



Heartland

June 2016

Soil & Crop News



Planting for Future Generations
✦ OMAFRA Crop Talk | OSCIA News | Local Events

Publications Mail # 40046341





MEL'S MISCELLANEOUS

**Regional
Communications
Coordinator**

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I hope you all had a good planting season. I didn't get to plant anything (not even a garden!) but was happy enough to get some time in buddy seats across the province, watching some of Ontario's most innovative farmers 'plant green' and I saw three examples of roller-crimping: soybeans into rye, pumpkins into rye (see back page) and corn into vetch. When the cover crop has went to head/ flower, the crimping 'blades' on the roller will break the stem and terminate the crop without the use of chemicals. The cover crop then becomes a mulch to suppress weeds, build organic matter and protect the soil. This is both an art and a science that we're just starting to figure out in Ontario, and I have so much admiration for these farmers who are stepping out of the box and trying it.

Around the region, counties will be having their summer meetings (see page 5) and of course there is Farm Smart Expo on July 14th at the Elora Research Station, so be sure to check that out too!

Lastly, I'd like to let you all know I've resigned from the RCC position and by next issue, you'll be reading the ramblings of some other person in this space. I work full time as the Environmental Coordinator at Farm & Food Care and would like to focus my efforts on the good work we're doing there. I have had a great time in this role, working with great farmers and for a cause I truly believe in. I'm quite sure I will still remain involved in the OSCIA and still see you out and about !

Stay in touch!

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**Farming isn't rocket science...
It's much more complex than that.**
- Jerry Hatfield, YieldSmart 2016

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Managing Wheat Diseases in Your Field

Forages: Past, Present & Bright Future

Soil, Water & Management Decisions

Learnings From The Pits!

Exploring Nitrogen Optimization in Corn

Nitrogen Stabilizers: Do They Provide Application Timing Flexibility?

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All across Heartland this summer there will be events that capture the essence of what the Ontario Soil and Crop Improvement Association is all about. New and innovative agricultural ideas focusing on outstanding performance and environmental responsibility will be centre stage. And while these events usually go off without a hitch, Boards of Directors we must always be aware of unforeseen circumstance.

The OSCIA Executive and Staff have always been diligent about arranging proper liability insurance for the locals and regions. Referred to as D&O (directors and officers) insurance, it gives directors confidence that they can do their work with the knowledge there is a level of support behind them. While the provincial body arranges this insurance it is important for the locals and regions to do their part so OSCIA has the proper documentation to

provide to our insurance company. A proper Constitution and Bylaws, Annual Report and list of officers, directors and complete membership list must be submitted to the Guelph office in due time. In the case of the region a financial report is required as well. Fulfilling these obligations is important and all directors should be aware of them and give support to Secretaries and our RCC to ensure they are taken care of. Doing this will help us go forward assured that we have the proper protection in place regardless of the situation. I want to say thank you to the hard working committees that have arranged this summers events. They will be fantastic as usual and I will make my best effort to come out and enjoy them !

SUMMER EVENTS

See www.heartlandsoilcrop.org/events for more information.

- June 28** Perth Twilight Tour, Bornholm 5:30– 8:30 (see page 10)
- July 5** Forage Expo 10-3:30 Carman & Beth-Ann Wepler and Family
5704 Minto/Normanby Townline, Clifford
- July 12** Grey SCIA Tour, Don Ready's 236237 Grey Rd. 13 Kimberly
- July 14** FarmSmart Expo, Elora Research Farm (see opposite)
- July 21** Wellington SCIA Tour, Ken Musselman's, 7325 Cnty Rd 21, Elora
- August 16** Waterloo SCIA Classroom in the Field
10am –3pm at Darcy Weber's Farm 1610 Floradale Rd, Elmira
OMAFRA Soil Team and pig roast for \$5!

ALPINE K20-S® Improving Alfalfa Crops

With the launch over the past year of ALPINE's two new potassium based products, ALPINE HKW-6® and ALPINE K20-S® we've seen some encouraging results on soybeans, both in-furrow and foliar, but the biggest surprise may well be some early trials on alfalfa.

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kept pace with replacing lost potassium from the soil bank. Soybeans are very guilty of this where a 60 bu/ac crops removes nearly 90 lbs of potassium and are grown often without any supplemental fertilizer. ALPINE K20-S® contains the most plant available type of potassium that's available today. When foliar applied it has a very high percentage of it that gets inside the plant where it's needed.

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ALPINE K20-S® has an excellent nutrient makeup to benefit Ontario's big alfalfa crop. Early results look very encouraging on its application to alfalfa, keep in touch with your ALPINE dealer or ALPINE DSM for further results.



8L ALPINE K20-S® on left, untreated on right.



Planting for Future Generations

Dave and Connie Bray give back to their farm and the community

You may have seen Dave's face out at OSCIA events. Maybe you see him as 'the government' or maybe you see him as I do, as tremendously helpful to the community and dedicated to agriculture. Dave Bray has had an interesting and varied career in public service that has taken him up north with the Ministry of Natural Resources, into the Ministry of the Environment and now he is at OMAFRA as an Environmental Specialist in Perth County.

Dave grew up on a farrow to finish hog farm near Conestogo Lake and always wanted to keep farming. But at 17, when his dad asked him what he wanted to do, they were in the midst of the 80's. "There didn't seem to be opportunity in agriculture for me then so I went with my second love, and that was natural resources," he says.

After studying at Fleming College, Dave worked up north with the Ministry of Natural Resources as a fire ranger, a tree planter and forestry technician. He also did public events on fire prevention with Smokey the Bear. "I was usually Smokey's handler," laughs Dave. "I wasn't quite tall enough to fit in the costume."

Dave moved back to the area, met his wife Connie and moved to her farm just outside of Listowel almost 20 years ago. Connie had three sons they raised and now they have two six-year-old grandsons. They pastured cattle and had sheep for many years, along with chickens and other livestock. But, the farm was difficult to run with his work schedule and they gradually got out of livestock.

Around the time of the Walkerton *e.Coli* outbreak, Bray was back at Fleming College studying GIS and then worked mapping the wells of the Walkerton area. He wanted to work more closely with agriculture and in 2003 he got in on the ground floor to the newly evolving Nutrient Management program with OMAFRA and stayed in the department as the McGuinty government transferred it to the Ministry of

Environment. He was there for seven years and took the opportunity to get back into OMAFRA in 2011 as an area Environmental Specialist.

Dave and Connie have 300 acres, some share-cropped and some rented, with 40 acres of woodlot between all the farms. They have taken advantage of cost-share programs to improve the properties: well upgrades from the Healthy Futures program, fencing to keep cattle out of the woodlot through the Environmental Farm Plan (EFP) and an erosion control project through EFP as well. The Middle Maitland River runs through the back end of their home farm and they left a large naturalized riparian area on either side of it. In 2014, they planted 4400 trees into a retired pasture for their kids and grandkids to enjoy in the future. "My hope is that we leave things better than when we got it," says Dave.

Dave loves hunting and fishing and he also spends spare hours in the woodlot, cutting firewood. He leads youth groups on boating trips and hikes, as well as volunteering with the local woodlot association, and a Habitat for Humanity project for Community Living North Perth. Of course, he is a dedicated OSCIA member as well.

With a foot in both agriculture and the public service, Dave is an important link. "I like being on the ground as much as I can, and to take what's going on in the farm community back to our program and policy folks at OMAFRA," says Dave. "I hope that the programs and policies make as much sense I can give input to. I always think back to my farm background and ask 'if we were still farming what would that mean for me in terms of what I'd have to do?'"

"I love my job in that I get to work with farmers and my entire career has been truly public service," says Dave. His career has been about giving back to the environment, to agriculture and the community, while planting for the future. If you see Dave and Connie around this summer, be sure to say hello!



Farming Ain't Rocket Science

It's more complex than that!

Karen Dallimore

Farming isn't rocket science. It's about more than just the force of gravity; it's much more complex than that: it's more like solving six differential equations at the same time with little help from science to help understand the complex interactions.

Jerry Hatfield knows that complexity well. As a scientist heavily involved in studying the interactions among soil, plants and the atmosphere, Hatfield applauds farmers. "Despite the lack of science, you've made it work," he told the audience at YieldSmart 2016, joining crop consultant Michael McNeill this year at RIM Park in Waterloo.

While yield is often the gauge of success in farming, Hatfield says that there is only really one measure of success: profit, which can ebb and flow with the variation in yield, the gap between the genetic potential of the seed and the final yield. Why is there such variation within and between fields?

