



Breaking Ground

(in Northeastern Ontario)

SUMMER 11

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

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What's New in Horticulture at NLARS

Becky Hughes, University of Guelph, NLARS

Protected Culture



Researcher Becky Hughes (right) explaining the trials in the high tunnel to Timiskaming-Cochrane MPP David Ramsay, Denis Bonin and Temiskaming Shores Mayor Carman Kidd, left to right

In 2010 a 3-bay high tunnel was constructed at the New Liskeard Agricultural Research Station with funding from the Agricultural Research Institute of Ontario and the Northern Ontario Heritage Fund's Emerging Technology Program. High tunnels have been used in Europe for the last 10-15 years to extend the growing season and expand the variety of crops that can be grown in an area. We are currently seeing these protected-culture systems being introduced in southern Ontario and Quebec. These low-cost structures extend the growing season and modify the growing environment on a field scale.

Even though our high tunnel was installed in August, the yields of a number of dayneutral strawberry cultivars grown under the high tunnel last year were double that of the same cultivars grown outside. Research trials are underway comparing production inside and outside the high tunnel.

Expanded Research in Berry Crops

With the addition of the high tunnels in New Liskeard, we are currently working with researchers from the University of Guelph in Simcoe and Ridgeway, Laval University, PQ, the University of Florida GCREC and the Manitoba Agriculture, Food and Rural Initiatives on a series of research projects on dayneutral strawberry and protected raspberry production. Funding has been obtained from the Clusters Initiative of the Growing Forward Canadian Agri-Innovations Program administered by the Canadian Horticultural Council, the Farm Innovation Program through AAC, several agri-businesses and industry groups including the Ontario Berry Growers Association.

The current dayneutral strawberry trials in New Liskeard include a cultivar trial, a trial comparing overwintering treatments and one looking at different plant types and sizes, and the effects of blossom removal. In all these trials we are comparing the treatments in the high tunnel and outside. Raspberry trials with fall-bearing and summer-bearing cultivars will compare production in the high tunnel to that outside in the open and outside covered with rain shelters.

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

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

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

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OBITUARY

Andre Lemay



It is with sadness that I share that OMAFRA retiree, André Lemay passed away on Monday, May 2, 2011 at the age of 66. André is survived by his wife Yolande, daughter Mélanie, son-in-law Anthony Ridi, treasured granddaughter Ella and father Ovila. A funeral mass in celebration of André's life will be held on May 7, 2011 at St. Joseph Roman Catholic Church, Orleans. Memorial contributions to the Canadian Cancer Society would be appreciated by the family. Further information is available at www.mcgarryfamily.ca

A dedicated and highly respected member of the Ontario Public Service for 30-years, André readily shared his knowledge and leadership as an Assistant Agricultural Representative, Prescott County (1974 – 1978); and as an Agricultural Representative in Cochrane South (1978 – 1979), Sudbury District (1979 – 1984), Russell County (1984 – 1996) and Nipissing, Parry Sound, Sudbury and Muskoka Districts (1996 – 2004). His expertise in farm finance and hay cost of production and marketing gained him recognition across Ontario and in Quebec. André is remembered by OMAFRA – North Region as a friend and mentor.

Please keep André's family in your thoughts and prayers.

What's New in Horticulture at NLARS

Continued from page 1

Garlic Stem and Bulb Nematode

The Garlic Growers Association of Ontario recently received funding from the Growing Forward Agricultural Biosecurity Program for a two-year project on "Preventative Measures and Management Practices for Stem and Bulb Nematode in Garlic".

The objectives of this project are to: determine the extent of stem and bulb nematode infestation in garlic across the province and identify the prominent race(s); verify that the nematode-free, virus-tested seed production system developed by the SPUD Unit, NLARS in 2010 is repeatable; and educate growers on the spread, symptoms, biology and control of this pest including the use of nematode-free seed.

This project is led by University of Guelph researcher Becky Hughes and involves a team of researchers from across the province. For more information visit www.garlicgrowers.on.ca and click on Directions under the 2011 GGAO Annual Field Day.

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Putting the AgSmarts into Smartphones: *The Basics*

By: Ian McDonald, OMAFRA

Have you ever sat in your farm or business office and been frustrated with the fact that you really need or want to be somewhere else? Smartphones allow a farmer to address much of the office side of farming and business while out doing the farming. Farmers need no longer be tied to the desk to complete tasks like record management, financial management, marketing, information gathering, task tracking, system/building monitoring, remote control of equipment and devices, etc. Think of a Smartphone as "An Office In Your Pocket".

Although often thought of as a tool for the high end business types, this thinking is changing as we see the proliferation of these amazing devices into everyday life and businesses. Who more so than farmers and their advisors spends less time in the office yet needs to stay on top of vital issues that should keep them chained to the desk.

Many farmers have said that they don't need a SmartPhone, but do they really understand the features and power that are contained in that little device? The next time you run over that cell phone or drop it in the manure tank, the sales person at the local mobile device retailer is likely going to try and talk you into one. Sure it means more money for them, but more importantly it probably means more money for you!

A cell phone is only slightly different from a landline (that's an office phone for you neophytes to the cell phone world). It lets you talk to people, usually only one person at a time, and sending short text messages.

The SmartPhone that you carry on your hip today has more computer capability to the old paper weight clunker sitting in the office that you bought for big money only a few years back. A SmartPhone has almost unlimited utility in what you can do with it, although it's not a universal wrench or a hammer. Sure, you can communicate with it like any other phone. But these devices can text, email, search the web, store and record field and other data, remotely monitor and operate equipment, act as a GPS, take pictures/video among other things.

Tools in a Smartphone

- Phone/sms text
- E – Mail
- Voice recorder
- Camera
- GPS Capability
- MP3/Audio
- Apps & Web Access

Biggest Issues to Deal With Up Front

1. What SmartPhone do I buy?

This is a tough question to answer because people like different gizmos that are parts of these devices. Essentially any of the devices do the same thing albeit maybe in slightly different ways.

The best thing is to ask the kids, neighbors, input suppliers or other contacts what they use and their likes and dislikes. You might quickly see what features meet your needs and steer you in a certain direction.

2. Which operating system do I want?

The choices are iPhone, Blackberry, Windows Mobile, Treo and Android

This is somewhat tied up with question 1 depending on the platform. If you want an iPhone, there really is only one so the decision is easy. If choose the Blackberry or Windows Mobile route, there are a number of distinct phone choices you can make.

3. Which network do I choose?

This comes down to 3 things; Coverage, Cost and Features. The first two are the biggies. Again talk to contacts in your area about what provider they use and are they satisfied. Each provider says their best (where have you heard that before) but the truth is it depends on the location and this coverage issue between providers changes constantly.


Cost is more problematic to figure out. There are two components to it, as well as all the little incidentals that seem to get added to the monthly bill. Be sure to research this thoroughly. The cell phone

component is similar to what you have been dealing with on your cell phone. Check your old bills to determine the number of minimum minutes you use per month and set that as a target. The bigger unknown is the data charges associated with web browsing and other features that are the heart of the SmartPhone. With this you might have to fight for an open contract for a few months that lets you get a feel for how much data use you are going to incur. This is advisable even though it will be more expensive. Once you have signed that contract they can be hard to change. Watch out for the over usage charges and other hidden charges. Make the sales person really inform you on what to expect on the bill.

4. Are they durable enough?





How many cell phones have you destroyed? Between dropping them, getting them wet, covered in mud or grease, we have heard a lot of stories of cell phone misfortune. This may be more costly with a SmartPhone. They often come cheap with the phone/data package you purchase from the provider, but they are expensive units. Check on the providers replacement policy.

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Putting the AgSmarts into Smartphones: The Basics

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The other thing is just normal wear and tear. With big screens (everything is relative), little keyboards and buttons, open ports (plugs), are they going to stand up. Moisture and dust are the worst enemies of electronics so at least try and protect the darn thing.

Features of the Features Phone

A phone is a phone, is a phone, is a phone. The phone feature allows you to communicate with anyone you want, as long as they turn their blasted phone on, or are nearby to answer it. It allows you to stay in touch with family and employees, order parts and custom operations, get answers to questions from neighbors, suppliers or advisors.

Probably the most important feature of a phone in the field is safety. We are covering big acreages these days, often remote from our home location and usually by ourselves. If something happens and no one is around to see it, you could be waiting a long time for help. This feature only works if you have the phone with you. If you get out of the cab to fix something and get trapped, the most sophisticated SmartPhone in the world isn't going to be able to help you if you can't reach it. So, keep it on you at all times.

Essentially it works just like any other phone but while you can talk to someone, you can also be typing information about your call into the phone for later recall.

Email

Now why on earth would I need email out in the field? Well how about some examples that show the value of this. Say you are talking to your crop input supplier about getting a field sprayed with roundup after your have been scouting and find it's high time for it to be sprayed. You call up your supplier and tell him what field, what product, what weed stage and when you need it done. A few weeks go by and you drive by that field to see that the weeds are overgrowing the crop and your next door neighbors conventional corn field is looking very sad! Oh, Oh, did the applicator hit the wrong the field? What recourse do you have when you don't have any record of your conversation with them other than your "recollection"? Well how about after completing that phone call with them to discuss details of the spray operation, you sent them a quick email to confirm the details of the conversation. I always ask them to respond to the email to be sure they received and read it. Now you have a record of your conversation and you are protected if something goes wrong, but probably more important, the extra communication upfront prevented the error from happening in the first part.

Email is also a great tool when you need information. Your advisor is not picking up the phone. You send him/her an email with a brief description of what you are asking and get a response that again you

don't have to remember what they told you in the phone call, you have it in an email. This is often quicker too, especially if some of your contacts are long winded and you hate to phone knowing your going to get tied up for several minutes. If you ask specific questions in your email your replies will likely be short and to the point and you don't get dragged into side conversations. Nobody will type essays especially if they are responding from another SmartPhone (awkward keyboards really).

