

Summer 2017
Volume 17, Issue 2

QUINTE

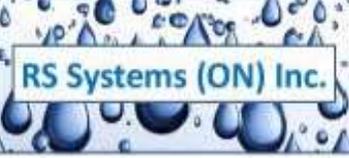
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A quarterly newsletter representing one of 11 Regional newsletters produced 4 times a year in conjunction with the Provincial Newsletter and OMAFRA Crop Talk.

If you are interested in receiving this newsletter directly or want to change your address, please contact Amy Petherick.

Comments, ideas and sponsorship, welcome. For membership rates, contact your local association:

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Nice to Meet You!

They say good news travels fast and I'd like to think an inbox full of "welcome to the team" emails, less than 24 hours after I'd accepted this position, attests to that.

Thank you to everyone who has called, emailed, or come to see me in person to congratulate me on my new role within this organization. Many of you already know me from my horticultural and field crop scouting years, or while working in municipalities across Eastern Ontario to create a retention and expansion plan for agricultural businesses. Since we last met, I've taken my place as my family's third generation to serve Soil & Crop on our board of directors here in Northumberland. After I started writing a little for head office last year, I guess escalating my local involvement to this level was really only a matter of time.

To those of you who haven't met me yet, I farm with my husband and his parents at Almeron Farms Ltd in Campbellford. We milk roughly 70 head, mostly Holsteins, in a tie-stall. I'm also running Feathered Ink Ag Communications & Consulting, and have written pretty regularly for Grain Farmers of Ontario, Top Crop Manager, and Country Guide in the last five years. During the growing season, when farm magazines slow down, my Dad and I run a Dow Seeds dealership together.

So now that we've been properly introduced, it's your turn! I'm looking forward to getting to know you all, and if you don't know where to start... just drop me a quick note at amy.petherick@gmail.com to tell me what you think of this newsletter!

Amy



Ontario *Forage Masters* Competition

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COMING EVENTS...

updates & local weather @ www.qscia.ca

AUG 22

Northumberland SCIA

Annual Summer BBQ

Roseneath Fairgrounds

Tickets available from directors
Dinner starts at 6 PM

Everyone welcome

19 JUL

Winchester Research Station

Eastern Ontario Crop Diagnostic Day

6 JUL Ontario Forage Expo 2017
"Hay Making in Motion"

Ottawa/Carleton County
Bruce, Cheryl and Spencer Hill
Nepean, ON

AUG 23-24

Hastings County

Plowing Match

Hosted by
Jim and Janet Sandercock & Family

612 Johnstown Road
Trenton, ON

13 JUL

FarmSmart Expo

Agronomic and Diagnostic Day

Elora Research Station

Crop Tours & Bus Trips

Plans are in the works for some local trips and tours in each part of our region.

Dates will depend on the weather, so be sure to check online for regular updates

SEPT

Quinte SCIA

12

Annual Meeting

TCO Agromart

Fresh Ideas & New Directors Wanted



**SOIL CONSERVATION
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**CONSEIL CANADIEN DE
CONSERVATION DES SOLS**

SUMMIT ON CANADIAN SOIL HEALTH

August 22-23, 2017 – Delta Hotel, Guelph, Ontario

Summit-17 will have implications for all Canadians. Soil health and conservation are critical to managing issues that impact all of us – our food supply, carbon sequestration, water quality and biodiversity.

The **first purpose** of this Summit is to establish the cost for soil degradation where we can, and to set a costing agenda where we presently have too little information. Those costs are particularly important to justify and implement policy that will contribute to soil care and protection.

While cropland soil degradation has cost consequences for food production and the economy, it also brings costs for water quality and quantity, for lost soil carbon to the atmosphere and for natural heritage lands that are impacted. These costs accrue and affect everyone beginning with farmland owners and operators.

The **second purpose** of Summit 2017 is to identify the means to overcome degradation and improve soil so food production can be reliable and sustainable. Where there are technology gaps that inhibit progress on this front, those gaps need to be identified and prioritized for research.

Soil Health Research Tour

The Tuesday Tour Day highlights the latest information from researchers, extension personnel and farmers as they demonstrate what they are doing to improve soil health and reduce carbon and nutrient loss from agricultural systems.

Evening Program

The Summit program Tuesday evening includes special guests, the SCCC awards program, announcements and a pacesetter keynote speaker followed by a networking reception.

World-Class Scientists

The roster of speakers and participants assembled for Summit 2017 include world-class scientists. Some have experience with the Food and Agriculture Organization (FAO) of the United Nations, the United Nations – University Institute for Water, Environment and Health, the World Bank and the Canadian International Development Agency. All have distinguished careers in soil and related sciences, and are supported by some of our best in academia, extension and the agriculture industry.

Leading-Edge Farmers

Relevance to real issues and solutions will be ensured through participation by a farmer panel from across Canada. They represent grain farmers, ecological farmers, grassland farmers, vegetable farmers and farmers who share their space with nature.

Challenge and Wrap-Up

The Summit challenge speaker will bring focus to who is responsible and why we must not fail as custodians of foodland soil.

All speakers at this Summit are committed to raising the bar on soil care.

VISIT SOILCC.CA FOR MORE INFORMATION AND TO REGISTER



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Hey Canada!

It's time to *#SoilYourUndies...*
in the name of soil conservation

Do your own fun soil science experiment to see how healthy your soil is and share your experiences @SoilCouncil.

Anyone can investigate biological activity in farm fields or backyard gardens. Bury a pair of 100 per cent white cotton underwear in topsoil for about two months and then check the level of decomposition. If there's not much left of the underwear you have good biological activity, which indicates healthy soil. These same soil organisms can break down plant materials in much the same way.

To make a good on-farm comparison:

- Test similar soil types under different rotations and tillage management
- Keep track of each pair by writing an identifying number on the waistband
- Be sure to bury all underwear being compared on the same day and for the same amount of time



WHAT YOU'LL NEED

- New pair of white 100% cotton briefs (no dyes or polyester blends)
 - Shovel
 - Marker flag
- 1) Dig a narrow trench and bury the underwear in the top six inches of soil
 - 2) Leave the waistband showing a little and mark the place with a flag so you'll be able to find it again
 - 3) Leave the underwear buried for about two months
 - 4) Dig it up carefully and wash it in a bucket of water to remove the soil

STANFIELD'S

Proud SCCC supporter of #SoilYourUndies

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Soil Your Undies was initiated by the Innovative Farmers Association of Ontario. SCCC gives this project a national perspective.