There are three components to his yield equation: genetics (G) x environment (E) x management (M). Part of the E component is managing the soil, which can help remove some of the variation we can't control, like the weather. "But the M component is up to you," said Hatfield.

Just changing one component of management though isn't enough; you can't just change tillage, for example, and not change other management factors. Remember the six equations?

So the question becomes, how can we bring these 3 variables – G x E x M – together to increase and stabilize yield over time?



Hatfield called this yield gap analysis: searching for what's causing the variation, a process he called "CSI agronomy".

Pull off ten ears, lay them side-by-side, and take a photo. You'll be able to see the difference, see what potential you have. What is your yield potential, he

asked? Write it down. How close are you to attaining it? Once we have some answers we can begin to make some changes.

What's the biggest factor affecting your yields?

The investigation starts with your soil. How has it changed in the last five to ten years? It is only through healthy soils that genetics are allowed to perform. As for the condition of the soil, Hatfield wondered, "how do you define that nebulous condition?" Do you look at compaction issues? Do you look at how the field deals with a rain event or measure organic matter levels?

For those who use yield monitors, how many analyze the data? We don't analyze enough, said Hatfield, to find out where patterns emerge.

Hatfield then asked the room, by a show of hands, how many farmers looked at their fields in the first week after planting. Many indicated they did, but the response dwindled as he asked two weeks? Three weeks? Four weeks?

In the first week you are looking for emergence, germination, and a general sense of what is going on, said Hatfield. Are the plants germinating evenly? Is there any weed pressure?

The impact of a ½ inch difference in planting depth on the emergence of corn can be 2 ½ to 3 days, a difference translates through to yield potential. In strip till, emergence is typically tighter than in conventional tillage, where scouting needs to be done for three to five days. Hatfield also recommends looking shortly after emergence to evaluate uniformity of the plants.

Michael McNeill, a crop consultant from Algona, Iowa, joined Hatfield for the presentation. He's spent the last 35 years trying to figure out why seed with a genetic potential of 500 bushels is only giving farmers 150 bushels. What's going wrong?

Does the answer lie in the health of the soil? As weather events become more extreme, farmers will have to rely on soil quality as a buffer. Last year he saw the response of his fields to eight inches of rain over four hours – an extreme weather event– feeling lucky that his farm "wasn't so bad" compared to a neighbour's farm that resembled a lake, under six inches of water.

"Our area loves to moldboard plow," said McNeill. Two hours after the storm, the water still had not infiltrated their soil. He's seen similar disasters caused by as little as two inches of rain in 12 hours; horrendous runoff, drainage

ditches and creeks overflowing, with flooding carrying through to the Des Moines River and out to the Mississippi.

Why did it happen?

McNeill used a penetrometer to find out, discovering that it took 350 pounds of pressure to drive the probe six inches deep. The top six inches were waterlogged, but the soil 18 inches down was powder dry. "That problem will haunt us in 2016."

There is a simple test – cheap and easy to perform – that can give you some indication of the water infiltration capacity of your soil. Take a piece of PVC pipe, put some plastic wrap over the end, fill it with water, and then remove the plastic wrap. Record the time it takes for one inch of water to leave the pipe and infiltrate the soil. One inch can go in as little as one minute, said McNeill, but in poor soil it can take over an hour. Knowing this can help you make money.

You're not only harvesting the sun, you're harvesting water too. Hatfield has observed water infiltration at only 10 percent for conventionally tilled fields compared to those under some form of conservation tillage with aggregate stability. That means that for every 10 mm of rain, only 1 mm is going in. "It doesn't take much to puddle that out."

If you see yellow corn after intense spring rains, it's not about nitrogen leaching, it's about oxygen availability; we're underestimating the importance of that, said Hatfield.

McNeill agreed that field monitoring is vital in the first three weeks after planting. Kernel rows are established at V4 and if there is damage from rain, frost, weed pressure, nutritional imbalances or herbicides, you can't fix it later.



Have a look at your machinery. Maybe the grain cart or combine are too large or you're going out when it's too wet? As a consultant, McNeill hears, "I've got a big tractor and a ripper," but as far as he's concerned that will be about as effective at taking out compaction as a knife and fork would be to fluff up a squashed piece of bread. A ripper will make big chunks into little chunks, but getting soil condition back takes biological activity. "Remember that slice of bread."

Farmers are continually compromising, said McNeill. New planting equipment can singulate the seed up to 10 mph, but too much speed may lead to uneven seed depth. You want to plant early as well but if the soil isn't right, you're not gaining anything.

McNeill suggested that if farmers ripped out their yield monitors and replaced them with profit monitors "it would change how you look at things...It's very depressing but informative," he admitted (he's tried it), making you think a lot harder about which fields are making you money and which ones aren't.

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 SOIL FERTILITY
 SPECIALIST

STEFAN ZEHETNER –
 HURON COVER CROPS
 OWNER



SOS: Tillage & Erosion

Huron Holds Spring Meeting March 31



It couldn't have been a more pertinent day to hold a session on soil erosion. Torrential rains caused flood watches across much of the Heartland Region on March 31st, but 45 farmers braved the weather and made it out to the Holmesville Community Centre for "Sustaining Our Soils", Huron Soil & Crop's spring meeting held in partnership with the Maitland and Saugeen Valley Conservation Authorities.

To start things off, Iowa's Dr. Rick Cruse questioned whether current soil erosion rates are sustainable. Rick made it clear that loss of agricultural land is an urgent matter and expanded on the importance of soil stewardship efforts to prepare for a future when current soil resources will need to feed a much larger population. Worryingly, Rick asserted that any projected gains in global arable land acreage will be offset by increased encroachment by non-agricultural developments, such as urban sprawl and roads. In addition, farmers' tasks will be made that much more difficult with increased projections for extreme weather events, especially increased frequencies of heavy rainfall events. In this context, Rick clearly made the case for increased soil stewardship activities and had these take-home messages: 1) Soils are critical for global food security, 2) they are economically imperative for rural areas everywhere, and 3) soils are not replaceable and have no substitute. Rick concluded that we need a proactive and all-encompassing approach to maintain our soil resources.

Farmers are clearly part of that solution, but their economic needs cannot be dismissed. According to Rick "markets are farmed, not the land" and good policy will recognize and counter the existing market forces that put conservation committed farmers at a competitive disadvantage. If society wants conservation committed farmers, then policy needs to reward these efforts and make them economically competitive.

Rick's concluding statements segued perfectly into Kevin McKague's presentation: Approaches for controlling erosion rates in Ontario. Kevin is an experienced OMAFRA Water Quality Engineer and his expertise was invaluable as he shared various examples of soil erosion structures that local farmers have employed on their own farms. Following Kevin, local farmer and HSCIA director Doug Walker introduced three courageous farmers (Ken Thompson, Alan Willits, and Kate Procter) that spoke to the crowd on their own experiences with till, strip-till and no-till practices. Finally to wrap things up there was a great panel discussion with all 5 speakers taking questions from the crowd.

The event was a great start to a partnership that will surely keep growing as both CAs look to partner more with Soil and Crop and the agricultural community on soil health management endeavours related to the Great Lakes Agricultural Stewardship Initiative (GLASI). As part of GLASI both CA's will be promoting cover crop demonstration sites and hosting best management practices workshops at farms across their watersheds.

Ian McCormick, SVCA



Date	Topic	Host & Location
July 12th 9-11am	Pollinator Health & Habitats	Osprey Bluffs Honey Co.'s Hugh Simpson, 250 sideroad east of hwy 10, Corbetton - Exact location TBA
July 18th 9-11am	Precision Ag. Soil Sampling & No-till Management	Gerard Grubb, 585 Elora Road, Mildmay
July 21st	Cover Crop Demo Trials	North Wellington Co-op, 101311 Concession Rd. 6 Alsfeldt
Week of Aug. 1st	Cover Crop Demo Trials	Parrish & Heimbecker Exact location TBA
Aug. 18th 10am-1pm	Strip Till Management & Drones	Schaus Land & Cattle Co.'s Ken Schaus & Richard Ahrens 1633-1635 Bruce 4, Walkerton Site 1: Harry Biormans, Concession 10 between sideroad 5 & 10, Site 2: Peter Kotzeff, Concession 6 between Bruce 11 & sideroad 5, Lockerby
Aug. 30th 9-11am	Interseeding Cover Crops into Corn & Planting into Green Cover Crops	
Sept. 2nd 10am-12pm	Equipment for Best Management Practices	Bruce County Plowing Match
Sept. 12th 9-11am	Cover Crops & Berms	Harrison Burgsma & Regan Millian Lanesville Line between Glens Hill Rd. and Dunganon Rd., Dunganon
Week of Sept. 26th	Cover Crop Demo Trials	Sprucedale Agromart & Thomas Lennox



Support for this project was provided through the Ontario Soil and Crop Improvement Association from the GLASI Education and Outreach Component funded by the Ontario Ministry of Agriculture, Food and Rural Affairs, and Agriculture and Agri-Food Canada through Growing Forward 2.

