des palettes et recouvertes d'une bâche, mais de façon générale, le produit subit quand même une certaine détérioration malgré cette protection. En plus d'être endommagées par la pluie, les balles entreposées sans protection absorbent l'humidité du sol comme une éponge, ce qui entraîne une importante détérioration, de la moisissure et de la poussière.

Utiliser des mangeoires à foin appropriées à l'extérieur peut aussi contribuer à économiser de bonnes quantités de foin. Une étude menée à l'Université du Minnesota par le Dr Krishona Martinson porte sur la quantité d'aliments qui est gaspillée selon différents modèles de mangeoires à foin pour chevaux. Dans le cas de foin servi sur le sol sans mangeoires, les pertes étaient de 57 %. Quand des mangeoires étaient utilisées, les pertes de foin variaient de 5 % à 33 % en fonction du type de mangeoire. Avec le prix élevé du foin, les mangeoires à foin bien conçues se rentabilisent très rapidement. (« Selecting A Round-bale Feeder For Horse Use » à la page Web www.extension.umn.edu/agriculture/horse/nutrition/selecting-a-round-bale-feeder/) (en anglais seulement).

Résumé

Le prix du foin varie considérablement, tout dépendant des conditions météorologiques et de la saison de croissance, mais les tendances économiques sous-jacentes semblent indiquer que l'approvisionnement en foin sera plus restreint sur le long terme et que les prix seront plus élevés que ceux auxquels nous sommes habitués. Les propriétaires de chevaux doivent devenir des acheteurs astucieux et élaborer des stratégies visant à obtenir un foin de qualité et à réduire les pertes d'entreposage et d'alimentation.

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Ne pas perdre de rendements fourragers à cause d'une faible fertilité en P et K

par Joel Bagg, spécialiste de la culture des fourrages, MAAO et MAO

Avec le coût élevé des terres, accroître vos rendements devient la clé pour réduire vos coûts de production des fourrages et demeurer concurrentiel avec les superficies cultivées en maïs et en soya. Les trois facteurs qui limitent les rendements fourragers sont les vieux peuplements, un faible établissement et une faible fertilité des sols. Une bonne fertilité du sol est essentielle pour le rendement et la persistance. La gestion du phosphore (P) et du potassium (K) est souvent négligée, mais elle est fondamentale pour produire le fourrage destiné à nourrir le bétail et être concurrentiel sur les marchés actuels.

Analyse de sol

Il est très important de connaître dès le départ la teneur en P et en K disponible dans le sol. Prélever un échantillon de sol représentatif, l'acheminer à un laboratoire agréé et utiliser les résultats pour déterminer les doses optimales d'engrais. Il faut prélever des échantillons de sol au moins tous les 3 ans. Le temps et l'énergie requis pour les échantillonnages de sol semblent peut-être contraignants, mais avec le coût des engrais, c'est probablement le meilleur investissement en coût et en énergie que l'on puisse faire.

Relation entre l'analyse de sol et le rendement des fourrages

Lorsque vous recevez le rapport d'analyse, vérifiez les concentrations (ppm) obtenues pour le P (analyse au bicarbonate de sodium-phosphore) et pour le K (analyse à l'acétate d'ammonium- potassium) (Utilisez uniquement ces analyses, car les résultats obtenus

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Interpréter l'analyse détaillée d'un amendement organique

par Christine Brown, spécialiste de la gestion des éléments nutritifs des grandes cultures, MAAO et MAO

L'analyse d'un amendement organique, comme le fumier, le compost, les digestats et les biosolides, a toujours été recommandée, afin d'en connaître les teneurs en macro-éléments. Mais le fumier contient beaucoup plus que de l'azote (N), du phosphore (P) et du potassium (K). Ces matières renferment d'importants oligo-éléments, de la matière organique, ainsi que d'autres éléments, et peuvent générer des économies additionnelles ou fournir des mesures de gestion.

Une analyse ne donne pas beaucoup de détails à propos de l'effet ou de l'impact de l'amendement organique sur l'activité microbienne du sol. L'activité microbienne joue un rôle important dans la décomposition des résidus de culture et la minéralisation des éléments nutritifs. Plus la flore microbienne est grande et diversifiée, plus l'activité microbienne du sol et le processus enzymatique auront le potentiel d'augmenter la minéralisation des éléments nutritifs et le cycle nutritif.

Le tableau 1 présente un exemple d'analyse de matière solide (compost) et un exemple d'analyse de fumier liquide (lisier de porc). Le rapport d'analyse exprime généralement les résultats en pourcentages et en partie par million (ppm). Que signifient ces chiffres, et comment ces informations peuvent-elles être utilisées pour améliorer la valeur de l'amendement organique? La colonne « éléments assimilables » révèle les éléments nutritifs contenus dans la matière selon les lignes directrices de l'Ontario. La colonne des remarques donne des détails supplémentaires.

Tableau 1 – Comparer et interpréter les résultats d'un échantillon d'amendement organique (fumier)