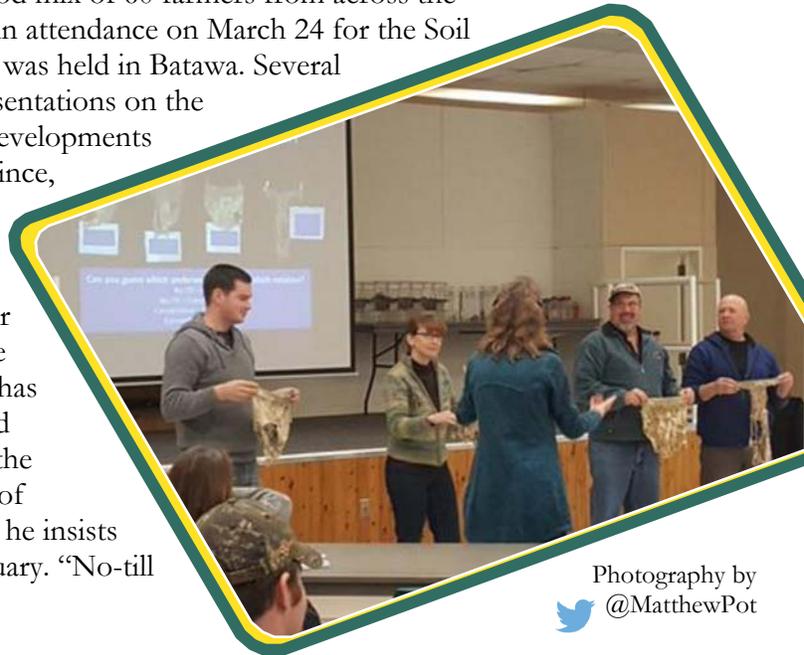
March 24th

soil health

Workshop Recap

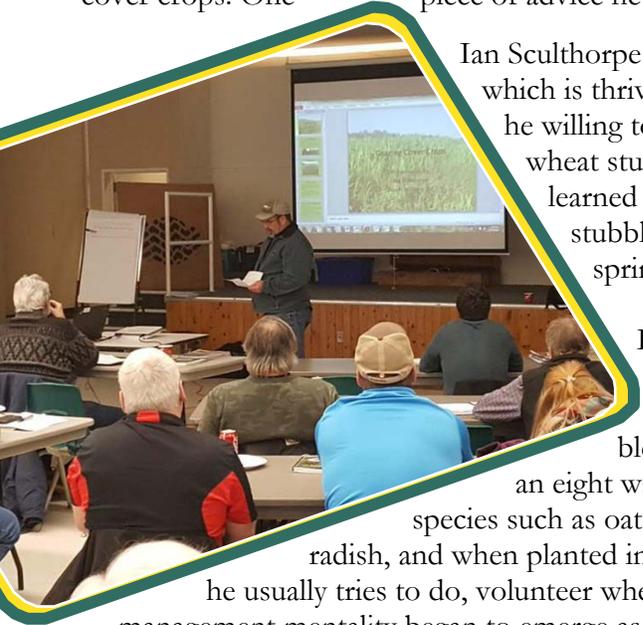
It was a good mix of 60 farmers from across the Quinte Region in attendance on March 24 for the Soil Health Workshop that was held in Batawa. Several field crop experts offered presentations on the latest studies of soil microbes, new developments in soil testing and mapping around the province, and how the ability to monitor compaction like never before will continue to change the way we farm.

But in addition to the experts on hand from OMAFRA, four local members shared their own tips for working to improve soil health. Eric Kaiser of Napanee explained how his farm has been using cover crops since 2003, applying seed with an old fertilizer spreader in early August to see it fully emerged by the middle of the month and then spraying it off by the middle of October. To ensure a smooth planting the following spring, he insists it's necessary to completely overhaul the planter every February. "No-till is a mindset," he advised the crowd.



Photography by @MatthewPot

Following the veteran was Kelly Sharpe of Brighton. He quickly spoke about how his farm has more recently turned away from tillage. "Looking back, what I was doing was 'recreational' tillage," he joked with the crowd. Now he finds himself experimenting with red clover and planting soybeans into green cover crops. One piece of advice he offered was plotting soil test data on a per field basis to



Ian Sculthorpe of Port Hope followed by describing his 90 head cow/calf operation, which is thriving on mob grazing thanks to cover crop experimenting. Not only was he willing to share his successes, such as strip grazing oats that were planted into wheat stubble in five acre sections through the fall, but also mistakes he has learned from, such as letting cattle overgraze rye that was planted into wheat stubble back in 2012. He is looking forward to baling rye on a trial basis this spring and following it with some hairy vetch.

Last to speak was Mark Burnham of Cobourg who shared some of his cover cropping practices before the workshop wrapped up for the day. The cover crop blend used in his case is an eight way mix which includes species such as oats, rye, red clover, radish, and when planted into wheat stubble as he usually tries to do, volunteer wheat. A zone management mentality began to emerge as Mark spoke, as he described how crop rotations varied depending on the land (notably, poor land only sees corn and soybeans). In the last two years, that corn ground received annual rye grass as a cover crop but due to seasonal conditions, it didn't catch on 100 acres in 2016. This year, Mark is looking to experiment with variable rate application on his farm.



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CROP TALK

Volume 17, Issue 2

OMAFRA Field Crop Specialists — Your Crop Info Source

June, 2017

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Current field crop information as it happens!

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Compiled by: Ann Payne

Could 2017 be the Year of the Armyworm?

Tracey Baute, Field Crop Entomologist OMAFRA

Two factors increase risk of true armyworm infestations each year. The first is cool, wet April conditions which are detrimental to the natural enemies of armyworm. The second is strong storm fronts that carry in large numbers of moths from the southern US where they overwinter. Traps this spring in Ontario and neighbouring states have captured more armyworm adults than normal and a week or two earlier than previous years. This indicates that 2017 could see a large invasion of armyworm in corn, cereals and mixed forages.

Moths prefer to lay their eggs on grassy vegetation, including grassy weed species, cereals, mixed forages and grassy species of cover crops. Larvae hatch from the eggs and feed at night for approximately a month. Full grown true armyworm are 4 cm (1 1/2 in.) long and are dull-green to brown in colour. They always have white-bordered stripes running laterally along the body and to be true armyworm larvae, they must have dark diagonal bands at the top of each abdominal chubby proleg (Figure 1).



Figure 1. Armyworm always have white-bordered stripes running laterally along the body and to be true armyworm larvae, they must have dark diagonal bands at the top of each abdominal chubby proleg .