Sustaining our Soils!
Each of these events are FREE!
For information on how to register, contact Tori Waugh
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CROP TALK

Volume 16, Issue 2

OMAFRA Field Crop Specialists — Your Crop Info Source

June, 2016

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A Recap on PSNT Sampling and Revised PSNT Recommendations

Ben Rosser, OMAFRA Corn Specialist

The beginning of June marks the window for the Pre-Sidedress Nitrate Test (PSNT). The PSNT measures the amount of nitrate-nitrogen in the soil just prior to traditional sidedress time and provides an indication of the soil's N supplying potential. The PSNT value may be influenced by field characteristics (soil organic matter, previous crop) as well as weather (temperature, precipitation) which impact soil nitrate release and loss. Quantifying soil N provides an opportunity to adjust N rates based on expected N supply. The delayed sample timing associated with PSNT may also help detect nitrate that has mineralized from organic N sources (manure, legumes). Because many of the factors included in the general N recommendations (or N calculator) will influence the soil nitrate levels, it is important to view PSNT recommendations independent of those general recommendations.

A Review on PSNT Sampling Procedure

Sampling is conducted just prior to traditional sidedress time when corn is 6-12" in height, typically the first to second week of June. Nitrate is more mobile than other nutrients and requires deeper sampling to better quantify supply. OMAFRA recommendations are calibrated to a 12" sampling depth, which is important to maintain for all samples pulled. Sampling should be conducted with a soil sampling probe to ensure depth is representatively collected throughout the entire sample profile (Figure 1).



Figure 1. Collecting PSNT samples with soil sampling probe to 12" depth.

Any broadcast N will increase soil nitrate levels and underestimate PSNT requirements, resulting in invalid recommendations. PSNT should not be used under these practices. A modest amount of N (e.g. 30 lb-N/ac) applied with starter fertilizer is reasonable if applied in a starter band that allows for sampling to be conducted mid-row to avoid bands.

Sample submissions generally consist of 1 lb of soil placed into a sample bag or box. Collect several samples in a clean plastic pail, and ensure the sample submitted is

representative of all cores collected for that submission. This often requires thorough hand crumbling and mixing of soil cores. Sample and submit different areas of fields separately if you believe differences in N supply may exist due to past management, soil types, topography etc.

To prevent further N mineralization by soil microbes, samples must be kept cool. It is a good practice to carry a cooler while sampling in field and during transport of samples. Submit to the lab as soon as possible for most accurate results.

Revised PSNT Recommendations

The original PSNT recommendations were released in 1993 and suggested a nitrogen application rate based solely on the soil nitrate value. While the sampling process has not changed, the PSNT recommendations were revised in 2015 with more recent Ontario N response research to incorporate both soil nitrate levels and expected yield into a sidedress N recommendation (Table 1).

Table 1. Revised Pre-Sidedress Nitrate Test (PSNT) recommendations incorporating soil nitrate level and yield.

Soil Nitrate (PPM)	Expected Yield (bu/ac)					
	120	143	167	191	215	239
	Sidedress Nitrogen Fertilizer Recommendations (lb N/ac)					
0	176	197	218	240	261	282
2.5	163	184	205	225	246	267
5	151	171	191	211	231	252
7.5	138	158	177	197	216	236
10	126	144	163	182	201	221
12.5	113	131	149	168	187	206
15	99	117	135	153	172	190
17.5	83	102	120	138	156	175
20	57	86	105	123	141	159
22.5	0	60	88	107	126	144
25	0	0	63	90	110	128
27.5	0	0	0	66	92	111
30	0	0	0	0	68	93
32.5	0	0	0	0	0	69
35	0	0	0	0	0	0

Wide Row Soybean—Are They Good Option for Ontario Growers?

Horst Bohner, OMAFRA Soybean Specialist

The majority of soybeans in Ontario are seeded in narrow rows (7 - 15"). The main issue with wide rows (30") is they often yield less than narrow rows in our climate. Research by the University of Guelph in the late 90's showed they yield 3-5 bu/ac less than narrow rows. Yield on 15" rows were equivalent to 7.5" rows. However, it may be possible to overcome this yield lag by promoting early season vegetative growth through starter fertilizer and other management strategies with newer varieties. When using wide rows it also becomes possible to fertilize in a 2X2 band which is an effective way to increase yields in a low soil testing field. Another strategy that could reduce the yield drag is the application of foliar fungicides. Tramping losses are reduced on wide rows, and fungicide efficacy may be improved due to better spray penetration. With the widespread adoption of auto steer systems, strip tillage could play an important role in helping growers overcome the challenge of lower yields with wide rows.

Why consider wide rows? Wide rows have a number of advantages, including the need for only one piece of planting equipment for corn and soybeans, lower seeding rates, less lodging, and reduced disease pressure. It may also be possible to establish a late season cover crop in wide rows. Wide row (30") soybeans typically have less white mould because of increased air movement, sun penetration, and lower plant populations.

Replicated field trials were established at Elora, Bornholm, Ridgetown and Winchester in 2015. Pioneer Seeds also evaluated wide rows across a number of locations in Eastern Ontario. The results varied depending on the test site.



Figure 1. Spring strip tillage in 30" rows.

At the Elora research station the yield lag associated with wide rows could be won back through strip tillage in 2015 (Table 1). Fertilizer and fungicides also increased yields. However, the narrow rows were also highly responsive to management at that site. Overall yields were excellent, which likely contributed to the performance of wide rows.

Table 1. Closing the Yield Gap (Elora 2015)	
	Yield Bu/ac
15" no-till (170 000 seeds/ac)	58.8
30" no-till (170 000 seeds/ac)	54.0
30" no-till (120 000 seeds/ac)	52.6
30" strip-till	58.6
30" strip-till + P K (2x2)	62.7
30" strip-till + foliar fungicide	65.0
30" all practices	68.4
15" all practices	66.4
Treatments 3-8 = 120 000 seeds/ac 2 replicates, P = 11 ppm, K = 82 ppm	

The yield lag could not be closed completely through management at the Bornholm location (Table 2). The highest yields were achieved in narrow rows with long season varieties. DS04-D3 have a relative maturity (RM) of 0.4 while Titanium's are a 1.3 RM.

Table 2. Closing the Yield Gap (Bornholm 2015)	
	Yield Bu/ac
15" no-till (170 000 seeds/ac)	56.3
15" no-till (120 000 seeds/ac)	55.8
30" no-till (170 000 seeds/ac)	51.9
30" no-till (120 000 seeds/ac)	48.1
30" strip-till	50.4
30" strip-till + P K (2x2)	54.3
30" strip-till + fungicide	54.2
30" all practices	54.0
15" all practices	60.8
15" no-till (variety P12T82R)	65.3
30" strip-till (P12T82R)	54.8
30" all practices (P12T82R)	59.1
15" no-till (variety Apex)	67.1
30" strip-till (Apex)	62.5
30" all practices (Apex)	61.8
15" no-till (variety RR2 Titanium)	69.3
30" strip-till (RR2 Titanium)	61.4
30" all practices (RR2 Titanium)	62.5
Treatments 1-7 = variety NK S04-D3, Treatments 4-8,11,12,14,15,17,18 = 120 000 seeds/ac 3 replicates, P = 15 ppm, K = 119 ppm	

At the Winchester location (Table 3) the yield gap of wide rows could be gained back for the most part through management. This site was conventionally tilled.

Table 3. Closing the Yield Gap (Winchester 2015)

	Yield Bu/ac
15" (170 000 seeds/ac)	68.7
15" (120 000 seeds/ac)	70.4
30" (120 000 seeds/ac)	65.7
30" (170 000 seeds/ac)	64.8
30" (120 000 seeds/ac) + 80 lbs/ac 11-52-0,3 gal 6-24-6	68.4
30" + 50 lbs/ac N	66.0
30" + foliar fungicide	67.5
30" + foliar fungicide + foliar feeding	69.3
30" all practices	67.6
4 replicates	

The Pioneer Seeds study showed no yield deficit to wide rows in eastern Ontario in 2015. On average the 30" rows yielded 62.1 bu/ac while the 15" rows yielded 60.1 bu/ac. It should be noted that these fields were highly productive and had white mould. The sites in western Ontario did not have white mould.