<table>
<tr><th></th><th colspan="2">SOLIDE (compost)</th><th colspan="2">LIQUIDE (lisier de porc)</th><th>Remarques</th></tr>
<tr><td></td><td>Analyse</td><td>Éléments assimi-lables (lb/tonne)</td><td>Analyse</td><td>Éléments assimilables (lb/1000 gal)</td><td></td></tr>
<tr><td>Matière sèche %</td><td>76,6</td><td>1532</td><td>4,7</td><td>470</td><td></td></tr>
<tr><td>Azote total (N) %</td><td>2,78</td><td rowspan="2">N organique 14,9 + 4,5 NH4-N = 19,4</td><td>0,38</td><td rowspan="2">N organique 15,9 + 3,4 NH4-N = 19,2</td><td rowspan="2">N total – NH4-N = N organique (L'azote organique est libéré lentement selon l'activité microbienne, allant de 5 % à 30 % en fonction :
· du moment de l'application
· du rapport C:N
· du sol/des conditions météorologiques
NH4-N est rapidement assimilable, mais facile-ment perdu par volatili-sation. L'incorporation le jour même donne ~ 75 % de NH4-N</td></tr>
<tr><td>NH4-N (ppm) (azote am-moniacal)</td><td>3003</td><td>2114</td></tr>
<tr><td>Phosphore (P) %</td><td>0,62</td><td>22,8 (P205)</td><td>0,13</td><td>23,9 (P205)</td><td>· On suppose que le P du fumier est ~ 80 % aussi assimilable au fil du temps que celui de sources commerciales; où 20 % sont étroite-ment liés au sol ou perdus par ruissellement ou érosion.
P total (%) x 1,84 x 100
= lb/1000 galons de P205 assimilable
P total (P) x 1,84 x 20
= lb/tonne courte de P205.assimilable
· Là où la fertilité du sol est faible, la quantité totale de P peut ne pas être immédiatement assimilable après l'application et un apport additionnel de P205 pourrait être requis (sources commerciales).</td></tr>
<tr><td>Potassium (K) %</td><td>0,77</td><td>16,6 (K20)</td><td>0,10</td><td>10,8 (K20)</td><td>· On suppose que le K du fumier est ~90 % aussi assimi-lable au fil du temps que celui de sources commerciales.
K total (%) x 1,08 x 100
= lb/1000 gallons de K20 assimilable.
K total (%) x 1,08 x 20
= lb/tonne courte de K20 assimilable.</td></tr>
<tr><td>Matière or-ganique %</td><td>51,6</td><td>791</td><td>3,5</td><td>16,5</td><td>La MO assimilable est rapportée comme étant la matière sèche retournée au sol.
· La teneur en matière organique du sol va avoir un impact sur le prélè-vement/cycle/perte des éléments nu-tritifs et sur la capacité de rétention de l'eau. Quand on applique régulièrement du fumier, la teneur en matière organique du sol est habituellement plus éle-vée.</td></tr>
</table>

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Interpréter l'analyse détaillée d'un amendement organique

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Carbone	~ 500	~ 85	~ 500	~ 85	· L'azote organique x la valeur du carbone du rapport C:N – donne une valeur approximative. On peut aussi demander la valeur du carbone organique par une analyse en laboratoire.
pH	5,8		7,5		· La volatilisation de l'ammoniac se produit parce que le NH4-N contenu dans le fumier ou le lisier est converti pour dissoudre les gaz de NH3. Plus le pH est élevé ou la température augmente, plus l'azote est volatilisé. · Certains digestats et le Lystek ont un pH et une teneur en azote ammoniacal élevé et sont, par conséquent, sujets à de fortes pertes par volatilisation s'ils ne sont pas incorporés immédiatement.
Rapport C:N	10 : 1		5 : 1		· Le rapport carbone : azote indique la vitesse de décomposi-tion du carbone. · L'azote est la source d'aliment pour les microorganismes qui décomposent le carbone. · Un rapport C:N ~ 10:1 est similaire aux conditions du sol. · Un rapport C:N > 25:1 (p. ex. du fumier avec beaucoup de litière) exige une grande quantité d'azote du sol pour décomposer lecarbone et pourrait causer une carence en azote.
Densité apparente	455 kg/m3	28,41 lb/pi3	1062 kg/m3	66,3 lb/ pi3	· La densité apparente est un facteur important dans la planifi-cation des amendements qui sont transportés et appliqués. · La densité apparente du fumier de poulet de chair/matières compostées est généralement de 25 lb/pi3, tandis que celle du fumier solide de bovins contenant beaucoup de litière est souvent supérieure à 50 lb/pi3. Pour convertir : kg/m3 x 2,2 ÷ 35,31 = lb/pi3
Soufre (S) (ppm)	3966	7,9	314	3,1	· Une grande partie sous forme de S organique – libération lente selon l'activité microbienne. · Des applications régulières de fumier apportent générale-ment suffisamment de S pour les besoins des cultures. · Des applications peu fréquentes pourraient ne pas apporter suffisamment de S pour le canola ou la luzerne, surtout dans des conditions de sol froid et humide.
EC (conductivité) (ms/cm)	15,68	20,1	12,95	83	Tous les sels – K, NH4, Mg, Ca, Al, y compris le sodium (Na). · L'EC et le sodium (Na) mesurent tous les deux la teneur en sels. · Les deux matières ont une teneur élevée en sels et pourraient causer des dégâts aux plantules ou à la germination si les semis suivent de trop près les applications ou si la matière est épandue à la surface (sans travail du sol) et que les conditions sont très sèches.
Sodium %	0,86	17,2	0,04	4,0	
Aluminium (ppm)	1726	3,5	38,9	0,4	· Les oligo-éléments sont rapportés tel qu'ils existent dans l'amendement organique. · Leur assimilabilité pour les cultures varie en fonction des conditions du sol, ainsi que de l'activité microbienne, de la teneur en matière organique et de la fertilité existante du sol. · En général, l'année de l'application, environ la moitié du soufre, du calcium et du magnésium est assimilable. · Environ deux tiers du bore, du cuivre, du fer, du manganèse et du zinc sont assimilables par les cultures.
Bore (ppm)	20,4	0,04	2,4	0,02	
Calcium (%)	3,98	80	0,13	13	
Cuivre (ppm)	41,3	0,08	36	0,4	
Fer (ppm)	1970	3,9	113	1,13	
Magnésium (%)	0,43	8,6	0,07	7,0	
Manganèse (ppm)	90,9	0,18	19	0,2	
Zinc (ppm)	385,5	0,77	61	0,61	

Ne pas perdre de rendements fourragers à cause d'une faible fertilité en P et K

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par d'autres méthodes (Bray ou Mehlich) ne peuvent pas être interprétés à l'aide des données d'étalonnage de l'Ontario.) Alors, que disent les résultats pour le P et le K?