Most feeding activity is done in June to early July but can start as early as late May. In corn, larvae strip the leaf margins, but as they grow in size and numbers, can leave only the midribs left on the plants. As long as the growing point of the plant is not damaged, the corn plant will be able to recover from moderate feeding. In cereals and mixed forages, feeding begins on the leaf margins, but larvae may quickly move up the plant to feed on the kernels and awns or clip the wheat, timothy or other small grains head completely off of the stem. Clipped heads can be found on the soil surface and can impact yield if taking place in many areas of the field.

To stay ahead of armyworm, scouting needs to be done every 2 or 3 days. They can quickly invade neighbouring fields overnight if there are host crops in fields side by side of each other. It is important to spot the armyworm larvae when they are small (less than 2.5 cm) in size for any insecticide to be effective.

The best time to scout for true armyworm is shortly after dusk when larvae are actively feeding. In corn, examine 20 plants in five areas in the field (100 plants total). In cereals and mixed forages, examine 10 areas of the field, assessing the number of larvae per 30 cm² (1 ft²). Pay particular attention to the border area directly adjacent to other grassy host crops. During the day, if it is cloudy and overcast, you might be lucky enough to see larvae in the whorl, leaf axil, or on the head of the plant but on sunny days, they will be down on the ground amongst the crop debris or under soil clods. Brown frass may also be present on the plants and on the soil surface. If you find larvae, note both their size and check near the head of the armyworm for eggs. These small, oval, yellowish white eggs are from a parasitic fly (Figure 2). The eggs will hatch, and the maggots will mine inside the armyworm larva and kill it. So if a large proportion of the larvae have these eggs on them, insecticide is not required as biocontrol has done the work for you.



Figure 2. These small, oval, yellowish white eggs are from a parasitic fly .

Threshold for Corn: Foliar insecticide may be warranted in seedling corn if there are two or more un-parasitized larvae per seedling or 10% or more of the plants have feeding and larvae are smaller than 2.5 cm (1 in.). For corn past the 6-leaf stage; if 50% of the plants have leaf feeding damage and are infested with larvae smaller than 2.5 cm (1 in.), insecticide treatment may be warranted. As long as the growing point of the plant is not damaged, the corn plant is usually able to recover from moderate feeding.

Threshold for Mixed Forages: Control is warranted when five or more larvae (smaller than 2.5 cm) per square foot are found. In seedling crops, two to three larvae (smaller than 2.5 cm) per square foot may warrant control. Avoid treating with insecticides when large numbers of parasitized larvae are present.

Threshold for Cereals: Chemical control is warranted if there are 4 to 5 un-parasitized larvae per 30 cm² and the larvae are smaller than 2.5 cm. If a significant amount of wheat head clipping is occurring, spray may be warranted if larvae are still actively feeding, are smaller than 2.5 cm and as long as pre-harvest intervals have not been reached.

Management Strategies:

- If the larvae are over 2.5 cm (1 in.) long, there is no benefit in applying insecticide, since most of the feeding damage is already done and the insecticide will not be effective on larger larvae.
- Treatment may be confined to infested areas. If the armyworm are migrating from adjacent fields, spraying an insecticide along the field border may be sufficient.
- Pay close attention to pre-harvest intervals.

Keep on eye on [Field Crop News](#) for scouting alerts and refer to the [Pest Manager app](#) and [OMAFRA Publication 812, Field Crop Protection Guide](#) for insecticide options.

Optimizing Winter Wheat Quality at Harvest

Joanna Follings, Cereal Specialist, OMAFRA

When we think about getting the highest yields and the best quality out of our winter wheat crop we tend to think about management practices such as timely planting, variety selection, nutrient management (nitrogen, phosphorus, potassium and sulphur), as well as timely fungicide and herbicide applications. However, one management practice that can often be overlooked or forgotten about in terms of managing wheat quality is a timely harvest. As winter wheat harvest quickly approaches don't forget to plan ahead to ensure you maintain the highest quality wheat possible by reducing your pre-harvest sprouting and fusarium risk.

Sprouting Management

Pre-harvest sprouting can result in downgraded wheat at the elevator meaning a lower return for your crop. Thus, it is important to prevent sprouting once the wheat crop reaches maturity. The most pre-harvest sprouting tolerant wheat is hard red wheat, followed by soft red wheat and white wheat which lacks sprouting tolerance. Previous research conducted in Ontario has shown that when harvest was delayed by two weeks the amount of sprouted wheat increased by almost 10% and yield was reduced by almost 4 bushels/acre (Table 1). Not only is yield being lost but the wheat is also likely to be downgraded as a result of the increase in sprouted wheat.

Table 1. The impact of delayed harvest on sprouts in winter wheat. Johnson *et al.* 2011.

Harvest Date	Yield (bu/ac)	Test Weight (lb/bu)	Sprouts (%)
July 13	92.4	62.0	0.0
July 18	91.8	61.3	0.0
July 21	91.7	60.4	2.3
August 1	88.7	57.8	8.8

Therefore, when planning your harvest you should combine fields with soft white wheat first to reduce sprouting risk. It is also important when planting winter wheat in the fall to ensure you are planting no more white wheat than what you are able to harvest in a few days.

Fusarium Management

In 2016, Ontario grew some of the highest quality winter wheat ever. This was a result of the very low levels of fusarium and DON in the winter wheat crop. Dry weather during the flowering period likely played a significant role in this. However, that is not likely to occur every year so timely fungicide applications and harvest are needed to reduce fusarium risk. If harvest is delayed and rainfall events occur before harvest is able to begin again, the quality of the wheat crop can be significantly negatively impacted. As previous research has shown, for every rainfall event that occurs after the timely harvest date, you can lose approximately 1 lb/bu of test weight (Table 2). In addition, it was found that in a field with low levels of fusarium at the timely harvest date the fusarium in the field increased significantly when rainfall events occurred.

Table 2. The impact of rainfall events on fusarium in winter wheat. Johnson *et al.* 2011.

Harvest Date	Yield (bu/ac)	Test Weight (lb/bu)	Fusarium (%)
Timely	73.0	61.1	0.7
1 Rain	72.4	59.6	1.1
2 Rains	73.4	58.9	1.3
4 Rains	72.7	58.0	1.8

Just as it is important to harvest white wheat first, it is also beneficial to combine fields with fusarium infections as soon as possible. This helps reduce the amount of fusarium that continues to grow particularly when moisture levels are high (>19%). The amount of fusarium damaged kernels can also be reduced by blowing them out the back of the combine. Research conducted by Dr. Schaafsma at the University of Guelph found that when fan speeds were operated at their maximum, there was a significant decrease in fusarium damaged kernels (Figure 1).