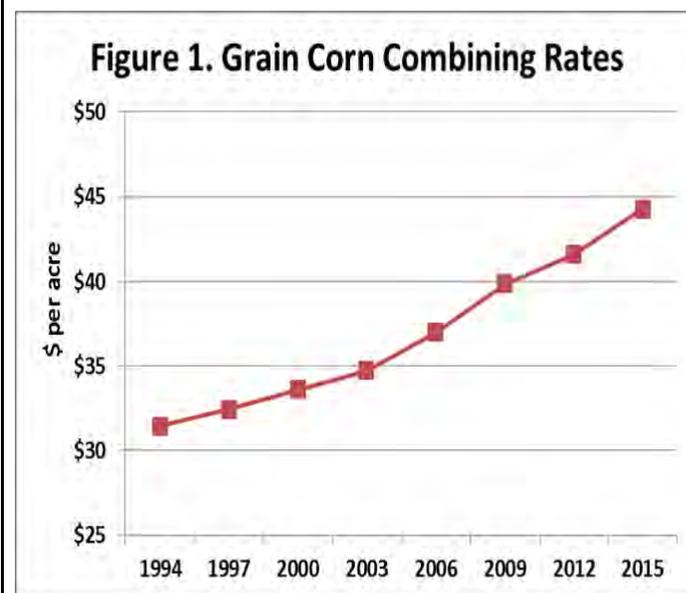
On average, the yield lag associated with wide rows was relatively small in 2015 and depended on trial location and variety. Since 2015 was an excellent soybean year with many treatments yielding over 60 bu/ac, these trials will be repeated in 2016. When there was a yield lag in wide rows it could potentially be won back with various management strategies including strip tillage, fertilizer, or foliar fungicides at most of the sites but not all. There was no evidence that wide rows responded more to these inputs than narrow rows. Overall, with adequate heat units and in fields that grow tall, bushy soybeans there may not be a yield lag associated with wide rows if the correct variety is planted. Success with wide rows will depend on good fertility, early planting, and excellent weed control. Wide rows are a good management choice for growers that have consistent white mould pressure and high yield potential. They are not a good choice for fields with lower yield potential, limited heat units, or late planting.

Custom Rates Increased Again In 2015

John Molenhuis, OMAFRA Business Analysis and Cost of Production Program Lead

Continuing a long standing trend with custom farmwork, 2015 custom rates rose from the previous report in 2012. Figure 1 shows an example of grain corn combining rates from 1994 to 2015.

Combining rates have been on a steady increase over the past 20 years, which is true of most field crop operations. Overall, per acre rates increased 8.5% across all operations from 2012 to 2015, a 2.8% increase per year.



Hiring custom farmwork allows farm managers to purchase fieldwork and other services instead of owning the equipment and doing the work. For equipment owners, providing custom farmwork services can be the focus of a business, a sideline farming enterprise that spreads equipment ownership costs over more acres, or a marketing tool to complement the sale of other farm inputs.

Every three years custom farmwork operators in Ontario are asked what they charged for custom farmwork operations. The results are reported in the **Survey of Ontario Custom Farmwork Rates Charged in 2015** (www.omafra.gov.on.ca/english/busdev/2015customrates.htm).

Averages shown in the tables of this report are a simple average of the rates charged in 2015 across Ontario. There is no assurance that using the average rates reported will cover the cost of providing the service. Before setting prices for yourself, carefully calculate all your costs and returns.

An interesting side note on demographics, in 1994 a total of 772 custom operators responded compared to 220 in 2015. There are fewer custom operators now just as there are fewer farmers.

The custom rate year over year increases may not be as high as one would expect given that machinery prices and costs in general have increased at higher rates. There could be a number of reasons for that including sample size changes over time, it is not always the same custom operators included in summary and custom operator supply and demand factors. Another possible reason could be the size of equipment they are operating and how many acres they are covering. Machinery size has been increasing over time, and covering more acres will spread the fixed costs of the machinery over more acres. For example, in 2006 the common corn planter size was 8 rows and in 2015 it was 12 rows. The work rates increased from 8 acres per hour to 10 acres per hour from 2006 to 2015. Custom operator machine size data is not available for years earlier than 2006 but the trend of increasing machinery size over time would likely hold true.

The costs to own and operate machinery are increasing and custom rates reflect this. Table 1 shows the increase in custom rates for grain corn operations from 2009 to 2015. Rates increased \$12 - \$13 or 8% between each survey period. It's important to know your machinery costs to help you make the decision whether owning your own equipment or hiring custom operators is the best option.

Table 1. Custom rates comparison			
Corn operations	2009	2012	2015
Plow	\$24	\$25	\$29
Cultivation (2x)	\$24	\$26	\$28
Plant	\$19	\$22	\$22
Spraying	\$9	\$9	\$10
Fertilizing	\$8	\$8	\$9
Harvest	\$40	\$42	\$44
Trucking	\$32	\$32	\$35
Total	\$152	\$164	\$177

The OMAFRA Factsheet **Guide to Custom Farmwork and Short-term Equipment Rental** (www.omafra.gov.on.ca/english/busdev/facts/13-039.htm) provides decision-making tools for farm managers and custom farmwork operators to manage the use of equipment and work time to meet production and profit goals. There are also Excel-based **Farm Business Decision Calculators** to help calculate custom farmwork and short-term equipment rental rates (www.omafra.gov.on.ca/english/busdev/downtown.htm).

Reducing Mycotoxins in Corn Silage with Application of Fungicides

Scott Banks, OMAFRA Emerging Crops Specialist

Fungi that infect crop plants and produce mycotoxins can reduce grain quality and profits, but they can also affect the performance of livestock who consume infected feed. There are a number of mycotoxins that can be found in Ontario crops, and the one we discuss most often goes by a few names: deoxynivalenol, vomitoxin or DON. We typically have greater levels of DON when there are cool, wet conditions during pollination and grain fill.

In corn, DON is produced by *Gibberella zeae* (the name of a specific life cycle of *Fusarium*) and presence of DON can cause cattle to refuse feed. At DON levels above 0.5 ppm in feed there can be cause for concern of animal health and productivity, and at levels above 2.5 ppm feed containing DON can cause harm to cattle. Livestock may refuse to eat contaminated feed, and research conducted by Pennsylvania State University has shown that at levels as low as 0.56 ppm animal performance can be reduced.

Field Trials with Proline®

A 3 year study was conducted from 2013 to 2015 on farms in Eastern Ontario to assess the use of the fungicide Proline® on corn silage to reduce mycotoxin levels. Proline® was applied at the tasselling stage in plots with 2 replications. Silage weight and moisture were measured, and samples were tested for the presence of the following mycotoxins: aflatoxin (types B1, B2, G1 and G2), fumonisin (B1 and B2), ochratoxin A, zearalanone, T-2, HT-2, 3-acetyl-deoxynivalenol, 15-acetyl-deoxynivalenol, and DON.



Figure 1. Photo courtesy of John Nanne, Pakenham

In each year of the three years, the main mycotoxin present was DON. Other mycotoxins found at minimum levels were 3-acetyl-deoxynivalenol, 15-acetyl-deoxynivalenol, T-2, HT-2 and zearalenone. Overall, when Proline® was applied there was an average 66% reduction in DON levels and a modest 4% average increase in silage yield (Table 1). Based on corn silage valued at \$35/tonne and the cost of Proline® fungicide of \$32/ac + \$10/ac for application, a 1.2 tonnes/ac silage increase is required to break even. This does not include the value of improved animal performance from reducing the level of mycotoxins.

Note that the fungicide Caramba™ is also registered for use on field corn for suppression of *Gibberella zeae*.

Table 1. Summary of mycotoxin levels and corn silage yield in untreated and Proline®-treated plots

Harvest Year	Average DON (ppm)		Reduction of DON	Average Yield (mt/ac)*		Yield Increase with Fungicide
	Untreated	Proline		Untreated	Proline	
2013	0.5	0.1	-73%	16.6	17.0	2%
2014	0.5	0.2	-61%	20.5	20.8	1%
2015	1.4	0.5	-65%	18.9	19.8	5%
Average	0.7	0.3	-66%	18.0	18.7	4%

*Silage yield is in metric tonnes per acre adjusted to 65% moisture.