La recherche montre que les pertes de rendement sont importantes dans la luzerne quand les teneurs en P du sol sont de beaucoup inférieures à 12 ppm (figure 1) et celles en K inférieures à 120 ppm (figure 2). Les courbes de rendement sont plutôt abruptes lorsque les teneurs du sol sont faibles. Les apports d'engrais vont stimuler le rendement quand les teneurs du sol sont inférieures aux seuils optimaux. Par contre, la courbe de rendement est à l'horizontale lorsque le sol est très fertile. Il ne faut donc pas s'attendre à obtenir des rendements plus élevés en appliquant des engrais lorsque les concentrations de P et de K dans le sol sont élevées. Dans ces cas, on peut choisir d'appliquer des engrais pour remplacer les éléments nutritifs prélevés par la culture afin de prévenir de futures carences, mais il ne faut pas s'attendre à une hausse du rendement à la suite de ces épandages « d'entretien ».

Figure 1

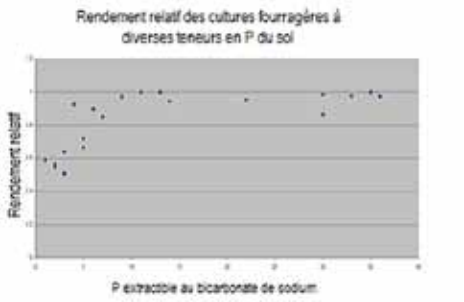

Figure 2

Prélèvement du P et du K des cultures

Les cultures fourragères prélèvent beaucoup d'éléments nutritifs du sol et ont par conséquent des besoins nutritifs élevés. Avec un mélange luzerne-graminées, les quantités de phosphore (P) et de potassium (K) normalement préle-vées par tonne de foin équivalent à environ 13,5 lb (6,1 kg) de P2O5 et 54 lb (24,6 kg) de K2O. Dans l'hypothèse d'un peuplement mixte offrant un rendement modeste de 3,2 tonnes/acre par an, le foin prélèvera environ 43 lb (20 kg) de P2O5 et 173 lb (78 kg) de K2O chaque année.

Contrairement à l'azote, le P et le K ne sont pas produits naturellement par les cultures fourragères. Si on ne remplace pas le P et le K avec du fumier ou des engrais commerciaux, les concentrations de ces éléments dans le sol vont chuter rapidement. Il est important de maintenir la fertilité du sol pendant la durée du peuplement fourrager.

Dans l'hypothèse où il faut environ 35 lb/acre de P2O5 et 20 lb/ac de K2O pour augmenter de 1 ppm la teneur de certains sols en P et en K (ces quantités varient selon les types et les conditions de sol), la concentration de P pourrait diminuer de 5 ppm et la concentration de K, de 35 ppm, en seulement quatre ans si on cultive des fourrages sans fertiliser le sol.

Si les valeurs nutritives du sol chutent en dessous des valeurs optimales pendant la durée du peuplement fourrager, ce serait suffisant pour réduire de manière significative le rendement des cultures fourragères. Il est également important de maintenir la fertilité du sol pour les prochaines cultures de la rotation. À des concentrations plus faibles, cet « appauvrissement » du sol n'est pas acceptable. C'est pourtant une situation qui se produit dans plusieurs champs de foin chaque année.

Les niveaux de fertilité des sols varient beaucoup dans les champs de foin de la province. Les fermes laitières où les champs reçoivent beaucoup de fumier ont géné-ralement des teneurs élevées en P et en K. Mais les carences en K deviennent de plus en plus courantes, même dans les fermes laitières. Les champs de foin où les rotations sont rares (ou inexistantes) et qui reçoivent rarement (ou jamais) de fumier ou d'engrais commer-ciaux sont habituellement très peu fertiles et donnent de faibles rendements. Dans une étude sur la fertilité des sols menée par le Soil and Crop Improvement Associa-tion (SCIA) du centre-est, 30 % des champs analysés avaient des teneurs en P2O5 inférieures à 10 ppm, et très étonnamment, 81 % des champs avaient des teneurs en K2O inférieures à 100 ppm. Dans un essai d'analyse de tissus végétaux de la luzerne mené en Ontario en 2012, 37 % des échantillons ont indiqué des teneurs sous le niveau critique de 1,7 %, indiquant une carence du sol en K.

Approche de la suffisance

Les tableaux 3-7 et 3-8 de la publication 811F du MAAARO, Guide agronomique des grandes cultures http://www.omafra.gov.on.ca/french/crops/pub811/3fertility.htm présentent les recommandations de P et de K pour des peuplements de fourrages établis. Elles reposent sur une « approche de la suffisance », qui consiste à répondre aux besoins optimaux de la culture courante en permettant le meilleur rendement net à court terme (1 an) de l'engrais.

Approche de la reconstitution et de l'entretien

Une méthode à plus long terme est aussi utilisée pour déterminer les apports d'engrais, la méthode dite de « reconstitution et d'entretien». Elle tient compte d'abord de la quantité d'éléments nutritifs prélevée par la culture (environ 13,5 lb de P2O5 et 54 lb de K2O par tonne de foin). Cette quantité assimilée est compensée par la quantité nécessaire pour augmenter (diminuer) les concentrations du sol (p. ex., 35 lb/ac de P2O5 et 20 lb/ac de K2O pour augmenter les teneurs du sol de 1 ppm) au niveau de fertilité optimal (12 ppm de P et 120 ppm de K), amorties sur plusieurs années. Des apports d'éléments nutritifs dans les sols dont, selon les analyses, les concentrations sont beaucoup plus élevées que ces niveaux critiques (12 ppm pour le P et 120 ppm pour le K) auront rarement des résultats rentables. Consulter la publication 611F du MAAARO, Manuel sur la fertilité du sol (http://www.omafra.gov.on.ca/french/crops/pub611/p611order.htm).