Figure 1. Fusarium damaged kernels in a winter wheat sample.

Growers can be hesitant to utilize this practice because of the risk of losing good kernels. However, although this research did find that good kernels were being lost out the back of the combine, the improvement in the overall sample of the harvested grain due to reduced fusarium damaged kernels outweighed the losses of good kernels (Table 3).

Table 3. Effect of different fan-speeds on wheat yield, Publication 811: Agronomy Guide for Field Crops (Dr. Schaafsma, University of Guelph, 1996).

Comparison	Fan Speed							
	Sieve Setting: 6mm (1/4 in)							Front Closed
	1,160 rpm	1,190 rpm	1,220 rpm	1,250 rpm	1,280 rpm	1,320 rpm	1,330 rpm	1,330 rpm
Good kernels on ground	16/ft ²	11.6/ft ²	31.6/ft ²	24.4/ft ²	35.2/ft ²	41.4/ft ²	43.6/ft ²	42.8/ft ²
Loss	0.8 bu/ac	0.6 bu/ac	1.6 bu/ac	1.2 bu/ac	1.8 bu/ac	2.1 bu/ac	2.2 bu/ac	2.1 bu/ac
Loss at 60 bu yield	1.38%	0.97%	2.63%	2.03%	2.93%	3.45%	3.63%	3.56%

New, Free Soil Health Publications Now Available to Order!

The Ministry of Agriculture, Food and Rural Affairs is rolling out a total of 21 new soil health publications. These publications provide best management practices to help you preserve and conserve soil while improving soil health and crop production. Check out these six new titles on our [Soil Health in Ontario](#) web page:

Adding Organic Amendments

Erosion Control Structures

Cropland Retirement

Soil Health in Ontario

Field Windbreaks

Soil Erosion by Water

You know that high quality, healthy, productive soil is the foundation of a strong, sustainable agri-food system. These publications, part of our Best Management Practices series, can help you plan and implement practices to improve soil health and increase yields. Unfortunately, the health of Ontario's soils is on the decline. While many farmers practice good land management practices, there is much more that can be done to improve soil health and protect soil for long-term productivity.

The five titles above are just the beginning. Check our [web page](#) regularly for future publications, which will include:

Cover Crops and Manure

Perennial Systems

Plus many more!

No-Till for Soil Health

Subsurface Drainage

Our soil health publications were developed to support the upcoming [Agricultural Soil Health and Conservation Strategy](#). We're working in partnership with stakeholders and experts to develop the Strategy with the goal to sustain Ontario's strong agricultural production while protecting the environment and adapting to a changing climate.

All of the titles can be ordered through [ServiceOntario](#) once published. You can find the ordering information on the [Soil Health in Ontario](#) web page.

Do you have soil health questions? Contact our Agricultural Information Contact Centre at 1-877-424-1300 or ag.info.omafra@ontario.ca.



Figure 1. Five new publications available.

Tank-mixing Can Reduce Weed Control

Mike Cowbrough, Weed Management Field Crops Program Lead, OMAFRA

A farmer wants to mix a “crop enhancer” with glyphosate to control weeds in glyphosate tolerant soybeans. According to the manufacturer’s website this product “can be combined with other applications (e.g. fertilizer, herbicides, insecticide, etc.)”. However, the product’s ingredient list contains a lot of cations, which will “tie up” the glyphosate and reduce weed control (Hall et al., 2000). The farmer’s trusted agronomist advised against mixing this product with glyphosate and sent a sample to me so that I could evaluate its effect on weed control.

The agronomist’s instincts were correct. Lamb’s-quarters control was noticeably reduced when the “crop enhancer” was included with glyphosate (Figure 1). Measuring the dry weight of harvested lamb’s-quarters in each treatment revealed that an application of glyphosate provided a 90% reduction in lamb’s-quarters biomass but the “crop enhancer” and glyphosate tank-mix only reduced lamb’s-quarter biomass by 40%.

Tank-mixing a herbicide and fertilizer is not an illegal practice. The Pest Management Regulatory Agency (PMRA) in 2009 issued a memorandum known informally as the “PMRA tank mix policy” which gives the go ahead for an applicator to mix products that are both registered for use on a given crop. However the memorandum does say that “the addition of a fertilizer to the spray carrier may result in a greater chance of host-crop injury so initial use should be limited to a small area to confirm results prior to widespread use.” In other words “you’re on your own” in terms of any performance guarantee whether it be crop safety or weed efficacy.

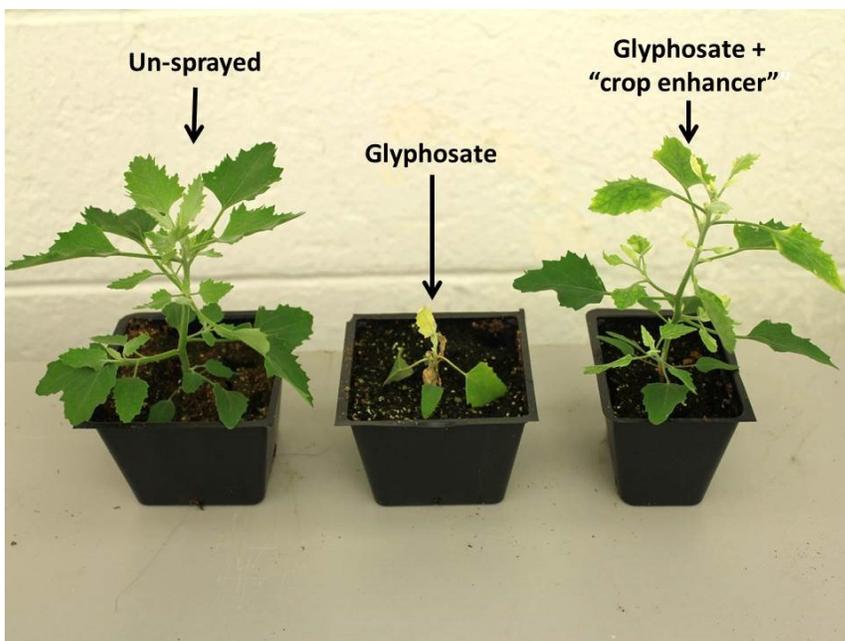


Figure 1. Lamb’s-quarter control at 10 days after application of glyphosate (centre) compared to the tank-mix of glyphosate + the “crop enhancer” (right) and the un-sprayed control (left)

Bottom line: Make sure there is a body of evidence and experience to indicate compatibility of products in a tank-mix otherwise the results could be costly.