Emails also integrate with other features of the SmartPhone, namely camera/video recorder and GPS functions which we will describe shortly.

Camera/Video Recorder

Too many examples of people catching family, friends, enemies and strangers in compromising situations have diluted an understanding of the real value of this tool. It's not just a toy.

We should all know this weed!



Say you're in the field and you see something that you just don't know what it is? A

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Putting the AgSmarts into Smartphones: The Basics

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weed, insect or something funny showing up with the crop in that low spot over there. Instead of trying to describe it to your advisor, or worse have to wait for them to come and see it, you can take a picture or video of it and immediately email it to them so that they can advise you. Another example is you are out at a tillage demo and dad was too busy to tag along and you are really impressed with how this one implement works the ground. Well, dad ain't here and he still pulls the purse strings, so how are you going to convince him to take your advice. Well, just make a video of the scenes and features that you can then show him and get him excited without even having been there.

But who knows what this weed is?



In another case you have a bearing go

on the combine and you need to get it replaced. It's off an ole unit and you can't find a number. Instead of trying to describe it to your equipment parts guy, take a picture and send it to them. No sense driving all the way to the dealership if they don't have the part.

GPS Capability



Many of the newer SmartPhones have pretty good GPS capability. You can identify fields, mark features like tile drain outlets, identify where weed or insect problems are and then be able to find your way back to this point. A good example of using this feature is if you identify a broken tile drain in a field, you can take a picture showing the problem and tag the GPS coordinates to the picture. Email the picture to your drainage contractor and they can come right to the spot to make the repairs without you having to take

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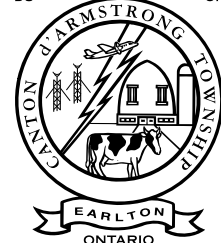
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CROP TALK

Volume 11, Issue 2

OMAFRA Field Crop Specialists — Your Crop Info Source

June, 2011

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Soybean Leaf Feeding?

by Horst Bohner, Soybean Specialist and Tracey Baute, Field Crop Entomologist, OMAFRA

Early-season leaf feeding before the 3rd trifoliate can look serious because plants are small. However, soybeans can compensate for large amounts of leaf loss with little impact on yield. Soybeans will put on new leaves quickly at the top of the plant and unaffected leaves actually grow larger to compensate. Before the plants begin to flower, up to 100% of the leaves can be removed with almost no yield loss if the rest of the growing season is favourable. If the plant is cut off below the cotyledons it will not recover. Once the plant starts to flower (growth stage R1), leaf feeding becomes more critical because the plants requirements from photosynthesis increase. (Refer to Table 1.) There are two main spring leaf feeding culprits of soybeans in Ontario. These are slugs and bean leaf beetles.

Slugs

Slug feeding can resemble hail damage, but damaged leaves have more of a “skeleton” appearance. Refer to Photo #1. Slugs feed on leaves, but they can also feed on germinating seeds, hollowing them out before they can emerge. There is one generation per year but two populations - one maturing as adults in the spring and one maturing as adults in the fall. Slugs are most active during cool and wet periods, and prefer environments with high humidity and cool temperatures. Crop residue or manure provides shelter from the sun.



Photo 1. Slug feeding



Ministry of Agriculture,
Food and Rural Affairs



Table 1 Percent Yield Loss of Indeterminate Soybean at Various Levels of Leaf Area Loss and Growth Stages

Growth Stage	Percent Leaf Area Destroyed									
	10	20	30	40	50	60	70	80	90	100
Vc-Vn	–	–	–	–	–	–	–	–	–	–
R1	–	1	2	3	3	4	5	6	8	12
R2	–	2	3	5	6	7	9	12	16	23
R2.5	1	2	3	5	7	9	11	15	20	28
R3	2	3	4	6	8	11	14	18	24	33
R3.5	3	4	5	7	10	13	18	24	31	45
R4	3	5	7	9	12	16	22	30	39	56
R4.5	4	6	9	11	15	20	27	37	49	65
R5	4	7	10	13	17	23	31	43	58	75
R5.5	4	7	10	13	17	23	31	43	58	75
R6	1	6	9	11	14	18	23	31	41	53
R6.5	4	7	10	13	17	23	31	43	58	75

Source: National Crop Insurance Services Inc., 1997.

Slug Control

- Tillage can be used against slugs, since the reduction of the crop residues on the surface exposes the slugs to dehydration. Plowing is not necessary. Vertical tillage (RTS, Turbo-till, etc.) in the spring can reduce slug numbers. Zone tillage or row sweepers also helps reduce spring feeding.
- Planting into conditions that help the crop to grow quickly can avoid heavy damage. Waiting to seed later in the spring can reduce damage if the field is known to have high slug numbers.
- There are no economical chemical methods available in field crops. Slug baits are available but are expensive and are only recommended for use in small problem areas. Experiments with 28% nitrogen/water mixtures or foliar potash applications have proven to be inconsistent.

Bean Leaf Beetles (BLB)

Adult feeding appears as small round holes between the veins of the leaves. Cotyledons and seedling plants can be clipped off by heavy populations. Late-season pod feeding can also be a problem. Bean leaf beetles feed on the surface of the pod, leaving only a thin film of tissue to protect the seeds within the pod. These pod lesions increase the pod's susceptibility to secondary pod diseases such as alternaria. Pods may also be clipped off the plant, but this is not the primary cause of yield loss. The most important concern is that BLB is a vector of bean pod mottle virus. This virus causes the plant and seed to become wrinkled and mottled, reducing the quality of the seed.

The bean leaf beetle can be confused with other insects, such as the lady beetle. The way to distinguish a BLB is by the small black triangle behind the head. Bean leaf beetle adults vary in colour, but always have a small black triangle visible behind the head. They may or may not have four spots, and are about 5 mm (1/5 in.) in length. Refer to Photo #2.



Photo 2. Bean leaf beetle

BLB Control

- CruiserMaxx seed treatment does an excellent job to control early season feeding. Fields with a history of bean leaf beetles should be planted with treated seed.
- If early season numbers are high enough to clip off plants below the cotyledon, the field should be sprayed. If leaf feeding exceeds 30% before flowering and 15% during flowering, then a foliar pesticide application is warranted. Matador, Silencer, Lagon, and Cygon are registered for the control of bean leaf beetle
- For late-season feeding (pod fill to maturity), the action threshold is 25% leaf feeding unless pod feeding is observed. If 10% of the pods on the plants have feeding injury and the beetles are still active in the field, a spray is warranted. Days-to-harvest intervals should be considered before spraying.

Making Hay In A Bullish Grain Market – Stepping Up Our Game

by Joel Bagg, Forage Specialist, OMAFRA

There is a great deal of optimism out there amongst cash croppers, as markets flirt with \$6 corn and \$12 soybeans. Side effects of this bullish market are higher fertilizer prices, increased demand for corn and soybeans land, and higher land rental rates. How will this impact our ability to produce profitable forages? What production strategies can we use to maintain our competitiveness?

High Fertilizer Prices

Fertilizer prices peaked about 2 years ago at what seemed to be unaffordable levels, but then declined as the economy softened. However, prices are on their way up again. While prices are very volatile, this spring many of us could be paying in the neighbourhood of \$600/T for urea, \$825/T for MAP, and \$700 for muriate of potash, plus application costs.

Forage crops remove a lot of nutrients and therefore have high nutrient requirements. With an alfalfa-grass mixture, the typical amount of phosphorous and potassium (P & K) removed per tonne of hay harvested is equivalent to about 14 lbs (6.3 kg) of P₂O₅ and 61 lbs (27.7 kg) of K₂O. Therefore the value of the removal is currently close to 2.0¢ / lb (\$44 / tonne) of dry hay harvested. As an example, assuming a mixed stand with a modest yield of 3.2 tonnes per year, hay will remove about 46 lbs (20.1 kg) of P₂O₅ and 193 lbs (87.5 kg) of K₂O, with a value of almost \$140/acre.

Without replacing P and K with manure or commercial fertilizer, the soil test will drop quickly. Assuming that it takes about 35 lbs/ac of P₂O₅ and 20 lbs/ac of K₂O to move the soil tests by 1 ppm on some soils, after only 4 years the P soil test could drop by 5 ppm and the K by 38 ppm. At lower soil test levels, this is commonly referred to as “soil mining” and is not sustainable. Low soil P and K fertility significantly reduce forage yields. The short and long term costs of poor fertility are much higher than the cost of the fertilizer.

Soil Analysis

Maintain reasonable P and K levels. Low fertility will significantly reduce the productive longevity of a stand. Higher fertilizer prices require targeting your fertilizer applications more strategically. Use a recent soil test to guide fertilizer applications. If the K soil test of the field is below 120 ppm, you can expect a yield response from top-dressing potassium. (<http://www.omafra.gov.on.ca/english/crops/pub811/3fertility.htm>)

Nutrient Recycling In Manure

Livestock producers have an advantage in maintaining soil fertility where manure is available to apply during the rotation. The best option is still to spring apply manure to corn crops in the rotation. However, there are some

potential advantages to applying liquid manure to forage crops, including yield and quality benefits, spreading the workload, reducing manure storage requirements, preventing soil compaction, and reducing environmental risk.

Need to Add Value to Marketed Hay

Hay producers that market hay off the farm need to consider the replacement cost of P and K removed in hay. They need to “add value” to their hay in the market place by producing a quality product. It just doesn’t make sense to produce and sell \$20 round bales when they contain almost that much value in P and K.