Autres recommandations

Quand on épand du fumier, il faut réduire l'apport en engrais en tenant compte de la quantité de P et de K dans le fumier. Pour des recommandations sur les besoins en P et en K au moment des semis (applications en bandes ou non, avec ou sans culture-abri), ou des renseignements sur les taux d'azote, le pH, l'épandage de fumier et les oligoéléments (bore), se référer au chapitre sur la fertilisation des cultures fourragères de la publication 811F du MAAARO, Guide agronomique des grandes cultures(www.omafra.gov.on.ca/french/crops pub811/3fertility.htm) .

Northern Ontario Farm Innovation Website

NOFIA is pleased to announce the launch of its website at www.nofia-agri.com, where news and updates will be posted along with a compilation of past research done throughout Northern Ontario.

We are also looking for innovative ideas for agricultural research, products or processes – we will be consulting with various ag groups over the next few months but if you have any suggestions, please contact us.

Current research includes wheat trials for nitrogen rates, SAMCO corn analysis and bioactive forages. The NOFIA business plan for an agricultural research infrastructure in Northern Ontario will also be published in July, so stay tuned!

Tax Credit for Farmers Who Donate to Community Food Programs

The Local Food Act, 2013, which received Royal Assent on November 6, 2013, introduced a new non-refundable income tax credit for farmers who donate agricultural products to community food programs, including food banks. The credit is worth 25 per cent of the fair market value of the agricultural products donated and will be able to be claimed for donations made beginning January 1, 2014. The government will bring forward regulations to implement the credit.

Farm & Food Care Conference: Sustainable Food & Farming

By: G.J. Gambles, RCC, NEOSCIA

Sustainability in the Agrifood business has become a hot topic over the past year, but what does it really mean for Canada? Experts from the industry gave their personal views at a CARE Conference in Milton on April 15, 2014. The best summary was provided by 4 participants on a sustainability discussion "panel". Here is a brief recounting of their ideas.

Nick Betts from Grain Farmers of Ontario said that to be sustainable, an enterprise had to be "Economically Viable, Environmentally Sound, and provide Social benefits". Unfortunately, the definition changes as you travel from Europe (believe in third party verification) to North America (relationships built on trust) to South America and the East Indies (continuous improvement must be shown). There are always 6 regional variables in play: agricultural practices, social issues, biodiversity, soil, greenhouse gasses, and water. From his perspective, our historical base is the Environmental Farm Plan (etc.), while today the agricultural community sustainability focus is on "tools and marketing". Tomorrow, society will demand whole farm/market wide verification. Farm operators at every level must recognize that consumers will not pay more for improvement, therefore it will be essential to retain clients at the least economic cost. Most of the extra costs need to be absorbed by processors.

Cher Mereweather of the "Provision Coalition" (Food and Beverage manufacturing) looked at risks and opportunities. A sustainable business must create financial value for its holders, but must look at a triple bottom line (economics, environment and social pressures) where you think globally and act locally. By enlarge, businesses today are unaware of the "Sustainability Concept". They are too focussed on just surviving economically! There is an immediate need to bring food safety, food quality, and sustainability together on one platform.

Heather Mak, Manager of Sustainability for the Retail Council of Canada, represents 90% of grocery retailers. Their focus is to contain and reduce costs, proactively work with government to promote sector growth, and to promote and protect the reputation of the retailer. In 2014, there are six priorities: Develop industry baseline on carbon, Develop a sustainability communication plan, Drive transparency, Promote efficiency, Harmonize industry sustainable food sources, and Develop stronger trade strategy.

Karen Tracey of the Northern Ontario Aquaculture Association appeared to be the most proactive of the group. The majority of the Rainbow Trout available in Ontario comes from 10 farms on Manitoulin. She believes that aquaculture will expand to fill the void left by unsustainable wild (seagoing) fisheries. Therefore Aquaculture must prove itself to be sustainable. There has been no expansion in the industry for the past 15 years due to regulatory "red tape", but this has been overcome by linking aquaculture to OMAF and OFA. Growers must provide proof of sustainability and have (highly varied) certification programs in place. NOAA now embraces third party certification, and believes that it is essential to maintaining customers. Growers do "mock" audits in preparation for certification. The biggest problem is the confusion between various sets of "standards" demanded by a host of retail buyers, therefore they keep to the high road by providing maximum transparency.

OSCIA NEWS

A NEWSLETTER TO UPDATE
OSCIA MEMBERS, PRESIDENTS, SECRETARIES, TREASURERS, DIRECTORS,
AND OMAF and MRA AGRICULTURE DEVELOPMENT CONTACTS

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Ontario Soil and Crop Improvement Association
1 Stone Road West, Guelph ON N1G 4Y2
Phone: (519) 826-4214 or 1-800-265-9751
Fax: (519) 826-4224

ATTENTION SEED GROWERS

CSGA Annual General Meeting will be held in Regina, Saskatchewan on July 9-12, 2014

Message from the President - Allan Mol

Well, following my first message back in March, I was hoping to get into spring mode. The winter had already been one of the coldest and snowiest in recent memory. However, things didn't seem to work out that way. Getting onto the field this spring has been a challenge. The snow was late in melting and then we had some heavy rains to boot. That's how it seemed from my side of the province! Planting didn't really get started until the last week in May here in the Northwest. It didn't look real easy going in other parts of Ontario either.