Citation: Hall, G. J., C. A. Hart, and C. A. Jones. 2000. Plants as sources of cations antagonistic to glyphosate activity. *Pest Manag. Sci.* 56:351-3

Reducing the Risk of Farm Fires

Faulty electrical systems cause approximately 40 per cent of farm building fires with a determined cause, making it one of the leading known causes of farm fires.

What can you do?

Regular inspections and maintenance are key to reducing the risk of a fire. We recommend that you work with a professional to inspect and monitor your farm buildings.

- Have your buildings inspected and maintained regularly by a licensed electrical contractor.
- Develop a preventative maintenance and housekeeping schedule.
- Work with a professional to monitor the heat conditions of your buildings using infrared technologies.
- Work with your local fire department and insurance company to identify problem areas on your farm, and fix any problem areas identified.
- Have a plan ready to deal with any emergency.
- Train your family and employees on what to do if there is a fire. Make a list of who to call during and after a fire, and establish a safe meeting point.

Visit ontario.ca/preventfarmfires to find helpful resources, including:

- The [Reducing the Risk of Fire on Your Farm book that](#) examines the main causes of farm building fires and what you can do to minimize risks.
- A checklist to help you [assess your farm's fire risk](#).
- A link to the [Farm Fire and Emergency Sketch web page that explains step-by-step how to](#) create a sketch for your operation.
- Our [Electrical Systems in Barns Factsheet](#) that provides information on how an electrical system can start a fire, regulations and barn electrical maintenance practices.
- Links to different inspection, monitoring and extinguishing technologies, such as [FLIR](#) heat-sensing cameras, [Cole-Parmer](#) gas detectors and the [DSPA 5 aerosol generator](#).

For more information and to suggest a different fire prevention device, technology or program that could be listed on our website, contact the Agricultural Information Contact Centre (AICC) at 1-877-424-1300 or ag.info.omafra@ontario.ca.

Visit ontario.ca/farmsafety for other resources and tips for keeping your farm safe.

ontario.ca/preventfarmfires



Figure 1. Reducing the risk of farm fires

Clubroot in Ontario Canola

Meghan Moran, Canola and Edible Bean Specialist, OMAFRA

In the summer of 2016, clubroot disease was found throughout a field of canola in the Verner area of West Nipissing. Clubroot has been established in Brassica vegetable crops in Ontario for a number of years, but this was the first time the disease was confirmed in Ontario canola.

Above ground symptoms of clubroot include yellowing, stunting, wilting, premature ripening, and plant death. The above ground symptoms are similar to those of other diseases and nutrient deficiencies, lack of water, or high temperatures. Infections that occur at later plant stages may not result in above ground symptoms. Proper diagnosis of clubroot infection must include digging up plant roots to check for gall formation. Roots of infected plants become malformed and cannot adequately transport water or nutrients. Ontario farmers should now make it a regular practice to walk out to areas of the field that ripen prematurely or look unhealthy and pull up plants to look for clubbed roots.



Figure 1. Clubroot infection found in Ontario canola in 2016
(Photo credit: www.ontariocanolagrowers.ca)

There may be little to no yield loss where spore counts are low and conditions slow the plant infection (low soil moisture, pH above 7.2). There can be up to 100% yield loss across the field or in areas of a field where spore counts are high and/or conditions favour infection early in the season.

In response to the discovery of clubroot in Ontario canola, a preliminary soil survey was conducted across the province. Soil samples were taken from fields where canola has been grown in the last 3 years targeting many, but not all, canola growing regions in Ontario. Fields were sampled based on voluntary participation by farmers and agronomists, and sample sites do not represent a comprehensive assessment of all canola fields or regions of Ontario. For those samples taken by OMAFRA, approximately 20 soil cores (8" deep) were taken from each of the sampled fields. Sampling was targeted to areas of the field where infections are likely to begin, including a "W" pattern near the major entrance to the field and in some cases, in wet areas of the field. While taking the samples, sanitation procedures were carried out to ensure the samples were not contaminated and the disease was not spread during the sampling process. This includes using a bleach solution to clean soil probes, buckets, shovels and boots and/or using boot covers.

A total of 95 soil samples were collected and analysed, and clubroot was detected in 11 of the sampled fields. Clubroot was detected in fields in the areas of Temiskaming Shores/New Liskeard, West Nipissing, Bruce Peninsula, and Dufferin County (see Figures 2 and 3).

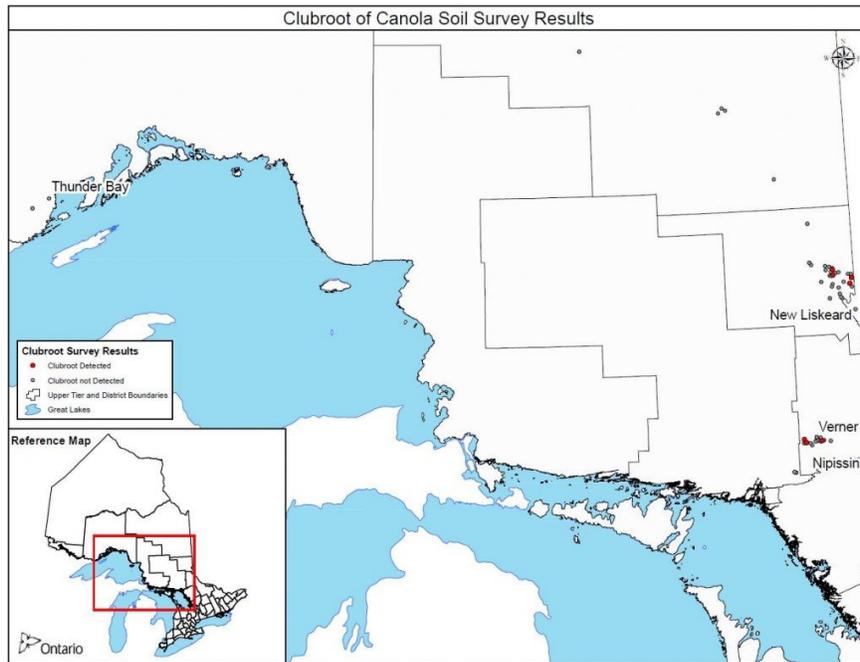


Figure 2. The “northern” portion of the clubroot survey includes 68 soil samples taken from Thunder Bay, Kapuskasing, Matheson, Cochrane, Temiskaming area and Verner area. Clubroot was detected in soils in Temiskaming and Verner.