Weather Conditions and Mycotoxins

The weather, particularly the amount of rainfall during pollination and grain fill, impacts the growth of fungus and the mycotoxins they produce. Above normal rainfall in August 2015 may be the reason for the highest DON level over the 3 years, which was recorded in the untreated check. In general, rainfall was normal in 2013 and 2014, resulting in lower DON levels. Figures 1 and 2 show the Percent of Normal Rainfall for the months of July and August in 2015, respectively. The red circle indicates the area where the on-farm trial sites were located.

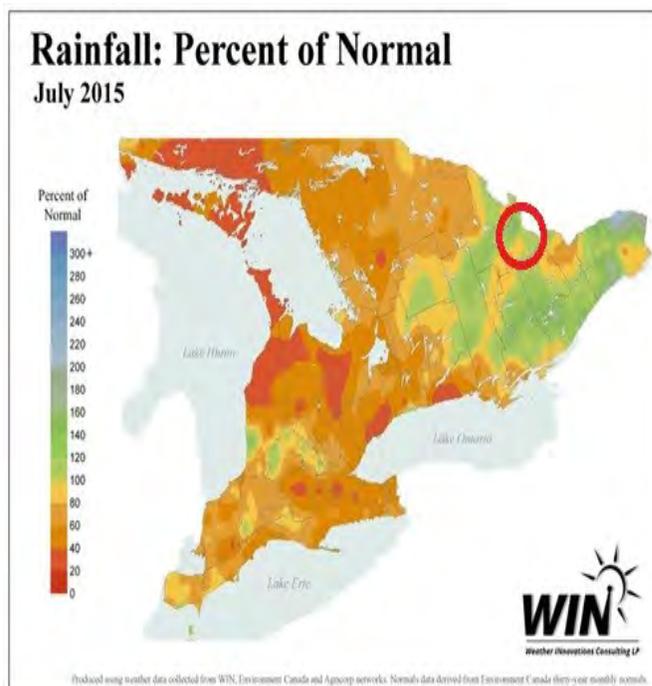


Figure 1: Rainfall Percent of Normal for July 2015

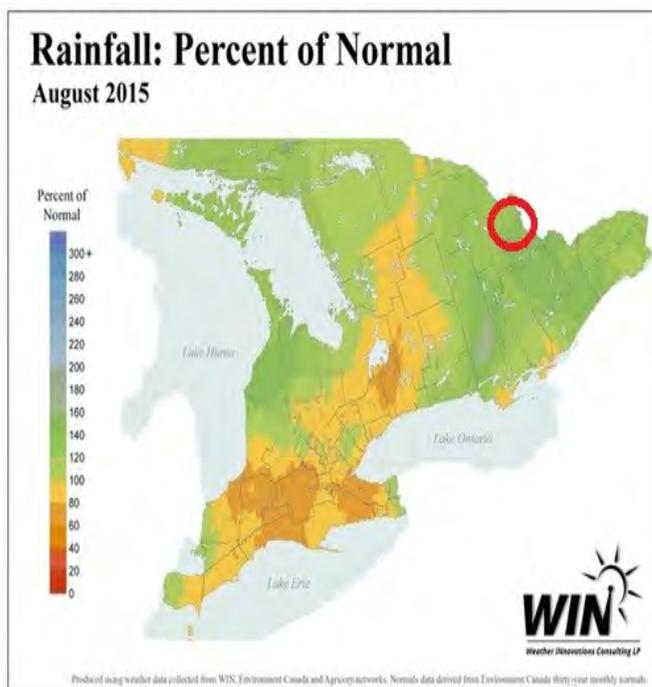


Figure 2: Rainfall Percent of Normal for August 2015

Is Recalibration Needed? Our Role in Providing Habitat and Fostering Biodiversity

Ian McDonald, OMAFRA Field Crops Applied Research Coordinator

One of the many benefits of being an OMAFRA field cropper, is travelling the roads of Ontario as I visit farmers, conduct applied research, and speak at meetings. I have always enjoyed viewing the many farm properties that dot the countryside. I have always been impressed with the efforts that people make to present their farms with pride and it is abundantly obvious that many take pride in their farms.

Over the last two summers though, I have wondered if our pride is blinding us from something. Are we inadvertently doing a dis-service to our surroundings with some of the practices we traditionally have thought of as showing our pride? I refer to the many miles of field road frontage I see mowed like a city lawn. This can be found up and down the country roads right across the province (Figure 1).



Figure 1. A typical scene of mowed roadsides along the rural roads of Ontario.

My colleague Tracey Ryan from Grand River Conservation Authority suggests that the initial notion of the “manicured lawn” comes from early settlers and their need to “push back the bush”. The ability to “tame” the land was seen as people’s ability to be successful.

From some of the things that have been happening both globally and locally, it is obvious that we should be concerned about biodiversity and the loss of habitat. This is habitat for a diverse plethora of creatures including micro-organisms, plants, insects, birds and mammals. This diverse complex of creatures need these wild areas for food, reproduction and protection, in other words “habitat”! These wild roadsides are also important corridors for travel of species that need this shelter as they forage in the environment. I think most us in rural Ontario put significant importance on habitat but maybe have lost sight about what that really means.

The importance of biodiversity to our everyday lives is not something that gets much thought. Biodiversity in the ecosystem appears to be undervalued by people despite how important it is to our lives. Tracey points out that “biodiversity is of vital importance because it underpins the functioning of the ecosystem which we depend on for food, water, health and recreation”. Biodiversity’s important biological functions include:

- regulating the chemistry of the atmosphere and water supply;
- recycling nutrients crucial to the maintenance of the earth’s soil fertility;
- providing ecological services such as the mass pollination of the world’s food crops; and supplying genetic variants for crop development and the creation of new medicines; and
- supplying genetic variants for crop development and the creation of new medicines.

When you consider the increasing size of farm fields accompanied by fence line removal, and the increasing acreage of corn, soybeans and hopefully winter wheat or spring cereals, maybe even with red clover or other cover crops, and the loss of forage and pasture in recent years, our fields are still becoming less diverse (<http://bitly.com/OMAFRAFarmStats> or <http://bit.ly/1LN44sT>). Do we need to rethink how we contribute to biodiversity by allowing “wild spaces” in as much of the remaining uncropped and forested areas of the province as possible to give these creatures the habitat they need to flourish? Although we don’t think about or often see many of these creatures, they are there and they are important in the overall ecology of our environment.

By mowing these public areas along roads are we removing habitat without thinking about the consequences? Is our view of what “looks good” becoming out of tune with the realities of our environment?

As well, when you consider the amount of fuel, exhaust, GHG’s etc that are put into the environment in our zest to make things “look good”, is it something that we have to rethink?

In recent travels across Ontario and the Maritimes I was thinking about these “wild spaces”, and observed the following examples of how these areas can be magnificent as habitat and a visual pleasure.



Figure 2. Lupins and other Species in PEI roadsides, July 2014



Figure 3. Wild natural roadsides in rural Ontario, July 2015



Figure 4. Wild natural roadsides in rural Ontario, July 2015



Figure 5. Lupins and other Species in PEI roadsides, July 2014

We in agriculture often consider ourselves the “first environmentalists”, as we play an important role in managing the ecology of the province, especially in southern Ontario. I would suggest that with little effort, we can provide significantly more contribution by thinking about and managing roadsides more ecologically to all of our collective benefit. The literature is full of interesting information on this subject and I draw your attention to a couple of good sources:

<http://bitly.com/RoadSides1>

<http://bitly.com/RoadSides2>

<http://bitly.com/RoadSides3>

The Facts on Swede Midge in Canola

Tracey Baute, OMAFRA Field Crop Entomologist

Meghan Moran, OMAFRA Canola and Edible Bean Specialist

Swede midge, *Contarinia nasturtii*, first appeared in Ontario on canola in 2003. Yield impact on canola has been variable and is strongly dependent on midge population levels, timing of infestation relative to plant stage and timing of insecticide application. Extreme swede midge populations in Northeastern Ontario have been a significant challenge for canola producers, and in 2014 resulted in recommendations to avoid growing canola for 3 years in the New Liskeard area in an attempt to suppress swede midge population.