Livestock will still need to be fed. Can the market pay the kinds of prices required to reflect high land and fertilizer prices? I don’t know, but if it doesn’t there may be a lot of hay acres move to other crops.

Historically, standing hay has often been an excellent buy. The P and K removal alone means that the historic 1 - 2¢ / lb of standing hay is way under the mark today, even before considering an opportunity cost for land rental and amortized establishment costs.

Higher Land Costs

High cash crop prices are also driving up land rental rates as farmers compete for land. Many older hay fields are being rotated to corn and soybean to take advantage of the higher prices. Some of the more marginal fields may be improved with tile drainage. What will all this mean to hay availability and prices? Are we moving to an era when hay inventories are much tighter and prices are on the increase?

There is a wide range in land rental opportunity costs across Ontario, from well over \$200 / acre to less than \$20. Assuming a \$120 rental rate for field that produces 3.6 tonnes of hay per year, the “land cost” portion would be about 1.5¢/lb (\$33/tonne). On the other hand, poorer land (likely not able to grow corn or soybeans) renting for \$25/ac and yielding 2.3 tonnes would have a land cost of about 0.5¢/lb (\$11/tonne).

Increase Forage Yields by Shortening the Rotation

Where land costs are significant, forage cost-of-production (COP) can be reduced by increasing yields per acre. It’s time to step-up our forage management by improved establishment and weed control, and by scouting for insects and disease. Let’s give forages the same level of management that is given to other field crops.

Alfalfa yields are usually their highest the year following establishment, and then gradually decline with stand age due to disease, loss of vigour and plant thinning. By the 4th year following establishment, yields can often decline to about 75% of the maximum yield. The decline can be even more rapid and significant with aggressive cutting schedules. This yield loss wouldn’t be tolerated in any other crop without doing something about it, so neither should it be accepted with forages.

A strategy to manage higher land costs is to consider shortening the number of years of forage in your rotation, and using the legume nitrogen credit when rotating into corn. The optimum maximum age of an alfalfa stand will vary, but many stands suffer from “old age”. Forage stands with greater than 50% legume content enable the grower to deduct 100 lbs/ac (110 kg/ha) of N from the following corn crop’s N requirements. That is currently equivalent to over \$60/acre, significantly offsetting the additional forage establishment costs. Stands that are one-third to one-half legume get a N credit of about 49 lb/ac (55 kg/ha). Research shows that in addition to the nitrogen credit, there is a significant yield benefit of alfalfa plowdown to corn of about 10 - 15%.

Establishment Costs Relatively Small

As an example, establishment costs using custom rates for machinery operations, herbicide and seed costs that total \$165/acre in a 4 year rotation at 3.6 tonnes / acre, are typically about 0.5¢/ lb (\$11/tonne) of hay. In many cases, this will represent only about 7% of the COP, far less than either fertility, land, harvest or storage. (Table 1)

Use Improved Varieties

While some farmers are reluctant to use improved forage varieties because of perceived high cost, forage seed actually represents a very small percentage of the total cost of producing forage. Seed costs of \$63/acre (14 lbs @ \$4.50) pencils out to only about 2.5% of the total COP. Using cheap seed is a poor strategy, particularly with high land costs. Buying “common seed” or varieties of poor or unknown performance is no bargain when considering the risk of lower yield or winterkill.

Improve Forage Quality

With increased costs and the importance of every forage acre counting, forage quality will be increasingly important. It just doesn’t make financial sense to spend the money to produce the forage and then lose quality to weather risk, poor harvest management and lack of storage. Cut early to avoid losing nutrient quality to advanced maturity. Use hay drying and silage technology and management to prevent harvest losses. Remove bales from the field as soon as possible. Store hay under cover and off the ground to prevent spoilage. It may be time to reconsider building that hay storage that you need.

Summary

Higher hay prices, and higher land, fertilizer and input costs requires us to do the best we can to grow, harvest and store our forage crops for maximum yield and quality, with minimum losses. Some strategies include:

- soil testing and managing P and K fertility,
- increasing yield with improved forage establishment, weed control, insect & disease management,
- shortening forage stand age in rotations and using the N credit,
- using improved varieties,
- improving quality by cutting early, and using hay drying and silage technology,
- storing hay off the ground and under cover, and adding value to cash crop hay with quality, the right bale and marketing to cover higher costs.

Table 1 – Relative Costs Associated With Hay Production

	More Productive Land 4 Year Rotation 3.6 tonnes / ac / year		Less Productive Land 8 Year Rotation 2.3 tonnes / ac / year	
	cents / lb	\$ / tonne	cents / lb	\$ / tonne
Establishment costs	0.5	11	0.4	9
P & K removal	2.0	44	2.0	44
Land rental (opportunity cost)				
\$120 / ac	1.5	33	n/a	n/a
\$ 25 / ac	n/a	n/a	0.5	11
Harvest (cutting, raking, baling, etc)	2.1	46	2.2	49
Storage	1.0	22	1.0	22
less N Credit	-0.2	-4		
Total Costs	6.9	152	6.1	135

Notes

- return to risk & management not included
- custom rates used in establishment & harvest costs
- these are generalizations for comparison and discussion purposes only - use your own assumptions and calculations

Monitoring Early Crop Development

by Gilles Quesnel, Field Crop IPM Program Lead, OMAFRA, Kemptville

Challenging planting conditions could affect crop emergence and early development. Additionally, a significant portion of the corn and soybean acreage was planted with limited opportunity for pre-emergence herbicide application. These factors will increase the importance of early crop scouting and staging to assess stands establishment and determine proper timing of post-emergence herbicide application.

Stand Establishment

An easy way to calculate corn population is by counting the number of plants in 1/1,000 of an acre and multiplying the count by 1,000 to obtain the number of plants per acre. Table 1 lists the row length equal to 1/1,000 of an acre at various row widths. For standard 30 inch corn rows, count the number of plants in 17 feet, 5 inches of row and multiply that number by 1,000 to calculate the plant population per acre.

Table 1. Estimating Plants Per Acre Using Row Lengths

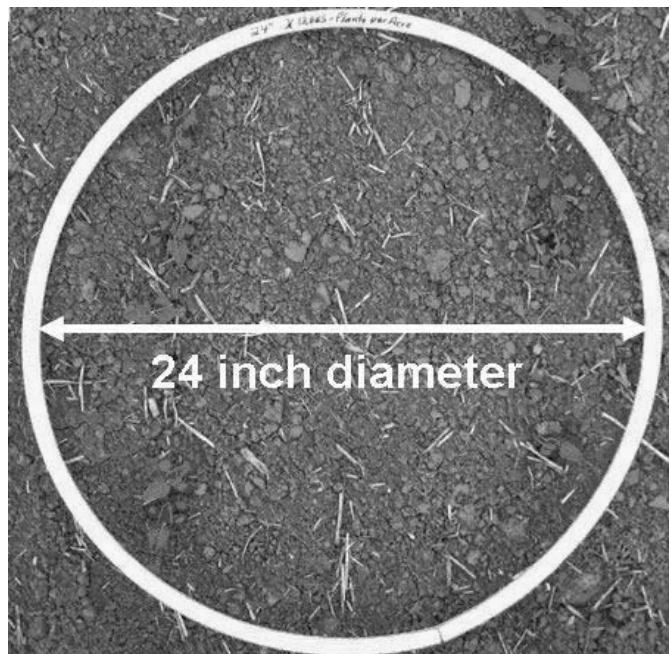
What's 1/1000 of an acre	
Row Width In Centimetre (inches)	Length of Row Equal to 1/1,000 Acre
38.0 cm (15")	10.62 m (34 ft., 10 in.)
50.8 cm (20")	7.97 m (26 ft., 2 in.)
76.2 cm (30")	5.33 m (17 ft., 5 in.)
81.3 cm (32")	4.98 m (16 ft., 3 in)

To determine plant population in narrow row crops such as 7 or 15 inch row soybeans, place a sampling frame with a known area on the ground to do the count. This is most easily done with a circular frame, either by making one out of plastic hose or using a Hula-hoop. The circular frame or hoop method is shown in Table 2. Using the hoop, determine the number of plants per acre by counting the number of plants found inside the hoop and multiplying that number by the predetermined factor for the diameter of your hoop, listed in Table 2. Figure 1 is an example of a 24 inch diameter hoop, where the number of plants (eg. soybeans, weeds, etc.) inside the hoop is multiplied by 13,865 to determine the number of plants per acre. Similarly, Table 3 lists plant population per acre for various plant counts using a 24 inch (61 cm) diameter hoop. Table 4 lists the plant count per foot of row for the different cereals planted in 7½ inch rows to obtain the target population (not counting tillers).

Table 2. Estimating Plants Per Acre Using A Hoop

Diameter of Hoop	Factor by Which to Multiply the Number of Plants Within the Hoop to Equal the Number of Plants per Acre
91 cm (36")	6,165
84 cm (33")	7,334
76 cm (30")	8,874
69 cm (27")	10,956
61 cm (24")	13,865

Figure 1: 24 inch hoop



24 inch hoop: # of plants X 13,865 = plants/acre

Table 3. Plant Population Using a 24 inch (61 cm) Diameter Hoop

Number of Plants Inside the Hoop	Plant Population (plants per acre)
3	41,600
5	69,300
7	97,000
9	124,800
11	152,500
13	180,200
15	208,000

Table 4 . Target Population for Cereal Crops Seeded in 7.5 Inch Rows

Crop	Plants per Foot of Row
Barley	14 to 21
Oat	12 to 18
Mixed grain	12 to 21
Spring wheat	18 to 23
Winter wheat	21 to 26

Regardless of the method used to determine plant population levels, at least 10 random counts should be taken in each field to determine an average.