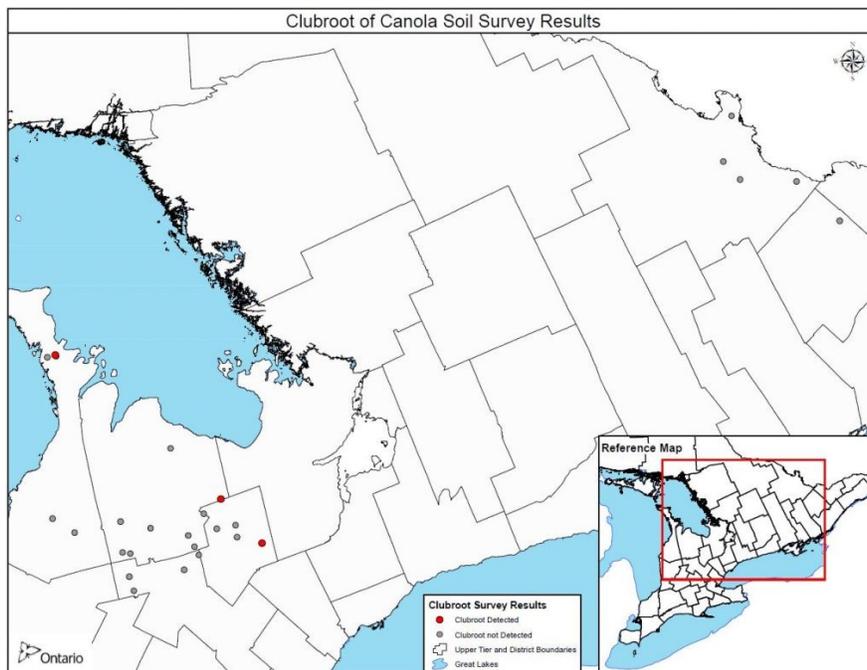


Figure 3. The “southern” portion of the clubroot survey includes 27 soil samples taken from Bruce, Grey, Wellington, Dufferin, Renfrew and Lanark counties. Clubroot was detected in soils in Dufferin county and around the Dufferin-Grey border.

Clubroot moves through soil transferred from one field to another. This can occur through movement of soil on farm equipment, in manure, in water, or through erosion, to name a few. Once clubroot is established in a field it cannot be eradicated. Spores can survive in soil for up to 20 years, but reproductive spore counts are significantly reduced when there is no host crop present.

Canola can be grown successfully in fields where clubroot has been detected, when good sanitation and management practices are followed. The most effective management strategy is using a long crop rotation (4 years) to prevent spore build-up. Because the pathogen is an obligate parasite, it will not reproduce without a host crop (Brassica) present. Growing clubroot resistant varieties is also a recommended management practice, and these varieties should be used if it is suspected there is a risk of clubroot.

Good sanitation of field equipment and practices that restrict the movement of soil from one field to another are important in managing the spread of clubroot. For example, tilling and planting clubroot infested fields last can reduce the spread of the disease to fields that are not infected. The level of equipment sanitation depends on the level of perceived risk, and can include removing loose soil from equipment, pressure washing, and disinfection with a bleach solution. There are currently no pesticides registered for the control or suppression of clubroot in canola.

Now that clubroot has been detected in multiple areas of Ontario, canola growers across the province should monitor their crops annually for presence of this disease. Fields should be observed in summer and fall for areas of yellowing, wilting, stunting and premature ripening. Walk out to any areas of the field that look stressed or unhealthy and pull up the plant roots to check for galls. Soil and plant samples can also be submitted to diagnostic labs to confirm the presence of the disease.

Comprehensive resources on identifying and managing clubroot disease can be found at www.clubroot.ca. Speak to your seed dealer about the availability and performance of clubroot resistance canola varieties.

Re-evaluating the Cost of Compaction from Manure Application

Christine Brown, Sustainability Specialist Field Crops OMAFRA

How much does compaction really cost? Consider increasing the profitability of a wheat crop by factoring in the cost of compaction-induced yield loss in corn resulting from spring applied manure.

Healthy soils have a unique infrastructure of pores that vary in size and support the movement of air, water, earthworms and other soil micro-organisms and plant roots. Healthy soils that allow maximum water infiltration will help maximize the soil's water-holding capacity and will minimize water runoff that leads to soil erosion. Soils with large pore spaces have better water infiltration capacity while the greater the number of small pores, the more consolidated the soil tends to be.

What is compaction? Compaction is a change in soil structure, including an increase in soil density. In compacted soils, the soil aggregates are pushed more tightly together which reduces the size and stability of the soil aggregates, the size of the pores and disrupts the continuity of those pores.

According to research from U of Minnesota, the change in soil structure is complex. There is not a simple relationship between increased soil density and decreased crop yield. The changes in soil structure affect the movement of water, air, roots, and soil organisms through the soil, so the effect on yield depends on the weather, the amount and depth of compaction, and the crop type.

What causes compaction? Wheel traffic is the main cause of compaction on most farms. The amount of compaction depends on the size and weight of the equipment, the moisture level of the soil, and the type of soil (soils high in clay or low in organic matter compact more readily). Table 1, with information adapted from Dr. S Shearer – U of Ohio, shows the potential economic impact of compaction from wheel traffic on normal and wet soils. It also considers the impact of wider spread pattern for manure application equipment on reducing wheel traffic-induced compaction.

If the data collected by Dr. Scott Shearer of Ohio State University is extrapolated to calculate the cost of compaction on crop yield per acre, it would demonstrate a 6 bu/acre yield difference from wheel traffic in soils with normal moisture and a 27 bu/acre yield difference from wheel traffic in wet soils. At \$4.50 /bu corn this would cost close to \$50/acre with narrow width spread pattern manure application equipment. Wider spread pattern results in less wheel tracks and in less crop yield loss.