This pest requires intensive monitoring and management to protect the crop from injury. An infosheet on swede midge has recently been posted online at <http://fieldcropnews.com/2016/05/swede-midge-in-canola-infosheet/>. Refer to this infosheet for more information on the swede midge life cycle, how to use swede midge pheromone traps, and cultural practices that can contribute to mitigation of swede midge damage.

Life Cycle

There are four to five overlapping generations per year in Ontario starting in mid-May until October. First adult emergence is in mid- to late May, though not all swede midge emerge at the same time. There are two initial cohorts with peak emergence approximately 10-14 days apart in late May to early June. Rainfall totaling 6mm or more over a 7 day period triggers emergence. Adults are considered to be relatively weak fliers, but they are capable of moving several hundred meters and can be carried much further by wind. Females lay eggs in clusters of 20-50 eggs on the youngest, most actively growing tissue of the plant where larvae feed for 1 to 3 weeks, depending on temperature. Once mature, the larvae drop to the top few centimeters of soil to pupate for two weeks until emerging as an adult. Some larvae from each of the 4-5 generations will enter the soil and overwinter, and some midges (2-10%) remain in the soil in diapause for two years, possibly more.



Figure 1. Swede midge life cycle.—Photo credits: Adult - D.K.B Cheung; Eggs, Larvae and Pupae - L. Des Marteaux

Risk Factors and Damage

Canola grown in areas with a history of swede midge or in close proximity to last year's canola, cauliflower or broccoli fields are at risk. Swede midge is also hosted by cruciferous weeds and cover crops such as mustards, stinkweed, shepherd's purse, radish species and volunteer canola so proximity to these plants is a concern. Fields planted in late May to mid-June are most at risk because they will be in the younger, vulnerable stages during peak swede midge activity. Early planted fields that bolt quickly will typically not experience as much damage.

Enzymes in the saliva of the larvae break down plant tissue, resulting in swollen and distorted leaves, shoots and flower buds. On young plants, the main growing point of the plant may die, preventing bolting and producing blind heads. Secondary racemes may develop from the destroyed primary shoots which prolongs days to maturity. If the canola plant is beyond the bolting stage (GS 30-39 or 2.1-2.10) before the midge infests the plant, the impact is usually not as extreme, but any developing bud tissue in the leaf axils will be susceptible to infestation.

Scouting and Managing Swede Midge

If damage is found on canola plants, it may be too late for adequate control of swede midge. Larvae are also very small and difficult to see, so monitoring of the crop must be done through trapping of adults. Begin trapping in early May, as soon as seedlings have emerged in order to determine when first adult emergence or arrival has occurred and when thresholds are reached. Start monitoring traps when plants have one true leaf and continue until the crop is in full bloom. As swede midge

numbers can increase to threshold levels quickly, it is important to check traps regularly (every 2 days) to determine the number of adults captured per trap per day. Traps can be purchased from www.solida.ca.

When a total of 20 adults have been captured from the start of trapping, threshold has been reached and the first insecticide application is required. Subsequent insecticide treatments may be necessary if an average of 5 adults per trap per day are caught and the canola is still in pre-flowering stages. Insecticides should be applied as soon as thresholds are reached.

Matador/Silencer (ai: lambda-cyhalothrin) and Coragen (ai: chlorantraniliprole) are registered for swede midge on canola. Matador and Silencer are pyrethroids and should not be sprayed during the heat of the day; efficacy decreases as temperature increases. If using Coragen, a surfactant must also be used. Do not use Coragen within 60 days of planting with either Lumiderm or Fortenza (also from Group 28 diamides) seed treatments that season. Check the product labels for further information and precautions.

Thorough coverage is important for optimum control. High water volumes (greater than 200 litres/ha) and smaller droplet sizes ensure good coverage and penetration of crevices where swede midge larvae are feeding. Multiple treatments are likely necessary, with a minimum interval of seven days between treatments.



Figure 2. Swede midge damage in canola at various crop stages; (a) GS 50 or 3.1; (b) GS 50 or 3.2; (c) GS 51 or 3.3

Slurry Seeding Cover Crops Following Wheat Harvest

Christine Brown, Nutrient Management Lead, OMAFRA

Regular manure applications combined with forage-based rotations are the envy of crop producers when soil organic matter (SOM) levels and soil resilience are considered. Cover crops planted with an application of manure after wheat harvest may be the next best option.

Manure application during the growing season is preferred for several reasons:

- Nutrients from manure can be utilized by growing crops
- Risk of compaction is reduced and the addition of cover crops can further reduce existing compaction and help increase water infiltration
- Risk of phosphorus loss from manure is lower during the growing season. Phosphorus loss from soils during the non-growing season represents about 80% of the annual loss.
- Soil micro-organisms respond to the nutrients from manure, especially when applied with growing crops, and often result in increased biomass production. A variety of cover crop species will add diversity while soil micro-organisms will enhance root systems.

There are a variety of methods for seeding cover crops before or after manure application. Conventional methods have manure applied followed with a tillage pass to incorporate manure and the broadcast cover crops. In recent years, slurry seeding has become popular and is being done by mixing cover crop seed with manure in the tanker; adding a seeder to the tanker (*pictured below*) that can place cover crop seed into the injection strip and/or other innovative equipment designs. One pass application, improved seed placement and reduced compaction risk are all benefits. The interaction of manure nutrients with cover crop growth and the benefits to the soil microbial populations and increased biomass production can be significant.



Figure 1. Cover crops applied in the same pass as the manure application saves a trip over the field and can improve placement. This design can also seed cover crops into standing corn with a side-dress

A side-by-side study done in 2015 after wheat harvest compared several different cover crop species mixes with and without manure (in this case digestate, which is similar in composition to liquid hog manure). A multi-species mix with 10 different cover crop species was compared to a mix with 3 species. The results are shown in the image below and in Table 2, *Approximate Biomass Yield of Three Cover Crop Mixes with and without Organic Amendment*. The areas that had the digestate applied were easy to distinguish. Biomass yield (average dry matter yield measured from three 1m² sections per treatment) shows the impact from the organic amendment and approximate difference from the various species.



Figure 2. Synergistic effect of manure on cover crop growth. Nutrients from manure increase microbial activity that increases cover crop top

In each treatment, the cover crop with added organic amendment had a higher biomass yield, however the multi-species mix with 10 species did not yield as much biomass relative to the 3-species mix or oats alone. Observations at harvest would suggest that where the digestate was applied, there was more growth of nitro radish. The radish have a lot of top growth and large root, but dominates over the other species so that there are very few other cover crop species growing near the radish. Multi-species mixes seems to give a bigger benefit where an organic amendment is not applied, while species that include mainly cereals (oats, barley, cereal rye, etc) and a smaller amount of radish and/or legume will give higher biomass yield where manure is applied.

Table 1—Approximate Biomass Yield of Three Cover Crop Mixes with and without Organic Amendment

Cover Crop	With Manure	Without Manure	Increase from manure
	Approximate Yield (ton/ac)*		
Oats	3.6	2.8	33 %
Multi-Species Mix: Planted at 40 lbs/ac 33% Oats, 4% Nitro radish, 2% Brassica, 2% Sorghum Sudangrass, 1% Phacelia, 2% Sunflowers, 4% Sun hemp, 5% Turnips, 25% Crimson Clover, 23% Austrian Peas	2.10	1.75	17 %
3 Species Mix: Planted at 30 lbs/ac 14% Nitro Radish, 16% Crimson Clover, 70% Oats	2.85	1.83	36 %

* biomass yield that includes top-growth and comparative root mass

The above data represents one site –one year

3,500 gal/ac digestate was applied in mid-August. The nutrient composition of digestate is similar to hog manure.

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OSCIA PROVINCIAL NEWSLETTER

Message from the President - Gord Green



Hi Everyone,

I trust that spring planting has gone well for most of you. For the most part planting was relatively free of rain here so crops went in quickly. I think most of us could use a good rain. Haying is just starting so that should bring it on.

Your Provincial Board of Directors have been busy in March working

on activities related to the approved Strategic Plan that was started last spring. This was followed up by board governance training that all directors should go through periodically. We have identified some areas that could use improvement such as communications both internally and externally. We in Soil and Crop are guilty of not sharing enough of what we do with others either through word of mouth or through the media. We have a lot of activities going on both locally and regionally and we should do more to talk this up.