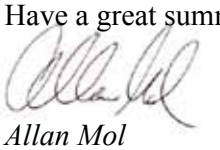
Anyway, we have been keeping busy with OSCIA matters. In March your organization's executive accepted an invitation to travel to the East Central Region and visit the Lindsay Farm Show that is held annually. The regional committee led by Neil Moore and Don Oliver put on a successful event once again. It was my first time there and I was impressed by the industry participation and the attendance of the farming community. The day after the show, we had a successful meeting with the East Central Regional Executive and also most of the local SCIA presidents and secretaries. It's always great to connect with local reps and talk about local successes and concerns. We congratulate the East Central Region on the way they engage their communities and keep current with agricultural issues. Also, thanks to John Kinghorn for giving us a guided tour of the Lindsay Farm Show and for completing his term as regional President.

It should also be mentioned that we are close to meeting our goal of 100 co-operators for the *Neonicotinoid Seed Treatment Efficacy Study* corn plot trials (as of early May) across the province. Thank you to all of our members that chose to take

part in this worthwhile project and for your hard work that always takes longer than any regular planting and harvesting chores. I'm sure that the results will add to the knowledge base.

The provincial election has been a good opportunity for our members to engage their local candidates and to introduce ourselves to them as farmers and food producers. The issues we try to draw to their attention may not always be understood but there is value in having local politicians able to put a name and a face to the farming industry in their backyard. We encourage farm families to connect with local politicians and exercise their right to vote.

Have a great summer!



Allan Mol
President, OSCIA

Encouraging Wood Turtle Habitat Through SARFIP

Herb Oakes has always had an interest in wildlife, so when a woodlot property near his farm came on the market, he jumped at the chance to buy it.

A nearby tributary to the Maitland River that dissects his property was found to be home to the most significant population of Wood Turtles in Huron County. Wooded areas are essential to the Wood Turtle, which spends more time on land and on the shores of watercourse than other native Ontario turtle species and wooded areas are essential habitat for them.

Approximately 40 of the 55 acre property Oakes purchased has been farmed until about 10 years ago, when a previous owner planted it in pine trees.

"The survival rate of those trees wasn't great and we wanted to leave the property in its natural state," says Oakes of his decision to undertake a tree planting project though the Species at Risk Farm Incentive Program (SARFIP) to fill in the bare spots on his property.

Oakes planted about 500 trees throughout the property last fall, mostly seedlings of about three years old that were less than a meter high. He deliberately chose tree varieties that would provide berries and nuts for the wildlife species that make his woodlot their home including Cedar, Red Maple, Birch, Tamarack, Hickory, Silver Maple, Oak and Service Berry.

Although it's still too early to gauge direct impacts on the species at risk on his property, he knows that more tree cover will be better for all the wildlife there.

Photo by RIchard Bonnett

"We'll probably attract more species as the trees grow up, but it will also help the ones that are there now, including the turkeys and the deer," he says.

To learn more about SARFIP, visit the OSCIA's website at http://www.ontariosoilcrop.org/en/programs/species_at_risk.htm

Lilian Schaer
Freelance Writer

Managing Memberships in a New Age of Technology

The provincial office along with Regional Communications Coordinator (RCC) Lead, Cathy Dibble, have been looking at options to streamline OSCIA memberships. With such an advance in technology, there are many ways to track memberships using web-based membership database management software such as Wild Apricot. Wild Apricot has allowed the RCCs to grow their regional and local association communities, increase event participation, attract and maintain members with better service, improve communications and efficiently manage membership data.

A few reasons why our team has been brainstorming about options for a more web-based membership is to make member information more conveniently available whether it's through a mobile app or barcode/tag. We are looking into all of our options right now. We have made great strides with trying to streamline how members can pay for their membership fees and events by making online

payment an option, and we would like to take it a step further.

Photo by United Soybean Board

Across the province, local associations have many methods for maintaining memberships, promoting events, and communicating with members. With advanced technology, these methods can become more convenient, less time-consuming, and a great way to build a stronger OSCIA community.

Cobi Sharpe
Administrative Assistant, OSCIA

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Challenges in Defining Soil Health

OSCIA has recently received funding to 'Advance Knowledge of Soil Health for Ontario Crop Production'. This project was funded in part through *Growing Forward 2* (*GF2*), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of *GF2* in Ontario.

Through OSCIA member consultations, soil health has been identified as the number one research priority. As a first step, a Soil Health Working Group has been established to solicit input from industry stakeholders, which will provide input for the development of a provincial soil health research strategy. Defining soil health is a complex process yet producers would like to see a quick-test, economic way of determining the health of their soil, where deficiencies occur, and implement improved practices. For example, there is considerable interest in new ways to use cover crops. What is the mix of species and when/how should it be applied in a standing crop for maximum soil benefit without jeopardizing the economic yield? What should be the indicators for an improvement in soil health?

Improved soil health results in greater water holding capacity for resiliency through droughts, better internal drainage during rainfall to reduce soil erosion, and more efficient use of nutrients. We are grateful to the Agricultural Adaptation Council for funding this project under the 'Capacity Building' component of *GF2*. The overall objectives will be to communicate experiences and expertise, guide researchers, and lead to valuable on-farm research projects. Over the months ahead, we will share more details as this project evolves.

Harold Rudy
Executive Director, OSCIA

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Ontario Forage Masters

The 2014 Ontario Forage Masters program is well under way, with about 200 participants from 25 local associations entered.