Crop Development & Weed Control

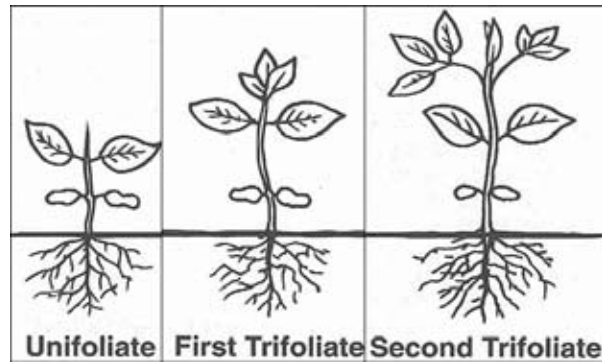
Accurate crop staging is essential to maximize the efficacy of a weed control. For crop safety, most herbicides need to be applied at a particular growth stage. Additionally, early in the growing season crops need to be kept weed-free for a specific growth period to minimize yield loss due to weed competition. The weed-free period, called "critical period of weed control" is the crop growth stages during which the crop must be weed-free to prevent a yield loss of more than 5% from weed competition. If weeds are controlled throughout the critical period, the weeds that emerge later will not affect yield and can be controlled prior to harvest, if necessary, with a harvest aid to burn down the weeds. The weed-free period is specific to each crop and can vary somewhat depending on weather, soil type, weed pressure and growing conditions. For example, the critical weed-free period will be slightly earlier in the growth stages for fields with light-textured soils under moisture stress conditions when weed densities are very high.

For corn, the critical weed-free period starts at the 3 leaf stage and extends to the 8-leaf stage of the corn. For soybeans, the critical period extends from the 1st to the 3rd trifoliate stage of soybean growth. Excellent weed control must be maintained throughout this critical period. In cereals, most broadleaf weed herbicides should be applied when the cereals are in the 2 to 5 leaf stage. In new forage seedings, most broadleaf weed herbicides should be applied when alfalfa, bird's-foot trefoil or clovers are in the 1-4 leaf stage and seedling forage grasses are at the 2-4 leaf stage. Refer to the label for specific herbicides.

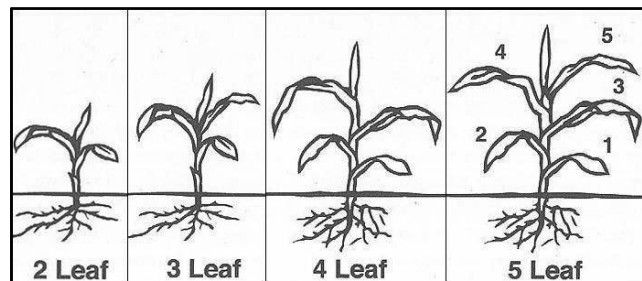
Crop Growth Stages

(diagrams from the Agronomy Guide, OMAFRA Publication 811)

Stages of Soybean Leaf Development

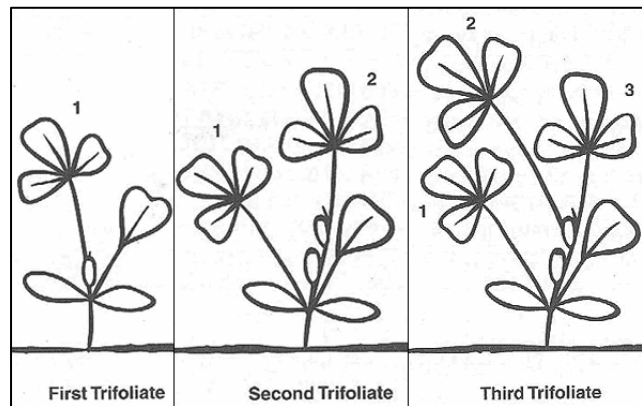


Leaf Over Method of Counting Corn Leaves

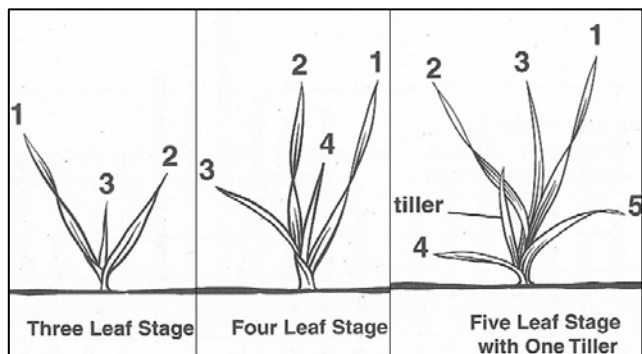


Only leaves that are fully emerged and are arched over are counted.

Stages of Alfalfa Leaf Development



Stages of Cereal and Grass Development



Economics of Manure Application

by Christine Brown, Nutrient Management Field Crop Lead, OMAFRA

The handling of manure is a cost associated with the livestock portion of the farm. Handling manure has many costs connected with it, including equipment purchase and maintenance, the opportunity cost of the time it takes to apply manure to fields, and the liability if something goes wrong and there is a spill. Additional costs may be incurred where the land base is limited and additional land must be rented, or in situations where manure agreements must be established.

Manure has value. Although mainly credited for its nitrogen (N), phosphorus (P) and potassium (K) value, manure is valuable for the organic matter additions to the soil (especially solid manure and higher dry matter liquid manures), and for the micro nutrients added.

N-P-K

The nitrogen, phosphorus and potassium content of manure have the most value when used in areas where soil fertility levels are lower. In these situations, there actually is a cost savings from not having to add commercial fertilizer. In fields where soil fertility levels are already very high, building additional soil fertility with manure will increase environmental risk. It will take many years before the phosphorus and potassium added by the manure will be utilized.

Organic Matter

The organic matter component of manure adds raw plant residues and microorganisms to the soil, which serve as a “revolving nutrient bank account” as well as an agent to improve soil structure and maintain soil tilth. The addition of manure helps to maintain soil organic matter levels, which improves soil moisture holding capacity and nutrient uptake by the crop.

Most soils in Ontario have a soil organic matter level in the 2 to 5 percent range. Decomposition and mineralization of nutrients from that range will release an estimated 40 to 80 lbs of nitrogen per acre per year. By maintaining the soil organic matter level with the long-term use of manure, it adds the additional value of soil health as well as a potential reduction in crop nitrogen requirement.

Manure Economics Worksheet

This worksheet compares the cost of commercial fertilizer application to manure application using average hog manure analysis. Nitrogen application is based on recommendations, while phosphorus and potash application meets crop removal levels. In the spring of 2011, the average cost of commercial fertilizer approximately:

N	\$0.55/lb	P ₂ O ₅	\$0.70/lb	K ₂ O	\$0.50/lb
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Average Provincial Custom Work Rates

Fertilizer Application	Cost \$ /ac	Cost \$ /hr
Custom Spread Dry Fertilizer	8	261
Rental of Dry Bulk Applicator	9	14
Anhydrous Application	14	189
Liquid Sidedress Application	11	205
Tillage Operations	Cost \$ /ac	Cost \$ /hr
Moldboard plow	24	111
Chisel/Soil Saver	20	160
Disc (primary – secondary)	16 - 14	168 – 185
Cultivate	12	203
Inter row cultivation	11	190
Rotary hoe	8	193

Provincial Average Cost of Manure Application

Spreader Type	Average Cost	
	\$ / 1000 gallons	\$ / hour
Solid Loader only	---	\$ 67 (range 50-85)
Solid Spreader only	---	\$ 93 (range 65-135)
Solid loader and spreader	---	\$ 127 (range 80-190)
Liquid Drag hose boom applicator	\$ 7 - 10	---
Liquid Drag hose - injected	\$ 12	---
Liquid Tanker – surface applied	\$ 9	\$ 127 (range 90-150)
Liquid Tanker surface applied + incorporation	---	\$ 195
Liquid Tanker – knife injection	\$ 13	\$ 165
Truck transfer	---	\$ 110

Source: 2009 Custom Farmwork Rates Charged in Ontario

WORKSHEET- MANURE VERSUS COMMERCIAL FERTILIZER

Example

Corn Yield Goal: 175 bu/ac
 NPK applied 160 lbs N
 60 lbs P₂O₅
 50 lbs K₂O

Method 1: Commercial Fertilizer:

	<u>Cost/acre</u>
Fertilizer through Planter:	
115 lbs MAP	\$41.40
Liquid fertilizer	\$ 0
Additional fertilizer	
150 lbs N (as 28%)	\$75.00
150 lbs K (once/3 years)	\$24.50
Application costs	\$ 13.67
Total Cost	\$154.57

Method 2: Manure Application

Equipment:
 3000 gallon tanker with 30 ft spread-
 width covers 6 acres per hour) + cultivator

Application Rate: 3000 gallons/ac liquid hog

Analysis 80 lbs N
 71 lbs P₂O₅
 57 lbs K₂O

N-P-K Value \$ 120
Organic Matter Value \$?

	<u>Cost/acre</u>
Cost of Application:	\$ 33.00
Additional fertilizer:	
80 lbs N (as 28%)	\$ 40.00
Application costs:	\$ 11.00
Total Cost	\$ 84.00

Net Value of manure = \$120 - \$84 = \$36/acre

Your Situation

Yield Goal: _____ bu/ac
 NPK applied _____ lbs N
 _____ lbs P₂O₅
 _____ lbs K₂O

	<u>Cost/acre</u>
Fertilizer through Planter:	
_____ lbs _____	\$ _____
Liquid fertilizer	\$ _____
Additional fertilizer	
_____ lbs _____	\$ _____
_____ lbs _____	\$ _____
Application costs	\$ _____
Total	\$ _____

Equipment:

Application Rate: _____

Analysis _____ lbs N
 _____ lbs P₂O₅
 _____ lbs K₂O

N-P-K Value \$ _____
Organic Matter Value \$ _____

	<u>Cost/acre</u>
Cost of Application:	\$ _____
Additional fertilizer:	
_____ lbs N	\$ _____
Application costs:	\$ _____
Total Cost	\$ _____

Net Value \$ _____ - \$ _____ = \$ _____

The further the field from the manure storage, and/or the less concentrated the manure, the higher the cost of application, and therefore the lower the net value of the manure. If the fields were far enough away that only 3 loads were applied per hour (ie. only 3 acres per hour), then the application cost of manure would increase to \$54/ac and the net value of manure would decrease to \$15/acre.