This past April the Farmland Health Incentive Program was opened up to everyone in the GLASI area. The response was amazing with the money allocated very quickly. I think this shows how environmentally responsible we farmers are when there is a problem that needs addressing and a means to address it. The Species at Risk Farm Incentive Program is now open for another year. This is a program that supports a broad range of projects that encourage wildlife while protecting the environment. Some examples are livestock fencing to keep livestock out of sensitive areas, tree planting, control of invasive species, erosion control and wetland restoration. Check our website for more information on this or any of the programs we deliver.

Earlier this spring, I was involved in an OMAFRA announcement concerning Soil Mapping. The Ministry has directed \$5.1 million from *Growing Forward 2* to Soil Mapping with a commitment to seek further funding to keep this initiative going. Some of the current soil maps are 40 or 50 years old or older. It is a well known fact that some of the maps are not as accurate as they should be. Soil maps are used to direct a lot of decisions such as land use so we at Soil and Crop are excited about this announcement.

Local counties/districts are busy planning summer events such as bus trips, field days and information meetings.

Make sure to attend some of these events. It is a great way to meet people and learn some stuff as well. Enjoy the summer and good luck with the cropping.

Yours in Agriculture,


Gord Green, OSCIA President

Special Notice - RCC Update

Recently, two of our RCCs moved onto other adventures. We would like to take this opportunity to thank Jeff Burke (NWOSCIA) and Shirley Munro (ORRSCIA) for their many years of service to OSCIA. Good luck to you both with your many adventures!

We would also like to welcome Miranda Bolt (NWOSCIA) and Barb Keith-Badour (ORRSCIA) to the RCC team.

A NEWSLETTER TO UPDATE
REGIONAL AND LOCAL ASSOCIATIONS
AND OMAFRA CONTACTS

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- SARFIP Update
- Grassland Stewardship Program Update
- OSCIA GF2 - Tim Noxon, Vicki's Veggies - Record Keeping System
- OSGA Field Day Notice
- Biomass Demo Tour

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

Website: www.ontariosoilcrop.org



US Agriculture's Response to Lake Erie Algal Blooms - 2016 OSCIA Annual Meeting



- Dr. Tim Harrigan, Biosystems and Agricultural Engineering – Michigan State University

Dr. Harrigan's Research and Extension programs focus on mitigating adverse farming systems impacts on the environment and creating sustainable agro-ecosystems. His research includes the development of an innovative process that combines low-disturbance tillage, the seeding of forage and cover crops, and manure land application in one sustainable operation.

We've all heard the ongoing discussions about Lake Erie algal blooms and what Canadian farmers can do to help reduce them. Have you ever wondered what US farmers are doing to combat the problem? Dr. Tim Harrigan of Michigan State University spoke at the OSCIA Annual Meeting this past February and shared some insight into this.

On a watershed basis, current estimates are that Michigan, Indiana and Ohio farmers in the Lake Erie watershed are losing about 1.5 pounds per acre of phosphorus per year. The goal for Lake Erie is to reduce losses by about 40 percent to less than one pound per acre in the western basin. It should be noted that even small losses can have big effects, especially in large watersheds surrounded by acres and acres of nutrient rich cropland. Research studies have proven that there is a steady, long-term record of total phosphorus loading to Lake Erie.

So, what are US farmers being asked to do to help improve water quality? Because there are so many potential contributing sources of phosphorus, and losses are so greatly influenced by timing and intensity of rainfall, there really is no single change in production practice that will be most effective every year. Individual states are handling the problem in different ways. For example, in Michigan, there is a need for continued water quality monitoring, research and education. Farmers are being asked to participate in mainly voluntary educational programs such as the **Michigan Agriculture Environmental Assurance Program (MAEAP)** which is an innovative, proactive program that helps farms of all sizes and all commodities voluntarily prevent or minimize agricultural pollution risks.

In Ohio, which has been reported to have the largest total phosphorus concentration, state officials have taken the legislative approach including a ban on the spreading of manure on frozen or saturated land as well as enforcing regulated certification. In 2014, the **4R Nutrient Stewardship Certification** program was launched for agricultural retailers and stakeholders from Ohio, Indiana and Michigan agricultural communities that is geared towards the long-term improvement of Lake Erie's water quality by applying the 4R principles (using the Right Nutrient Source at the Right Rate and Right Time in the Right Place) which is administered by the Ohio Agribusiness Association on behalf of the Nutrient Stewardship Council.

Since the mid-1990s, there has been a proven increase in algal biomass along with total phosphorus concentration in the western and central basins of Lake Erie. What has caused this change? On the land, there has been an increase in broadcast fertilizers, more tile drainage, and soil P stratification from long-term no-till or reduced tillage. In the water, things like climate change, invasive species such as zebra mussels, lawn fertilizers and combined sewer overflows are linked to the change.

Today's society expects clean water and there will be ongoing and increased monitoring of water quality. In point of fact, farmers do have a direct impact on water quality and whether we like it or not, this is how society will judge agriculture. We must always keep in mind that there is a direct link between our fields and all other users downstream. Positive changes are taking place in this area but we still need to do a better job of managing our water which includes having tighter control of nutrients. Precision crop technology will play an important role in this management of nutrients. We know that most runoff occurs during the non-growing season (November to April), so we will also need to focus on implementing best management practices in order to reduce runoff during this critical time period.

Krista Gladstone, St. Clair Regional Communication Coordinator



SYLVITE TO SPONSOR FREE BREAKFAST AT CANADA'S OUTDOOR FARM SHOW



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

Proof of OSCIA membership required
<http://www.ontariosoilcrop.org>

Members Updates 

OSCIA and select Industry information
<http://www.ontariosoilcrop.org/news/>

Soil Analysis Discount

5 labs now participating (Welcome **Actlabs**)
 - visit OSCIA website for more details:
<http://www.ontariosoilcrop.org/association/association-membership/>

OSCIA Tier One Grants Proving Value

We anticipated lots of interest from the local and regional associations in the new \$1,500 Tier One grant that was first introduced in 2015. OMAFRA and OSCIA were pleased to commit the investment towards a wide array of education and communication events that took place across the province. We can now look at the final reporting to realize just how successful the initiative was in terms of the dollars and time invested through the membership and many supporters of the organization.

The Ministry's willingness to make their portion of the grant dollars available with no strict requirement for matching funds from other sources, is to be applauded. We were convinced based on the track record established over the years with similar projects, there would be substantive dollars leveraged from project partners to fully justify the decision. You did not disappoint! Data gleaned from the final reports submitted for each of the 37 projects claimed paints a very encouraging picture about partnerships and a willingness to engage in grassroots events and activities.

Six of the grants supported applied research with one-year field trials. Those reports are included in Crop Advances. The other grants supported events best categorized as educational tours, guest speakers, topical workshops or broader information meetings. Applying the participation figures that were reported for typical events suggests over 4,000 producers received direct benefit from the combined efforts.

The final tally indicates \$43,340 was paid through the Tier One grant. Records submitted by the participants verify this investment triggered additional contributions of \$57,530 towards many of the same projects, for a reported total project value of \$100,870. On top of that were in-kind contributions worth an estimated \$35,000. This is outstanding performance and sets high expectations for the 2016-17 grant year.

Members measure success through what they experience and learn from the many events and applied research projects. The numbers we collect from the project reports provide clear assurances to OMAFRA that their investment in the Tier One grant structure is paying off.

Tier One applications are now being accepted in the Guelph office. Once again up to \$50,000 has been committed in total from OMAFRA and OSCIA, available on a first-come, first-served basis. If a local or regional association has a project idea, we urge you to complete the application available on the web site and get it submitted for pre-approval. This will lock up the funding so you know its there when you make a final claim.

Funding for these grants is provided through a three year agreement with OMAFRA.

Andrew Graham, OSCIA Executive Director



SARFIP Update

OSCIA launched the 9th season of the Species At Risk Farm Incentive Program (SARFIP) cost-share on May 16, 2016. The program offers cost-share to farms implementing habitat protection, enhancement and restoration projects (based on BMPs) that will indirectly or directly benefit species at risk (SAR) in Ontario.

OSCIA has received an encouraging number of applications since the launch and hopes to fully allocate all funds by the fall. Eligible projects started on or after April 1, 2016 could receive cost-share of 50% for providing indirect benefits for SAR, or 65% if the project provides direct benefits (i.e. SAR living on/near property).

Anyone interested in applying should review the SARFIP 2016 brochure which can be downloaded from the SARFIP webpage on the OSCIA website. Application Forms and "steps to apply" can also be viewed on the website. Stay connected with SARFIP updates throughout the season by joining the email list (through OSCIA website) and following OSCIA on Twitter at @OntarioSoilCrop.