Table 1: Yield Impact from Wheel Track Compaction on Normal and Wet Soils with Common Field Equipment and Varying Spread Widths of Manure Application Equipment

Machine	Trafficked Area (%)	Yield Reduction Prediction (200 bu/ac No-Till corn Base)					
		Normal		Wet		~ Yield Impact \$/ac (\$4.50/bu corn)	
		Trafficked yield	Field Average	Trafficked yield	Field Average	Normal Soil Moisture	Wet Soil Moisture
Grain Cart	14	175	196	148	193	\$ 13	\$ 28
36 row Planter	6.7	190	199	171	198	\$ 3	\$ 8
16 row Combine	17.1	176	196	150	192	\$ 15	\$ 32
Potential Yield Reduction from Compaction with Manure Application							
		Normal Soil Moisture		Wet Soil Moisture		~ Yield Impact \$/ac (\$4.50/bu corn)	
		Trafficked yield	Field Average	Trafficked yield	Field Average	Normal Soil Moisture	Wet Soil Moisture
Manure Application 10 ' spread pattern	40	189	195	168	186	\$ 11	\$ 50
Manure Application 20 ' spread pattern	25					\$ 7	\$ 30
Manure Application 30 ' spread pattern	15					\$ 4	\$ 18
Manure Application 50 ' spread pattern	8					\$ 2	\$ 10
Adapted from Scott Shearer 2016 presentation to Ontario CCA							

Many producers do not consider wheat to be an economical crop in the rotation. If the economics of crop production were not just based on the highest yield, but on the economics (including long term soil health) across the whole rotation, it would escalate the value of wheat in the rotation. Beyond the advantages of increased yields for subsequent corn and soybean crops, documented by Dr. B Deen at the University of Guelph, there are additional economic considerations. The opportunity of manure application after July wheat harvest, into conditions with the lowest risk for compaction, and with the opportunity to add cover crops to alleviate consolidated soil and build aggregate stability give additional diversity and soil health advantages. Additionally, the opportunity to spread workload and equipment costs over the entire growing season (compared to a few weeks in spring and fall) provides additional advantages.

With larger fields and bigger field equipment, compaction issues will not disappear. Is it time to reconsider the options for reducing compaction on your farm?

References: Soil Compaction; Causes, Effects and Control <https://www.extension.umn.edu/agriculture/soils/tillage/soil-compaction/>

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OSCIA PROVINCIAL NEWSLETTER

JUNE 2017 EDITION

Message from the President - Mack Emiry



As I write this message many of you, particularly in Southern Ontario, are struggling with extreme weather challenges which are impacting the timely planting of crops. It seems that, in general, the farther east in the province the wetter it has been!

In April, the Board of Directors invited Regional Presidents (or Vice Presidents) to attend a meeting to explore ways to

strengthen the Regions and better serve County and District Associations. Ideas were shared on what is working well (or occasionally not!).

As well as monthly meetings, various members of the Executive have been involved with other meetings and activities over the last 3 months.

In February, a meeting with the Environmental Commissioner of Ontario provided the opportunity to feature the many OSCIA research, education and outreach programs which promote and enhance soil health. The University of Guelph also highlighted the research work done at the Elora and Ridgetown locations. As well, we are all aware of the extensive work done by the OMAFRA Soils Team. It was important to have the opportunity to bring all this to the attention of the Environmental Commissioner.

Several Soil & Crop Executive and Directors participated, along with others, in training sessions under the Soil Leadership Program. These individuals will promote, by example, Best Practices in Soil Health and, attend workshops, tours, demonstrations, etc.

I have attended 2 events focused on expanding agriculture in Northern Ontario and, more specifically, the Great Clay Belt area in Temiskaming and Cochrane Districts. The first event, organized by the Northeast Community Network, was on general agricultural opportunities and initiatives. The second event, organized by OMAFRA, and attended by Minister Leal, was specifically called the Northern Livestock Pilot and is to promote and support expansion of the beef (cow/calf) sector.

In a similar vein, OMAFRA has conducted several "Farms Forever" discussion sessions across Southern Ontario with the objective of strengthening the Agri-Food industry in Ontario. OSCIA accepted the opportunity to participate and contribute.

The Executive look forward to holding an Outreach Meeting in St. Clair Region in July.

Please consider the opportunity to participate in the newly designed Forage Masters Program. The 2017 program has a deadline of July 15th. I know you will find the Self-Assessment document a most interesting exercise. The competition aspect is at the Regional level. If you have not been following the details and are interested, check with your Provincial Director or Regional Communications Coordinator.

Take advantage of any crop tours, field trips, twilight meetings and so forth which will be happening in your locale this summer.

We will all hope for good crop conditions for the rest of the season!

Until the next time,

Mack Emiry, OSCIA President



A QUARTERLY NEWSLETTER, ISSUED
ALONGSIDE 11 REGIONAL NEWSLETTERS AND
OMAFRA CROP TALK, TO UPDATE MEMBERS

In this Issue

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- **Increasing Membership Engagement at OSCIA**
- **Ontario Forage Master Competition Update**
- **Highlights from the 2016 Census of Agriculture**
- **EFP at the University of Guelph**
- **Building Soil Health, In Case You Missed it...**
- **Your Regional OMAFRA Field Crop Specialists**

Ontario Soil and Crop Improvement Association

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Website: www.ontariosoilcrop.org



Increasing Membership Engagement at OSCIA

OSCIA has embarked on a bold new approach to increase skill development resources that will assist their local and regional associations in a variety of ways. Over the last four months, 42 local associations and 11 regions participated in the first round of workshops, called The Pilot Training Program. The Pilot focused on identifying roles and responsibilities, governance training, how to run a successful meeting, membership engagement, and brand awareness. Although workshops were not mandatory, all associations expressed their desire to participate.

In year one of the planned two-year initiative, OSCIA set out a goal to facilitate up to 18 one-day training sessions. So far, we have facilitated 11 workshops; 10 followed the Pilot agenda, and the other was designed for regional directors and presidents. We expect to launch a new workshop by late summer that focuses on the needs of the secretary/treasurer. Input from secretaries/treasurers is being gathered now, and will play a vital role in the development of the workshop. Regional communication coordinators (RCC) will also be participating in a separate workshop customized for them in August.

With the participation and input from the local and regional associations, we have started developing several new resources. The additional resources will assist with membership engagement, and provide consistency across our associations.

Together with continued support, participation, and motivation, we as an organization can keep moving forward to increase membership engagement and meet our goal that was set out in our 2015 Strategic Plan.

This project was funded in part through *Growing Forward 2 (GF2)*, a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of GF2 in Ontario.

Brittany Roka, Association Development Advisor



Member Benefit - Soil Analysis Discount

5 labs participating - visit OSCIA website for details:

<http://www.ontariosoilcrop.org/association/association-membership/>

Ontario Forage Masters Competition Update

Hay is being cut in some parts of the province – it's time to turn attention to the Forage Masters Competition. Considerable effort has gone into development, writing, testing, sponsorships, and communications; now we wait anxiously to see how members respond. The deadline for submissions is July 15th. Look for a related story in your Regional Newsletter this month that identifies a point person in your county/district to assist in distributing the self-assessment booklets and answering general questions.