What Is The Future For Organic Food?

by Hugh Martin, Organic Crop Production Program Lead, OMAFRA

Forecasting the future is always tricky, but usually looking at history can be an indicator.

Historical Trends In Organic Food

Thirty years ago, organic foods and farming were mainly an ideology for hippies and the back-to-nature types, as well as a few farmers who had not embraced the transition to farming with chemicals. Organic food customers were a very small group.

Twenty years ago, spurred on by several food safety scares in Europe and North America, there was a lot of press about organic food and farming. While demand increased, the supply of organic food was very low. Organic food sales in North America were less than \$1 billion per year. Consumers wanting organic food went to the farm or to health food stores to buy this niche product. Sceptics said it was a fad that would soon disappear. The recession of the early-1990's reduced demand, but there continued to be more demand than supply. The organic food industry kept growing at 20% per year for the next 15 years.

Ten years ago, there were organic food retail sales of \$7 billion per year. While it was still only 1% of the total food retail sales, large companies started to take notice. The larger food companies purchased many of the successful small organic food companies. Organic food sales continued to grow at 15-20% per year. By 2007, organic food sales in the United States were close to \$20 billion per year. Lack of availability was a barrier to faster growth. During the last decade, mainstream supermarkets started to sell organic brands and private label organic products. Core consumers still bought over 50% of the organic food sold, but mainstream shoppers were also attracted to it as it became more available.

Today's Consumers & Future Growth

In 2008 we had the recession. Sceptics thought that with reduced or uncertain incomes people would not buy higher priced organics. Organic foods experienced slower growth, but continued to grow 5% in 2009 and 8% in 2010. Over 60% of consumers now buy some organic products. Consumers, who now refer to themselves as 'eaters', have many reasons for buying particular food products. Price continues to be a barrier, but some organic products have come down in price, and many are comparable to other premium brand products. Eaters are empowered to be able to choose the type of foods that they want to eat and feed their families. Some prefer to buy foods that are free from "something". There are many concerns about pesticides, antibiotics, hormones or GMO's in foods. Some see organic foods as being more environmentally friendly. Some eaters just want to experiment and buy a new product.

Sceptics have pointed out scientific studies that show there is no difference between organic and conventional foods. Supporters have other studies to show advantages to organic.

It is estimated that in 2010 there were \$29 billion of organic food sold in the USA and over \$2 billion in Canada. In Europe, sales of organic foods are over \$25 billion per year. Current estimates are that organic food sales will grow at an average compound growth rate of 13% per year for the next 5 years. Sales will double within about 6 years. I see no reason to doubt these estimates.

Demand Exceeding Domestic Supply

In Ontario in 2009, we had 716 certified organic farms with 115,000 acres of organic crops that produced a farm gate value of over \$122 million. These numbers are all about 1% of the provincial totals. Compared to 10 years ago, we now have 50% more organic farms and twice as many organic acres, but retail food sales are 5 times what they were 10 years ago. 4% of all food and over 10% of all fruits and vegetables sold in the USA are now organic.

Organic foods have been around for several decades. They have weathered serious challenges from the economy and sceptics, and yet organic food sales have kept on growing. The issue is how we can meet the challenge of this extra growth in demand in Ontario. 75 - 85% of our organic food is currently imported, of which over 75% comes from the USA. Canadian eaters can either eat organic foods grown in Canada or from the USA and other countries.

This is an opportunity for Ontario agriculture to diversify markets. In most cases, organic production relies more on internal production skills and less on off-farm inputs. Challenges are great, but many organic farmers are very satisfied with the results.

Do We Need To Apply A Fungicide In Spring Cereals?

by Scott Banks, Emerging Crops Specialist, OMAFRA

May 2011 has been one of those wet starts to the growing season. Wet and warm weather provides good disease growing conditions. Disease pressure makes for poor spring cereal yields and grain quality.

Is Fungicide Always Warranted?

The question is, "when are fungicides warranted on spring cereals?" Timing application to the crop stage impacts the effectiveness of fungicides to suppress disease pressure, whether it is leaf, stem or grain disease. If the weather turns dry, fungicides may not be needed. It is always important to consider the weather conditions and potential disease pressure at the time of application.

Early Application?

Another question is, “with the wet weather this May, should an earlier application of fungicide be applied?” From past research and on-farm trials, the use of a fungicide for leaf diseases when there is disease pressure present at weed control timing (or when the cereals are in the 4 - 5 leaf stage), has shown only about a 1 - 2 bushel per acre yield increase.



Figure 1 – 4 leaf Cereal Stage (Zadock's 14)

Leaf Diseases at Flag-Leaf Emerged Stage

For oats and barley, the greatest yield response from leaf disease control is when the fungicides are applied at the flag leaf emerged stage. This stage is when the last leaf emerges from the stem before the head emerges (Figure 2).



Figure 2 – Flag-Leaf Emerged Cereal Stage (Zadock's 37)

Crown Rust In Oats

In southern Ontario, oats need to have a fungicide applied at flag-leaf emerged stage (Zadock 37) for leaf diseases such as **crown rust**. Leaf diseases can be very devastating to both yield and quality, since the genetic tolerance of most of the oat varieties has broken down (Figure 3). In a 2008 oat fungicide trial in eastern Ontario, there was a 20% yield increase with the use of a fungicide at the flag-leaf stage on a variety where the genetic rust tolerance has broken down.



Figure 3 - 2008 Fungicide Trial on Oats – Note lodging in unsprayed strips

In northern Ontario, leaf diseases are less frequently an issue. However, growers should scout their fields as the oats approach the flag-leaf emerged stage, monitor the progression of the disease in southern areas and be prepared to apply a fungicide if conditions are favourable for leaf disease development.

Fungicide Products For Leaf Diseases

There are several fungicide products available for control of leaf diseases in cereals. Tilt 250E, Bumper 418 EC, Stratego 250 EC, and Headline EC can be used for crown (leaf) rust. For other diseases such as leaf blotch, Quilt can also be applied. The retail price of the fungicides ranges from \$9 to \$14 per acre plus application costs.

Fusarium Head Blight

For fusarium head blight (FHB) suppression, fungicides such as Prosaro and Carmaba are most effective if applied when the cereal is at the 20% flowering stage (Figure 4 - the beginning of flowering in wheat) and proper nozzles are used.



Figure 4 – Beginning of Flowering stage of a Wheat Head – note pollen sacs

The proper nozzle setup is the Turbo FloodJet, – alternating forward and backward nozzles to target the fungicide on both sides of the cereal head (Figure 5). On-farm trials have shown a 4 to 8 bushel per acre grain yield advantage and about a 30 - 50% reduction in the percentage of fusarium damaged kernels (%FDK).



Figure 5 - Turbo FloodJet – alternating forward and backward nozzle set up for fungicide application for FHB suppression.

More Information

For more information about disease control management strategies and available fungicide products refer to [A Field Guide to Cereal Staging](#), OMAFRA Publication 811, [Agronomy Guide](#) (p. 252) (www.omafra.gov.on.ca/english/crops/pub811/14cereal.htm) and Publication 812, [Field Crop Protection Guide](#) (p.52-81) (<http://www.omafra.gov.on.ca/english/crops/pub812/p812toc.html>)

Drive, Learn & Share

by Ian McDonald, Applied Research Co-ordinator

Over the last few months, local Soil and Crop Associations have developed some great workshops. They encouraged their neighbouring “locals” to attend, and everyone has gained from the experience. Just a few examples of some of these events include the “Sprayer Clinic” held in Brant in March 2010, the “Combine Workshop” in Peel last summer, and the “MTO Workshop” in Brant this March, the Peel SCIA Compost Tour and the Soil Fertility Workshops held at various locations across the province late this past winter. Everyone who attended these events gained from the knowledge extended and the discussion with new and old contacts. (<http://www.ontariosoilcrop.org/en/events.htm>)

OSCIA Coming Events List Server

Despite the cost of driving these days and the time it takes, I want to encourage farmers to take advantage of these learning opportunities. Car pooling with some neighbours shares the cost of fuel, and also provides a great opportunity to discuss the learning’s on the way home. To keep abreast of events that you might find interesting and useful, you should be receiving by e-mail the OSCIA events list server maintained by Neil Moore. For example, a recent e-mail post of new coming events included the “Soil and Water Management Workshop” in Bradford on June 22nd, “Victoria County Sprayer Clinic” with Helmut Spieser of OMAFRA on July 11th, and the “Thunder Bay Agricultural Research Station Open House” on July 26th. Contact Neil Moore at nmoore@trytel.net to be added to the list server.

Diagnostic Days

“Diagnostic Days” are held at Ridgetown (July 7&8), Elora (FarmSmart July 14) and Winchester (July 19) each summer. OMAFRA and University of Guelph staff bring you sessions that challenge current thinking, training you to identify and solve problems, and raise awareness of new technology. With these 3 major events located strategically across the province, one is within a reasonable drive for the majority of Ontario farmers. <http://www.diagnosticdays.ca/>
<http://www.uoguelph.ca/farmsmart/>
<http://www.omafra.gov.on.ca/english/crops/conferences/20110719.htm>

Ontario Forage Expo

Farmers with hay or haylage in the mix will want to attend the Forage Expo. This provincial “Hay Day” is brought to you by the Ontario Forage Council and Wellington SCIA in partnership with the University of Guelph and OMAFRA. New hay and haylage making technology will be demonstrated. Mark your calendars for Wednesday July 13th at the University of Guelph’s Elora Research Station. <http://www.ontarioforagecouncil.com/programs/ontario-forage-expo.html>

We look forward to seeing you out at these events. Further information is also available from the OMAFRA Agricultural Information Contact Centre at 877-424-1300.