Hayley Paquette, OSCIA Programs Assistant

CROP ADVANCES



Applied Research on Soil and Crop Management - available on OSCIA website:

<http://www.ontariosoilcrop.org/research-resources/crop-advances/>

Grassland Stewardship Program Update

Watch for the Grassland Stewardship Program, to be launched this summer. The Grassland Stewardship Program provides funding to producers who wish to complete on-farm grassland habitat (hayfield and pasture) improvement projects.

Funded practices will include:

- Pasture reseeding
- Control of encroaching trees and shrubs on pasture through mowing
- Rotational grazing systems
- Invasive plant species control
- Marginal land retirement to grasslands
- Forage harvest management (delayed haying)

Visit the OSCIA website to check for program updates, or to sign up for our mailing list: www.ontariosoilcrop.org/oscia-programs/sarpal

The Grassland Stewardship Program is funded by Environment and Climate Change Canada through Species at Risk Partnerships on Agricultural Lands (SARPAL) initiative.

Laura Van Vliet, OSCIA Programs Assistant



OSCIA GF2 - Tim Noxon, Vicki's Veggies - Record Keeping System

A new record-keeping system has helped an Ontario vegetable farm enhance and expand its business.



Cost-share support from *Growing Forward 2 (GF2)* helped Tim Noxon and Vicki Emlaw of Vicki's Veggies in Prince Edward County develop a customized database system for their fresh and value-added vegetable business.

Growing from about an acre of crops 15 years ago to producing around 30 different crops on 20 acres has meant a lot of changes for the organic farm, which is particularly known for growing more than 150 varieties of heirloom tomatoes.

Including Tim and Vicki, the business employs the equivalent of eight full time staff year round with about a quarter of sales coming from a roadside stand on the farm, another quarter from a Saturday market in Toronto, and the remainder from sales to restaurants and specialty shops through a Toronto distributor.

“The need for the record-keeping system came as a result of not knowing what crops we were making or losing money on. We knew some were doing better than others but had no clue how that broke down,” explains Tim. “We also wanted to do a better job of tracking employee hours so we could tell how much time we were spending on which tasks on the farm.”

Their solution was a database program that allows for easy data entry and gives Tim and Vicki records by the crop, employee, and field. Employees can input data on an iPad as they finish tasks and the information syncs up with a desktop computer on the Vicki's Veggies local area network. The system can also track information related to payroll, cropping data, and organic inspections. At the end of the year, a large spreadsheet details all the farm activities, which they then use to start their analysis.

“With the data we can evaluate how productive each crop is and help us determine its profitability,” says Tim. “We knew we were losing money on some crops, but this gives us the ability to see the exact breakdown.”

With their newfound knowledge, Tim and Vicki dropped a few of their most unprofitable crops and reduced production in others. Recognizing that part of their business thrives on the variety of crops they can offer, they didn't want to streamline their offering too much, so they also made changes to some of their practices to be more efficient.

The biggest surprise, admits Tim, is seeing the impact value-added products have on the business' bottom line. They started small scale with frozen soups and hot sauces throughout the growing season to use up produce that

**ATTENTION SEED GROWERS
OSGA Field Day - JUNE 28, 2016**

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**Location: Szentimrey Farms**  
508 St. George Rd., R.R. #1, Branchton, ON N0B 1L0  
~~~~~

Register:
<http://www.ontariosoilcrop.org/osga-field-day/>

couldn't be sold on the fresh market, and have been expanding that to include condiments and pickles as well. “On a crop of fresh hot peppers we weren't making money because the competition is too strong, but by turning them into hot sauces, we've extended our season for hot peppers from one month into a whole year,” he says. “We've also stretched out the cash flow from that crop over the whole year.”

Growing their value-added business also means they're now able to offer year round employment to some of their workers; that's a welcome bonus as hiring and training staff is costly and time-consuming, particularly in a seasonal business.

“The *Growing Forward 2* funding has made a huge difference to us. It offers a big incentive, knowing that we're not on our own, that there is some help out there, and that everyone is sharing in the cost of growing their food,” he adds. The project was funded under the production efficiencies category of *GF2*, under the Business and Leadership Development focus area.

Growing Forward 2 is a federal-provincial-territorial initiative. The Ontario Soil and Crop Improvement Association delivers educational workshops and funding assistance supported by *GF2* to farmers. More information about *GF2* funding opportunities for farmers is available at: <http://www.ontariosoilcrop.org/oscia-programs/growing-forward-2/> or by contacting the OSCIA regional program leads at: <http://www.ontariosoilcrop.org/association/contact-us/oscia-field-staff/>

By Lilian Schaer, for OSCIA



**BIOMASS COMBUSTION FOR
GREENHOUSE HEATING DEMO**

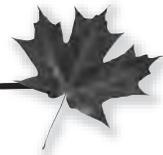
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**June 21, 2016 - 9:30am-1:00pm**  
**Forman Farms**

4040 Brewer's Mill Rd., Seeley's Bay, ON K0H 2N0  
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Itinerary: [Biomass Demonstration Agenda](#)
Register at: <http://www.ontariosoilcrop.org/biomass-demonstration/>

- Tour biomass heating project - 2 hydroponic heaters for Greenhouse vegetable production; Presentation on equipment and results





Growing Forward 2

A federal-provincial-territorial initiative

Canada-Ontario Environmental Farm Plan (EFP)

Producers are invited to attend FREE EFP (Fourth Edition) Workshops to:
Learn about best management practices
Develop an action plan for their farm
Learn about cost-share funding opportunities

Growing Your Farm Profits Planning for Business Success

Start the business planning process by attending this FREE two-day interactive workshop.
You will: • Assess business management practices
• Determine priorities and key goals
• Develop realistic action plans
• Learn about cost-share funding opportunities

Biosecurity Workshop

At this one-day workshop, an experienced veterinarian or certified crop advisor will show you the benefits of having an on-farm biosecurity program, and identify key practices which will enhance biosecurity measures on your farm.

Maximizing Your Traceability Investment Workshop

This in-class workshop will focus on how you can gain a competitive advantage and improve your bottom line with your traceability system. Real life examples and business profiles focused on traceability best practices will be examined throughout the workshop.

Food Safety Workshops/Webinars

Looking to keep up to date on the latest food safety practices and help strengthen your Growing Forward 2 application? The Food Safety Workshop is a two-day in-class workshop to help you formalize your food safety program, or you can take advantage of a series of six, 1.5 hour webinars which cover the same topics (see schedule online).

Workshops and Webinars in your area

EFP Workshop Schedule

Alliston	Day 1 - July 7	Day 2 - July 14
Mount Forest	Day 1 - July 8	Day 2 - July 15
Mitchell	Day 1 - July 12	Day 2 - July 19
Elmwood	Day 1 - July 28	Day 2 - August 4
Linwood	Day 1 - August 10	Day 2 - August 17
Midhurst	Day 1 - August 12	Day 2 - August 19
Clinton	Day 1 - August 27	Day 2 - TBA
Markdale	Day 1 - September 1	Day 2 - September 8
Mount Forest	Day 1 - September 9	Day 2 - September 16
Orangeville	Day 1 - September 14	Day 2 - September 21
Listowel	Day 1 - September 20	Day 2 - September 27

GYFP Workshop Schedule

Harriston	Day 1 - July 6	Day 2 - July 13
North Bruce	Day 1 - July 18	Day 2 - July 25
Elmvale	Day 1 - July 27	Day 2 - August 3
Markdale	Day 1 - August 8	Day 2 - August 15
Listowel	Day 1 - August 9	Day 2 - August 16
Wingham	Day 1 - August 11	Day 2 - August 18
St. Mary's	Day 1 - August 31	Day 2 - September 7
Alliston	Day 1 - September 12	Day 2 - September 19
Elora	Day 1 - September 23	Day 2 - October 4

Biosecurity

Poultry	Clinton	June 14
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Traceability

Clinton	Day 1 - June 9	Day 2 - June 16
St. Mary's	Day 1 - August 11	Day 2 - August 18

Food Safety

Webinars at 7 pm, July 27, August 10, August 24, September 7, & September 21.

Register Online at www.ontariosoilcrop.org



Grassroots Innovation
Since 1939





Aylmer, ON: Howe Family Farms won a Premier's Award for Agri-Food Innovation Excellence in 2013 for this system of planting directly into rye behind a roller crimper.

A BIG THANK YOU TO OUR SPONSORS!