Those include Brant, Bruce, Dufferin, Dundas, Frontenac, Glengarry, Grenville, Grey, Lambton, Lanark, Leeds, North Simcoe, Ottawa-Carleton, Oxford, Peel, Perth, Peterborough, Prescott, Renfrew, Russell, Stormont, Thunder Bay, Victoria, Wellington and West Nipissing/East Sudbury.

Prizes for the top three winners in each county include 25kg of Pickseed seed, $150 and $50 Pickseed gift certificates, and $75 gift certificate from Agri-Food Laboratories.

Each county/district is entitled to enter their first-place winner in the provincial competition in the fall. That person will submit a written submission to the provincial office. All submissions will be judged, and a maximum of six entrants invited to present in person to the judging panel in Guelph. The six entrants will take a trip to the horse show at the Royal Agricultural Winter Fair and an overnight stay at a hotel in Toronto.

The person chosen as the 2014 Ontario Forage Master will have the option of presenting at the American Forage and Grassland Council Annual Conference held January 11-14, 2015 at the Hilton Frontenac in St. Louis, Missouri.

We'd like to take this opportunity to thank the generous sponsors of the program, now in its 27th consecutive year.

PICKSEED good things growing... The Royal Agricultural Winter Fair SGS AGRIFOOD LABORATORIES

On-farm Corn Trials 2014

neonicotinoid seed treatment efficacy study

Have you planted your strip trials?

We are looking for follow-up! Please email onneonicstudy@gmail.com ASAP!

UNIVERSITY of GUELPH RIDGETOWN CAMPUS

Ontario

Seed Bytes - 'Results from Consultation on Canada's Variety Registration System'

Agriculture and Agri-Food Canada, the Canadian Food Inspection Agency and the Canadian Grain Commission are reviewing results of an industry consultation on potential to modernize Canada's Variety Registration (VR) system.

Options to consider include:

Option 1 - allow the flexibility inherent in the current VR system to emerge (37% of respondents supported); Overall, 57% of respondents supported varying options for reform as follows:

Option 2 - streamline regulatory process by requiring that all crops meet minimum registration requirement with the option for some crops to have merit assessment through an independent assessment process (27% of respondents supported);

Option 3 - streamline regulatory process by maintaing a minimum level of federal government oversight (similar to the current Part III), and eliminate any merit assessment or performance data under the VR system (17% of respondents supported)

Option 4 - withdrawal of federal government oversight role in VR, allowing industry or third parties to assume these functions (13% of respondents supported).

Full details on the report may be found at: http://www.agr.gc.ca/CropVR

Please visit the ***Seed to Succeed*** Spring Newsletter for more information. http://seedgrowers.ca/reports-publications/seed-to-succeed/

Harold Rudy
Secretary Manager, OSGA

Canadian Seed Growers' Association Annual General Meeting

Join CSGA at the Delta Regina Hotel in Regina, Saskatchewan on July 9-12, 2014 for "Solving the Partnership Puzzle" the CSGA Annual General Meeting and Convention.

Regina is the 'Home of the RCMP' but that's not all. Several of the country's leading agriculture companies, one of Canada's largest urban parks, Government House, one of the most imposing Legislative Buildings in the country and the iconic Grey Cup Champion Saskatchewan Roughriders are just a few of the many attractions and businesses that call Regina home.

The schedule of events and registration details can be found at http://seedgrowers.ca/csgas-annual-general-meeting/

SYLVITE Will sponsor the FREE breakfast at CANADA'S OUTDOOR FARM SHOW again this year

Breakfast provided daily at the OSCIA/ OMAF demo plots from 8:30am-10:30am.

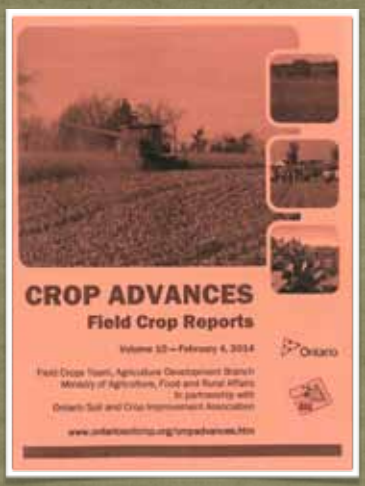
Proof of OSCIA membership required (i.e. card, newsletter, email invite).

Updates will be posted on the website: http://www.ontariosoilcrop.org

Sylvite

VISIT OUR WEBSITES:

www.ontariosoilcrop.org
&
https://oscia.wildapricot.org



OSCIA SUPPLIES

Available to Local and Regional Soil and Crop Improvement Associations for Distribution

All supplies are available by contacting the OSCIA Provincial Office at 1-800-265-9751 or 519-826-4214. Priced items will be invoiced to the local association.

1 Stone Road, Guelph, ON N1G 4Y2 • 800-265-9751

1 Stone Road
Guelph, ON N1G 4Y2

T 800-265-9751 F 519-826-4224
E cobi.sharpe@ontariosoilcrop.org

May 2014

Available to local and regional Soil and Crop Improvement Associations only for distribution to their members. Priced items will be invoiced to the local or regional association.