Crop Residue Value

by Greg Stewart, Corn Specialist, OMAFRA

There is lots of talk these days about crop residue removal for bioenergy purposes. We have gone through the first wave of trying to make it very clear to those less familiar with agriculture that this crop residue has real value.

Crop Residue Value Components

Crop residue value hinges on a few components:

1. Crop residues are critical for maintaining the organic matter fraction of the soil. This in turn impacts everything from yield potential to water holding capacity, to resistance, to compaction.
2. When left on the surface or incorporated in shallow surface soil layers, residues are critical to prevent soil erosion.
3. Crop residues have value based simply on the nutrients that would be lost if these residues were removed from the field.
4. Value is attributed to residues based on the current price being paid for crop residues for traditional uses, i.e. straw for bedding, mushroom compost, etc.

So what are crop residues worth? The simple answer would be to pick up the phone and find out what someone would pay you for the wheat straw or corn stalks on your land. This would take care of item #4 above.

NPK Removal Value

Slightly more complicated is determining the value of the nutrients in the residue. Table 1 estimates nutrient concentrations in a tonne of corn stover, the fertilizer costs and the resultant fertilizer replacement value. At relatively modest fertilizer prices, the NPK (nitrogen, phosphorus, potassium) removal is valued at \$22.73 per tonne of stover.

Crop Residue Value Estimator

The P and K values are straight forward. However, the N cost is more complicated. Should I really value the N in the stover, when in fact if I remove the corn stalks I may indeed lower my nitrogen costs the next year if I was to grow corn again? This leads us to the more complex issues that demand we consider:

- the value of the organic matter, not just the nutrients, and
- the long term impacts, not just next years budgets.

If you would like to evaluate the nutrient value in various crop residue scenarios, Ken Janovicek (University of Guelph) and I have put together a calculator for this purpose. The calculator allows you to look at different levels of crop yield, costs associated with residue collection, prices for fertilizer, etc. It also presents some assumptions that you may or may not agree with. The Crop Residue Value Estimator is hosted on the IFAO website at <http://www.ifao.com/IFAO-SoilSustainability.html>.

How Much Crop Residue Is Needed To Maintain Soil Organic Matter?

What are the key questions when considering the value of the residue as it relates to long term soil health, organic matter levels and sustainable productivity? How much crop residue does it take to fuel the organic matter furnace that exists in your soil? Organic matter is constantly being broken down by a variety of processes. Crop residues need to feed the cycle in order for soil organic matter levels to remain steady in an agricultural soil. The estimates for crop residue requirements are fairly wide ranging, depending on soil factors. However, a reasonable estimate is 10,000 kg/ha/year! That is 10 tonnes of crop residue (including roots) to keep soil organic matter levels from declining.

Crop Residue Availability

The University of Guelph evaluated crop residue availability (Table 2). On average, the crop residue produced in the corn - soy - wheat scenario was 11,575 kg/ha/year. If it takes 10,000 kg/ha/year to just maintain soil organic matter levels, the amount of crop residue you could remove without some impact on productivity would be quite small. Higher crop yields, manure additions, cover crops and tillage could all play a part in assessing the value of crop residue. However, it is clear that underestimating the amount of crop residue required for stable organic matter levels, may contribute to undervaluing the crop residues.

Table 1. Nutrient removal and values from 1 tonne of dry corn stover.

	Nitrogen	P ₂ O ₅	K ₂ O	Total
Removal (kg/ha)	19	8	34	61
Removal (lb/ac)	17	7	30	54
Price of Fertilizer (\$/tonne)	\$500.00 (46-0-0)	\$500.00 (11-52-0)	\$500.00 (0-0-60)	
Value of Nutrient in Stover (\$/tonne)	\$8.51	\$2.98	\$11.24	\$22.73
Price of Fertilizer (\$/tonne)	\$750.00 (46-0-0)	\$750.00 (11-52-0)	\$750.00 (0-0-60)	
Value of Nutrient in Stover (\$/tonne)	\$12.77	\$4.46	\$16.86	\$34.09

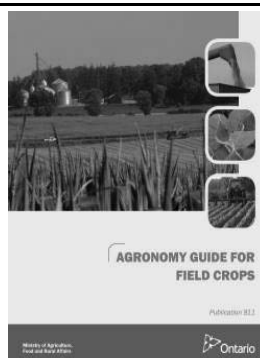
Table 2. Total crop residue production (above and below ground components) from a three crop rotation. Estimates provided by Hilla Kludze et al., University of Guelph, 2010.

	Corn	Soy	Winter wheat
Grain Yield (bu/ac)	162	44	80
Total Residue (kg/ha)	17, 147	5, 658	11, 919

Publication 75 Guide to Weed Control



Publication 811 Agronomy Guide for Field Crops



Publication 812 Field Crop Protection Guide



To order any of these publications visit
<https://www.publications.serviceontario.ca/ecom/>



Grassroots Innovation
Since 1939

OSCIA NEWS

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

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**Ontario Soil and Crop Improvement
Association**
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E-mail: oscia@ontariosoilcrop.org
<http://www.ontariosoilcrop.org>

**OSCIA 2012
ANNUAL MEETING**
Mark the Dates NOW
February 7 & 8, 2012

VISIT OUR WEBSITE

www.ontariosoilcrop.org

Message from the President - Max Kaiser



Greetings from your
President...

It seems rather difficult to stay focused this spring with the weather largely conspiring against agriculture in the southern parts of the province. While the North-East and North-West are mostly on-track, a lot of the rest of us find ourselves struggling to catch up to

our normal timelines. Just remember: Nature thrives on adversity. Of course that usually means that as the old or out-dated dies out, it makes way for new life to take over and flourish. Perhaps, instead, we can think of it as an off-time at our "casino", where we go to gamble every day!

Communication stays on our front burners with a will to move to newer trends in information sharing. Of course, we strongly encourage networking in whatever format or arena you prefer; we are taking a little time in supporting moves to "social networking" sites. Our own website (www.ontariosoilcrop.org) is alive and well, offering support to members as well as links to the programs we deliver to all Ontario farms. And while the directors have some tools to better communicate within, we are trying to make sound choices about other services like Twitter and Blogs for our Regional Communication Coordinators (RCCs) and beyond. We just want to make sure our efforts are well invested and not over extending our resources.

Networking goes on in Guelph, too, where our fantastic staff continue to deliver the programs we do on behalf of various partnerships. Yet, there is

always new opportunity, new partners, new interests to explore. Balancing member benefits, strategic directions, and meeting the ever changing climate of our industry is quite challenging, and we are always pleased with how well Provincial Staff accomplish that act.

Plans are no doubt beginning to solidify for our Annual Summer meeting. This year we travel to Grey County, the hosts being Joan (1st VP) and James McKinley and their son Robert. This is always a highly anticipated event for the directors as it takes us to new parts of the province every summer. Also, it is a great opportunity for the hosting county to showcase its many splendours.

So, try to keep your chin-up, don't miss a rainbow because you were looking down! It is sunny as I write this (Yet here I sit at my desk!), so, perhaps, summer is finally on it's way!!!

Max

**2011 Annual Meeting Speakers:
Carol Mitchell, Minister of Agriculture,
Food and Rural Affairs
-Krista Gladstone, RCC St. Clair Region**

Carol Mitchell, Minister of Agriculture, Food and Rural Affairs was one of the presenters at the 2011 OSCIA Annual Meeting held in Niagara Falls on February 8 & 9.

Carol Mitchell was elected as Member of Provincial Parliament in 2003 and re-elected in 2007. She was appointed Minister of Agriculture, Food and Rural Affairs in January 2010. Minister Mitchell was born in Clinton, Ontario and raised in Goderich Township located in the heart of Huron County. She attended Fanshawe College in London, Ontario and upon graduation from college, she started her own business and ran that for 10 years.

Minister Mitchell commented that 'you can take the girl out of the country but you can't take the country out of the girl'. She thanked the OSCIA delegates for inviting her to the meeting and for their ongoing support of agriculture. She discussed the history and excellent working partnership between the Ontario Ministry of Agriculture, Food and Rural Affairs and the Ontario Soil and Crop Improvement Association for the past number of years. She stated that these two organizations have worked together to protect and manage soil, water, air and crops.

Minister Mitchell also spoke about the very popular Environmental Farm Plan (EFP). With over 35,000 participants since the program began in 1993, this internationally recognized program has been very successful in helping Ontario farmers adopt more environmentally sustainable practices. An additional \$3,000,000 was recently provided into the program to help even more farmers take part in this excellent program. Minister Mitchell was pleased to report that they were also able to partner with the Growing Your Farm Profits workshops where 2,500 farmers were offered assistance and resources to maximize their long-term farm business goals. Workshops are available free of charge for all Ontario producers, as well as farm families and farm management teams. After the two-day workshop, farmers and their management team are able to clarify an Action Plan for the farm business, start the planning process and begin to access the resources needed to achieve those goals. These skills help Ontario farmers to develop strong business plans and compete in the challenging market place.