Item	Description	Cost	QTY
Tru-Chek Rain Gauge	Wedge Style	$10.00 (incl. S&H)	
OSCIA Farm Gate Sign	Aluminum pre-drilled 5" x 17.5" gate sign with OSCIA name and local member designation (in English or French)	$10.00 (incl. S&H)	
OSCIA Ball Cap	Green ball cap with OSCIA logo	$13.00 (min. order of 6)	
OSCIA Vest	Green vest with OSCIA logo and name - reversible Sizes available M, L, XL, XXL	$48.00 (plus S&H)	
2014 Crop Advances	OMAF and MRA/OSCIA publication with trial results. Volume 10 - February 4, 2014 - HARDCOPY	$15.00 (avail. until August 2014 ONLY)	
OSCIA Cloth Bag	75th anniversary canvas bag with 4" side gusset, inside pocket, lead-free, high quality, and *made in Canada* Shipping cost is approx. $4 - $7 depending on location	$14.00 (plus S&H)	
OSCIA Recognition Certificate	Available to recognize individuals for their contribution. When ordering, name and presentation date are required. OSCIA will prepare	N/C	
Membership Card & Membership Sticker	Credit card style membership card. Sticker with membership year on it, to put on card	N/C	
Soil & Water Conservation Farm Award Sign	Resin all-weather sign measuring 16" x 19"	N/C	
OSCIA Post Card	Colour post card printed one side with OSCIA mission statement & logo. Blank reverse to affix mailing labels and meeting notice information	N/C	
OSCIA Colour Brochure	Full colour brochure describing OSCIA's activities	N/C	

Ordered by: _____ County: _____

Address: _____

Phone: _____ Date Product Required: _____

"It's kind of fun to do the impossible."
– Walt Disney

"Don't cry because it's over. Smile because it happened."
– Dr. Seuss

"Courage is the discovery that you may not win, and trying when you know you can lose."
– Tom Krause

"If you only do what you know you can do – you never do very much."
– Tom Krause

"Do not let what you cannot do interfere with what you can do."
– John Wooden

"Try to learn something about everything and everything about something."
– Thomas Henry Huxley

Rural Agri-Innovation Network - *Summer News & Programs*

Sustainable New Agricultural Products (SNAP)

Funding Program Now Taking Applications

The SNAP Program is a pilot for Northern Ontario agriculture and food producers, businesses and collaborations, which will provide up to $5,000 (per collaborator, to a maximum of $15,000) at 80% cost-share toward the purchase of processing equipment that would result in the creation of a food or agriculture product new to the business. This program is administered by the Rural Agri-Innovation Network (RAIN), in collaboration with Eat Local Sudbury Cooperative, Clover Valley Farmers' Market, and the Northeast Community Network.

Eligible Projects related to the development of agriculture or food products grown, processed or manufactured in northern Ontario; and projects that result in the creation of an agriculture or food product new to the business.

Eligible Costs All costs shall be limited to the purchase of equipment that results in production of an agriculture or food product new to the business. Examples of this include, but are not limited to: Food processing equipment; Fibre processing equipment; High-tunnels or greenhouse structures for season extension; Food packaging equipment.

Ineligible Costs Normal business costs; Costs for installation or servicing of project equipment not associated with initial purchase; Rolling stock or inventory; Vehicles (including tractors); Labour costs; Consumables; Purchase or lease of lands or buildings; Gifts or incentives; Costs incurred prior to March 1, 2014 or after February 1, 2015.

Funding has been provided by the Northern Ontario Development Program through FedNor and Industry Canada.

DEADLINE FOR APPLICATIONS IS SEPTEMBER 1ST, 2014.

For full program details, including eligibility, deadlines, and application forms, please call 705-942-7927 Ext. 3024 or visit: www.rainalgoma.ca/SNAP

First-Annual Eat Algoma Local Food Festival a Success

On Saturday, June 14th, downtown Sault Ste. Marie was filled with farm-to-fork activities to kick off Algoma's first local food festival, Eat Algoma. The event included farm vendors from across Algoma District, farm animals, live music, and a Restaurant Food Challenge where local restaurants and local farms teamed up to create their best pulled-pork slider. Over 2,000 people attended the event, and tickets for the Restaurant Challenge were sold out before the event began. Proceeds from the event will support the various projects of RAIN, including ongoing efforts to increase local food production in Algoma, as well as its activities to enhance Algoma agriculture through research and education.

Bob Bors: General Comments at RAIN Symposium

By Graham Gambles, Regional Communication Coordinator for NEOSCIA

In addition to the specific discussions on Haskap Berry and his "Favorite Fruit Growing Tips" for western orchard plants, Dr. Bors also had a slide show on general issues surrounding the fruit growing industry. Here is a brief list of his comments:

- Replace grafting wax with paraffin tape. Much quicker and has 70% success.
- Grafts should be on the North side of trees. Tape below the graft first, and above graft last.
- Host trunk of graft should be cut off in SECOND year, about 1 cm. above graft.
- Successful graft bud should go from yellow to brown in colour and then fall off.
- Graft buds that turn black and stays on tree are dead.
- University of Saskatchewan has 35 acres of fruit breeding.
- Program is funded by Royalties, CAAP, Plant, recipe book, workshop sales, Sask. Agric ADF Fund, Grower groups (SFGA, CCPI, Haskap Canada), Scholarship sponsors incl. NSERC and Mongolia.
- In Canada, # of research stations reduced by half since 1999. (strawberries at only 2 sites)
- Pharmaceutical research needs Freeze-dried material for all tests.
- Freeze-dried Haskap has the highest antioxidant levels.
- Flow Cytometer has been developed for evaluating different fruits.
- Sugar content of fruit increases, the further north that the plant is grown. (longer days = greater ability to make sugar. Highest content often about June 21. Brix level is seen to go up, the longer the fruit remains on the trees, such as for sour cherry.)
- Fireblight common in west. It responds to high soil fertilizer levels in apples (and other species).
- U of S has had a hazelnut program for half a century, with seedlings (cross bred to Oregon varieties) spread out across the Province. A new generation of seedlings were planted in 2013.
- Raspberry production of any given stand can be spread out over a longer season by pruning the fruit bearing canes to different heights (short, medium height, no pruning). Extended season could be useful for home gardener, PYO, and commercial sales to avoid over supply issues.
- Strawberry fields have been renewed by rototilling under the plants on the east side of a row, and applying fertilizer to the aisle on the west side of the row. SB plants will expand only to the west to allow full renovation over time. U of S has a successful 12 year old strawberry patch.
- For plants that require cross pollination, always have 2 (or more) varieties that BLOOM at the same time. Apples and crab apples cross pollinate. Apples and pears do not. Pin cherry and choke cherry do not cross pollinate sour cherry. In commercial production, plant a cross pollinator variety into every 2 to 4 FULL rows. Hybrid plums may need WILD plum pollinators.