Minister Mitchell encouraged the ongoing, good working relationship between OSCIA and OMAFRA. She asked the delegates to continue to work with OMAFRA to build a strong, sustainable future for agriculture in this province. She acknowledged the excellent reputation that Ontario farmers have and advised the group to keep up the good work. On behalf of OMAFRA, Minister Mitchell thanked the group for its hard work and dedication and thanked them for inviting her to speak this evening. Joan McKinlay thanked Minister Mitchell for attending and stated that we look forward to working together in the future.

**Possible Solutions for
Agricultural Bale Wrap Recycling?**

At most Environmental Farm Plan workshops, the topic of agricultural bale wrap recycling is raised. Evolution Biopolymers Inc. (EBI) is a Kitchener-Waterloo region based manufacturing company that has a unique agricultural film recycling method for recycled Ag silage film. This is expected to come on steam by September 2011. Trials will begin in early July 2011.

What differentiates EBI is:

- ▶ unique washing process
- ▶ market access to end-use applications of reprocessed Ag film

- ▶ proven track record in producing Agri Biocomposite resin formulated by the Bioproducts Discovery and Development Center (BDDC), University of Guelph, for consumer product applications (bio-bins now available in Home Hardware, and soon at Canadian Tire).

EBI will be consulting with Ontario Soil and Crop Improvement Association (OSCIA) to coordinate a practical collection logistics process. Bruce Kelly at OSCIA will be monitoring progress as he liaises with EBI during its start-up trial.

**Seed Bytes - Harold Rudy , Secretary
Manager, OSGA**

Setting the Standards for Seed Testing

Quality assurance is increasingly important for global food security as well as for the production and trade of certified seed. The Canadian Food Inspection Agency (CFIA) works with the seed sector in Canada to maintain the infrastructure for seed certification, including the accreditation of private laboratories. See full details at: <http://www.inspection.gc.ca/english/agen/liaison/2011/vol1-3e.shtml#a5>

‘Liaison’ is the name of the CFIA magazine, which is published quarterly with many interesting and relevant articles on safeguarding the food supply. See ‘Liaison’ at: <http://www.inspection.gc.ca/english/agen/liaison/2011/vol1-3e.shtml>

Attention Seed Growers!
CSGA Annual Meeting
July 6-9, 2011

Sheraton Hamilton Hotel
Book your room NOW!

VIP Invitation To OSCIA Members



Presented by
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Canada



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Free Brunch

8:30 – 11:00 am*
September 13 & 14, 2011
(First two days of show only)
Canada's Outdoor Park
Woodstock, Ontario

New for 2011! Breakfast vouchers will be by e-invitation only.

To ensure your place at this event, please forward your email address to your county OSCIA secretary by August 1, 2011. To reduce costs this year, paper tickets will no longer be sent by mail.

Watch for more details soon!

*Quantities limited.

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Putting the AgSmarts into Smartphones: The Basics

Continued from page 5

any more time on the issue.

Audio/MP3 Capability

Now why on earth would this be of any value to me? Most people think of this function as only being for playing music. Well in today's modern world with lots of excellent commentary out there, do you want to have to depend on their timelines or your own. As an example, lots of people follow Peter Johnson and his Cropline but goodness gracious it's not everyday that I have a straight 20 minutes to listen to his rant. More frustrating is when I am tight for time and I want to hear what he has to say about growing hemp and I have to patiently wait till he gets through all those mundane crops like corn and soybeans, and oh yes, better not forget wheat.

How about then signing up for the Cropline podcast which you can setup to push out to you? The newest version shows up on your device and you listen to at your chosen time and location. Better still, you can jump right to the important hemp content right from the beginning.

There are many sources of commentary and more and more of its available with an agricultural flavor. News items, marketing talks etc are becoming more common place. Have a good book that you haven't had time to read. How about listening to it while you sit in your enhanced environment cab and let the auto steer do most of the work. It's also possible that you can put text books on your device but this concerns us a bit that you'll get so absorbed you won't hear that buzzer/alarm go off as you near the end of the field.

Web Browsing and SmartPhone Applications

This is where the real power of the SmartPhone comes from. You can search the internet from a SmartPhone just like you can from the office computer. Savvy companies have adapted their web pages to be read efficiently by SmartPhones. It's not quite as user friendly an experience as with your office computer because you are constrained by screen geography, but its getting better all the time.

"Apps" is a new word in the SmartPhone world. Its really just short for "Application" but the acronym has really caught on. Apps are little pieces of software that reside in your SmartPhones memory and

perform a very specific task quickly. For example in the absence of an App, if you want to get weather information you have to open your browser, type in a url web address, or search words, wait for the system to find the main page and then navigate to the right page in the website. This takes time and equally important it is using up "bandwidth" aka data, which is costing you money. If you have an app for the weather on your computer it does things like continuously update the weather right on your device. To click on the App icon and are immediately taken to the information you are after. No fuss, no mess and little data usage!

You can find Apps for almost anything and more and more ag related companies are developing Apps for their customers. Banking, weather, news, markets, equipment purchase, cultivar pickers, herbicide selectors, weed identifiers, you name it and you can find an App for it with more arriving daily.

Market information is a great example of the power of SmartPhones in being "game changers" in agriculture. If you're busy and away from the office, maybe you only get to check the market prices a couple of times a day. A SmartPhone with the right App, has continuous market information being pushed out to your SmartPhone, so you have almost instantaneous access to market prices. Catch the right trades and you can probably pay for your entire years SmartPhone costs.

Wrapping It Up!

Having a cutting edge SmartPhone may seem an extravagance at first glance, but producers don't have the luxury of being disconnected from those "office" or management responsibilities. Many SmartPhones now come with operating systems that allow mapping or record keeping software to be uploaded. And with the cost of a smart phone becoming increasingly affordable, it may represent the most powerful and cost effective technology on the farm, which is pretty impressive for an item that fits in your pocket.

Web and App Stuff

- Weather – forecast and radar
- Markets
- Yellow Pages
- News

Continued on page 22



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N.E. Ontario Wheat Growers

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SUPPORTING TEMISKAMING FARMERS

Integrating Remote Sensing, Visualization, and Weather Station Data – An Update

The Departments of Geography and Computer Science and Mathematics at Nipissing University are continuing to develop a web-based system for integrating new technologies for decision support. At present, a user interface has been developed that integrates remote sensing imagery and data visualizations from weather station sensors. Measurements of soil moisture, rainfall, air and soil temperatures, humidity, and other key environmental variables acquired from weather stations are collected into a database management system. The database can then be used for displaying historical data graphically, and for statistical analysis for decision support.

The interface currently consists of thumbnail imagery of an entire region (e.g. Temiskaming Shores, Verner). Specific areas of interest can be magnified by moving a small window across the thumbnail. Users can also select an area of the imagery from which to display environmental data from weather stations. Different time series can be shown on the same graph, allowing historical comparisons (e.g. rainfall from a given period in different years) to be made. Additionally, useful statistics, such as maximum, minimum, average, etc., are displayed for each selected period. Producers will also be able to share critical data sources, such as digital photos, for pinpointing disease outbreaks, for determining crop health, and for assessing general agricultural conditions. By choosing specific regions on the map, photos from that area can be displayed. The current prototype interface is shown below.

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Putting the AgSmarts into Smartphones: The Basics

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- Banking
- Twitter/Facebook
- Information!
- New ag apps here or on the way – mobile weed diagnostics (Pioneer, Dekalb, etc)

Smartphones - Links for Farm Applicable Software and Sites

Agricultural Markets_Farms.com

<http://mobile.farms.com/markets> This is a free service from Farms.com. You can customize the information you receive, but for most producers the 'Grains Overview' will be a good starting point.

GFO Smart Sell

<http://www.gfo.ca/sellsmart.aspx>

Weather Environment Canada offers a mobile version of current conditions and weather forecasts. Start at <http://gc.ca> (The Government's Mobile site) and choose Weather.

The Weather Network has a mobile app that is stored on your phone to make it easy to get up to date weather information. Start with this site on your home computer <http://www.theweathernetwork.com/mobile/applications> to get instructions in how to download from your phone.

The Weather Channel (US) Mobile - <http://www.weather.com/mobile/> OMAFRA Resources Baute BugBlog keeps farmers up to speed on everything from soybean aphids and slugs to bean leaf beetles and western bean cutworm. Access it at <http://bautebugblog.com> Weed Specialist Mike Cowbrough has put together two excellent resources for weed identification and control. <http://m.weedinfo.ca> offers a library of information on weeds in Ontario.

<http://m.weedpro75.com> allows you to input which weeds you want to control and spits out a list of herbicide mix solutions.

OMAFRA CropLine Podcast

<http://www.omafra.gov.on.ca/english/crops/cropline/index.html>

News/Sports

Many of the large papers and TV networks have mobile sites that allow you to access their information from your smartphone. Here are a few of our favorites.

TSN

<http://m.tsn.ca> CBC – <http://m.cbc.ca>

cbc.ca National Post – <http://www.nationalpost.com/m>

Globe and Mail

<http://m.theglobeandmail.com>

Bloomberg Business

<http://www.bloomberg.com/tvradio/mobile.html>

Miscellaneous YellowPages Directory

Search the App Store/App World for 'Yellow Pages' or <http://mobile.yip.ca/tour/>

Mobile Banking

Royal Bank can be found at <http://www.rbc.mobi>. Check with your bank website for similar options.