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

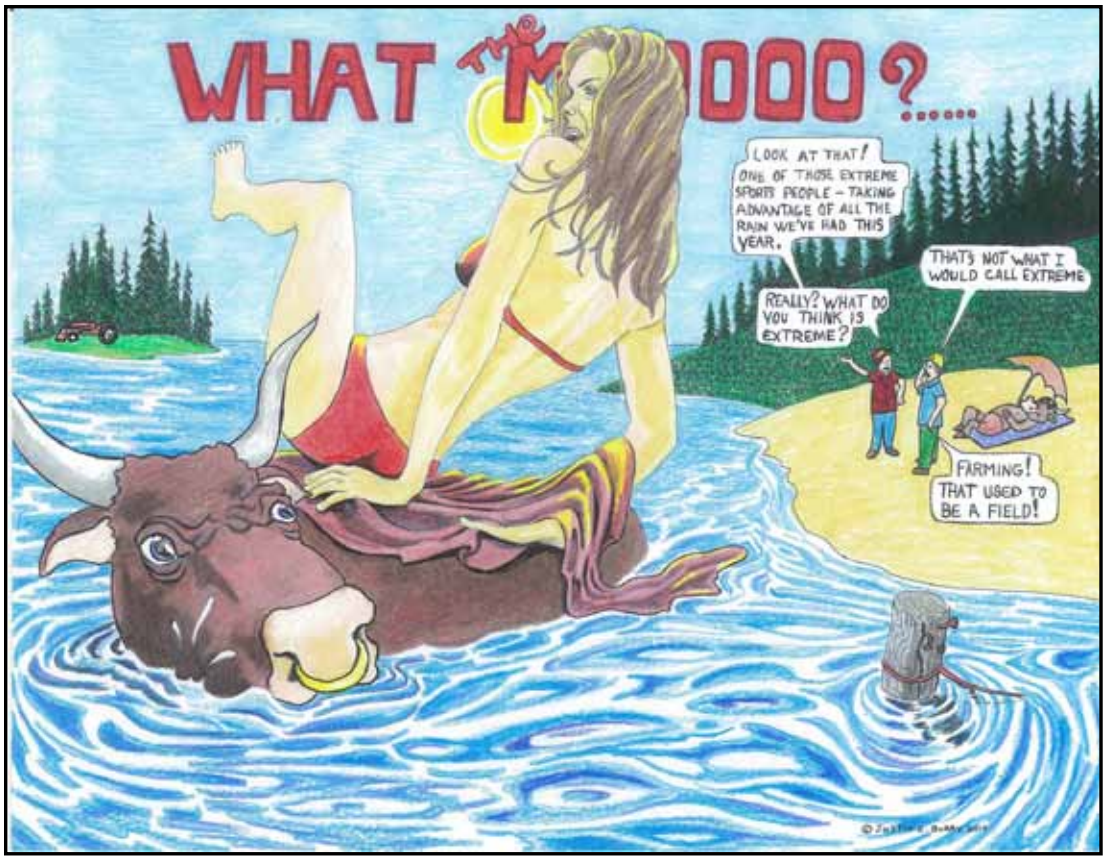
North Eastern Ontario Soil and Crop Improvement Association
Serving the Northern Agricultural Community since 1966

Western Fruit Orchards for Northern Ontario

By Graham Gambles, Regional Communication Coordinator, NEOSCIA

Dr. Bob Bors from the University of Saskatchewan was the highlight speaker at the midwinter RAIN symposium at Bruce Mines (Algoma). One of his three talks was on his "Favorite Fruit Growing Tips" (for any type of orchard). Here is a summary of his top 25 comments, in a point format.

- When in doubt, experiment with at least 2 different ideas on a uniform site.
- Mechanical harvesting traits in fruit bushes are also good for the home gardener.
- More sunshine = more fruit potential.
- If plant has wrap-around roots in a pot, cut the roots VERTICALLY before planting.
- Plant early bloomers on the north side of hills to delay bud break.
- Conversely, plant late bloomers on the south side of hills.
- If you have a known dry spot, plan for irrigation before planting.
- Rows planted in a north-south direction have less suckering than E.-W. rows.
- Heavy grass competition in the first few years causes permanent stunting.
- Need well tilled soil or some form of mulch in first few years of orchard.
- Some trees have wide, shallow roots. Use mulch for these.
- Too much compost/fertilizer can cause late season growth and subsequent die-back.
- If soil is too rich, plant grass to absorb extra nutrients.
- Later ripening gives greater yields, but earlier crops get higher prices.



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

- Proper pruning allows improved fruit size, quality, health, and uniform ripening.
- Always use BYPASS pruners (the cheaper "anvil" type causes damage).
- Never use mechanical saws when pruning limbs. (Reciprocal saw OK for suckers).
- Disinfect pruning equipment after EVERY tree (use alcohol based disinfectant).
- Prune for branches that keep a strong WIDE angle to the trunk.
- Prune to allow sunlight onto ALL parts of the limbs.
- Never remove more than 25% of healthy wood in any year.
- Mechanical harvest needs flexible branches, so prune off inflexible branches.
- Orchard plants originating in a greenhouse can take a full year to adapt to outdoors.
- Reduce watering if trees are still making new leaves at first fruit (to avoid winter kill).
- Provide proper conditions for pollinating insects.