YouTube

Search and watch videos at <http://m.youtube.com>

Google

your best friend for searching for other resources and applications <http://www.google.com>

Agronomy Apps

<http://www.pioneermobilesite.com/mobile/> <http://dekalbmobile.ca/>

Smart Phone Information for Farmers

Farming with a Smartphone

<http://insideag.blogspot.com/2009/04/calling-all-farmers-your-smart-phone-is.html>

CNN article: Smart Phones on the Farm

<http://edition.cnn.com/2009/TECH/07/02/twitter.farmer/>

What is a Smart Phone?

http://smartphones.about.com/od/smartphonebasics/a/what_is_smart.htm

Smartphone Buyers' Guide

<http://www.technobuffalo.com/about/smartphonebuyersguide>

Cell Phone Reviews

<http://www.cellphones.ca/>

Smart Phone Reviews

<http://reviews.cnet.com/best-smartphones/>

Steve Punter's Southern Ontario Cell Phone Page

<http://www.arcx.com/sites/>

Canadian Wireless phone Forums

<http://www.digitalhome.ca/forum/showthread.php?t=57249>



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noront.agrifood@sympatico.ca www.norontagrifood.org

2011 Giant Pumpkin Growing Challenge –

Join the fun and grow your pumpkin!



2010 Champion Giant Pumpkin Grower Jeff Warner with his winning entry at the New Liskeard Fall Fair. Jeff's Giant Pumpkin weighed in at 636 lb.

Have you planted your pumpkin seed? During April 2011, NOAFEM distributed almost 1,500 giant pumpkin seeds throughout Northern Ontario. Although it is not a requirement to enter your pumpkin in the competition nor does it have to be grown from the seeds that were distributed, the challenge to grow a bigger one is REAL! The rules are simple:

1. Your pumpkin must be grown in Northern Ontario
2. You must bring your pumpkin to one of the 5 designated weigh-in sites in September
 - Desbarats Farmers' Market
 - Powassan Farmers' Market
 - CMPS Fall Fair in Mindemoya
 - New Liskeard Fall Fair
 - Anderson Farm Fall Fair in Lively

3. You must pay the \$2.00 registration fee

What are winning secrets? Dedicated growers tell us that using well composted manure mixed with really good soil; keeping the plant well watered and some suggest feeding treats such as milk, beer or ginger ale makes the difference when growing the really BIG one.

The 2011 Green Expo

Friday July 22nd from 2 pm – 6 pm

Saturday July 23rd from 9 am to 2 pm

Johnson Township Community Centre in Desbarats

Features – **Living in the Country Expo**

canning, safety, and life skills workshops

Highlight – local meal on Friday night

Welcome to Northern Ontario's Agriculture!

2011 *Boreal Harvest* and *Your Farm Directory* publications have been distributed throughout Ontario. Rural Northern Ontario yields a wonderful range of visual and tactile experiences for your family to enjoy. *Boreal Harvest* invites you to learn about the North's ample selection of produce, products and art while *Your Farm Directory* encourages everyone who either lives or travels in Northern Ontario to sample northern local products and visit our farmers' markets.

Why buy local?

When purchasing from local farms, quality and freshness are guaranteed in the products you choose:

- ✓ local produce is picked fresh and tastes best
- ✓ encourages healthy eating
- ✓ helps to better understand where food comes from
- ✓ reduces transportation and the need for packaging

Where can you find local products?

- at your local farmers' markets – 20+ in Northern Ontario
- ask for it at your supermarket
- visit the local producer / farmer

Did you know there are 3,016 farms in the 11 Districts of Northern Ontario?



Northern Maple spent two days at the Station Mall in Sault Ste Marie in support of local agri-producers and interacting with mall customers. Eleven local farm businesses promoted their business. When you choose to buy locally, you are helping to create Northern Ontario jobs and improve the local economy.

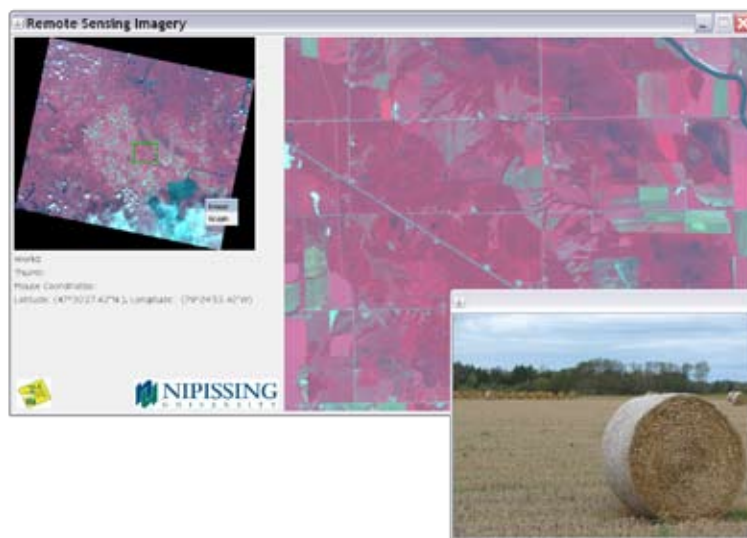
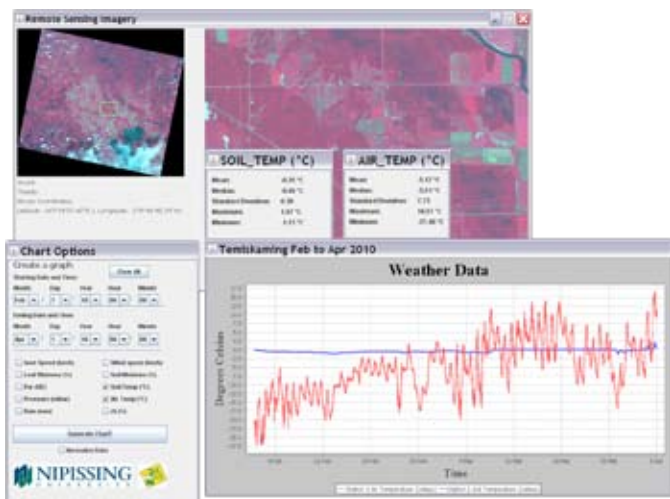
Integrating Remote Sensing, Visualization, and Weather Station Data – An Update

Continued from page 22

For this web-based service to be useful, it must be as easy to use as possible. The development group is continually exploring new ways to make interacting with the system better. The services were designed using proven software engineering technology so that changes and improvements can be made quickly. Research into human-computer interaction (that is, making software intuitive and useful) is also being employed. However, one of the best ways to ensure that the needs of the producers are met is for them to use

will continue to work closely together throughout all phases of development. Meetings and discussions with members of the agricultural community have resulted in valuable constructive information and suggestions. Positive feedback from future users has been very encouraging. Continuing collabora-

tion and community input are expected to ensure a successful and intuitive tool to support increased productivity and improved decision-making. For specific questions regarding this software, please feel free to contact Dr. Mark Wachowiak by phone (705-474-3450 ext. 4115) or by e-mail (markw@nipissingu.ca).



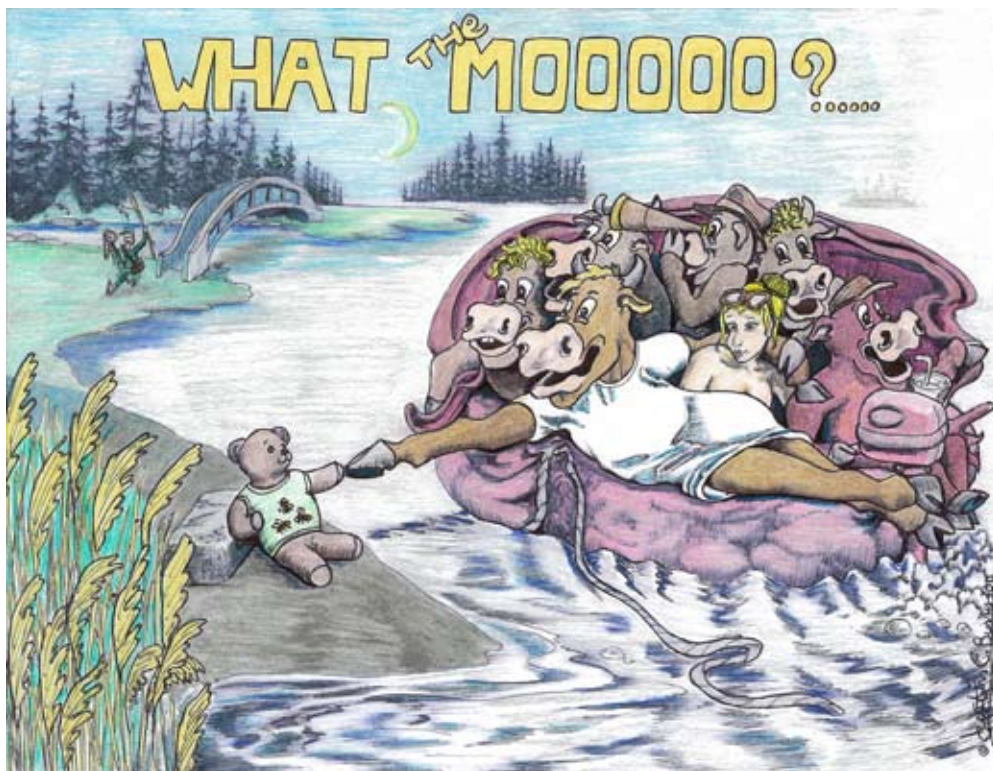
Producers will have the ability to upload digital photographs associated with specific geographical areas.

Prototype Software – Users can magnify specific regions by moving a selection box along a thumbnail image. Users can also display time series for environmental variables by selecting time periods of interest. Helpful statistics for the selected time series are also provided.

the services and to provide feedback and suggestions.

The group is currently working on many enhancements. These include making the tools available as web services through the Internet. It is also addressing the challenges of on-line tools, such as ensuring quick access to images and visualizations. Better ways of visualizing the remote sensing imagery, including contrast enhancement and brightness control, are also being implemented. Communicating and sharing ideas will be facilitated through an interactive forum with a blog option, which is being developed.

Nipissing University and its partners



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