Participants have their choice of completing the self-assessment in hard copy or on-line. If having a hard copy in your hands is preferred, you can either ask the point person identified for your area to send you a copy, or you can download one from the pdf available on the website. The best option for most will likely be to complete the self-assessment online. Visit the Forage Master website page to find the printable file (appears as the booklet cover), or the online version (appears as a green button): <http://www.ontariosoilcrop.org/association/association-membership/ontario-forage-masters/>

If you participated in past years, you will notice quite a change in procedure. The self-assessment walks you through a series of questions with prepared responses marked as "Best", "Good" or "Needs Improvement." You check off what aligns with your current practice, and complete only the questions that apply to your situation. Once complete, the summary and copies of your most recent soil and feed analysis are sent to the Guelph OSCIA office to be scored.

Those who have already done the exercise report it took 1-2 hours to complete. They also commented it was a tremendous learning opportunity and well worth the time invested.

If you grow forage, we encourage you to take a serious look at the Forage Masters Competition.

Andrew Graham, Executive Director OSCIA



Highlights from the 2016 Census of Agriculture

Results from the 22nd Census of Agriculture since confederation show that farmers continue to grow older and farm numbers are down again, although this was the smallest decline in 20 years. It also shows rising land values saw more marginal area become cropland, and farm profitability has subsequently held steady since 2011.

Ontario is the home of more than one quarter of all Canadian farmers. Among them, cash croppers account for 34% and are managing nearly 60% of Canadian corn ground and almost half of all soybean acres. The number of women running these operations is up 1.3% since 2011. There are also more farmers over the age of 55, as well as under the age of 35, since the last census.

Ontario farmers should be pleased to see we've emerged as leaders in farm technology.

Top technology adopters in 2015		
Automatic steering	Saskatchewan	14,343
	Alberta	10,462
	Ontario	6,851
GIS mapping (e.g. soil mapping)	Ontario	5,436
	Saskatchewan	3,097
	Alberta	2,589
GPS technology	Saskatchewan	17,475
	Ontario	13,851
	Alberta	13,684
Smartphone/tablets	Ontario	19,532
	Alberta	19,093
	Saskatchewan	18,009
Computers/laptops	Ontario	27,904
	Alberta	23,725
	Saskatchewan	20,708

The census shows 13.8% of all Ontario farms were using auto-steer as of 2015, with 48.2% of those located in southern Ontario and 36.0% in the west. Southern Ontario can also claim the largest adoption of soil mapping and GPS technologies in Ontario.

Southern Ontario is also responsible, with some help from Central Ontario, for increased acreage receiving full incorporation tillage, even though the number of farmers practicing full residue incorporation is down across the country and throughout Ontario. On the other hand, statistics appear to show no-till has fallen out of favour, with an exception in the North where no-till acreage jumped up 7% since 2011.

What does that all mean for OSCIA? Well, we've already seen the impact of a younger, more gender diverse, and tech savvy

group of farmers here in Northumberland County and the Quinte Region. The 2016 Census exemplifies the continued need for discussion about the practices we're collectively choosing for our farms and how best to put new technologies to the test, for all Canadian farmers' sake.

For full report: <http://www.statcan.gc.ca/daily-quotidien/170510/dq170510a-eng.htm>

Amy Petherick, *Quinte Regional Communication Coordinator (RCC)*

EFP at University of Guelph

It may interest you to know that Environmental Farm Plan (EFP) workshops have been incorporated into class curriculum at the Ridgetown Campus of the University of Guelph. EFP is a component of the *Agriculture and Stewardship* course and according to Margaret May, Regional Program Lead for Thames Valley, St. Clair and Golden Horseshoe Regions and part time lecturer on campus, has led to some very interesting discussions amongst students. "In 2015, there were 149 workbooks distributed in the classroom with 92 coming back in for verification. The number of workbooks handed out rose to 168 in 2016, with 119 handed in. That's an outstanding 71 percent last year who opted for a review of their completed workbooks", reported May.

There have been previous efforts over the years to have EFP integrated into course work at the college. With realization that not all students come from a farming background, some questioned the suitability of the EFP, but May says that has not created a problem. "We provide options for students who don't come from a farm, they can choose to complete the plan based on a neighbour's operation or they can base it on a fictional case study."

To best incorporate the same discussions that take place at a regular EFP workshop, all students receive the workbook. May delivers a 2-hour session per week, for six weeks. The names and contact information for those successful with verification, are sent to the Guelph office and added to the confidential records of farms across the province participating in the educational workshops.

May is extremely satisfied with the accomplishments and sees tremendous benefits. She hopes to possibly expand the course in future to include an element of business planning by incorporating elements of Growing Your Farm Profits workshop.

The dialogue often turns to cost share programs and questions about OSCIA, presenting a wonderful opportunity to demonstrate to young farmers some of the many benefits of membership.

Andrew Graham, *Executive Director OSCIA*

Building Soil Health, In Case You Missed It...

Winter meetings this past year provided outstanding opportunities to hear new developments on soil health. One surprise came from an analysis of Ontario soil test results over the past 14 years, reviewing soil organic matter (SOM) levels from up to 23,100 total soil samples/year. The data was provided by SGS Agri-Food Labs and the analysis done by Christine Brown, Nutrient Management Specialist, OMAFRA. From the results, SOM declined by 0.177% overall in Ontario over the past 14 years. In Essex, Kent and Lambton counties, the decline was more dramatic at close to 0.85%, which equates to 16,000 lbs per acre less organic matter. Ms. Brown's work also outlines how using soil amendments with cover crops increased biomass yields from 17 to 36%.

(<http://fieldcropnews.com/wp-content/uploads/2017/01/Farmsmart-2017-Organic-Amendments-for-fieldcropnews.pdf>, accessed May 10, 2017)

Another key message to improve soil health, which subsequently increases crop yields, came from the 31-year tillage and crop rotation trial managed by Dr. Bill Deen, University of Guelph. Using trial yield, management data and weather data, the research team concluded that the most resilient soils to withstand extremes in weather (drought or excessive moisture) were those that had a diversified crop rotation, not just with corn and soybeans, but also cereals under-seeded to red clover or alfalfa. In hot dry years, when cereals/legumes were grown with reduced tillage (conservation tillage), the yield increased 7% for corn and 22% for soybeans. (Gaudin et al. Increasing crop diversity mitigates weather variations and improves yield stability. PLoS One. 2015;10(2):e0113261. doi:10.1371/journal.pone.0113261)

Harold Rudy, Executive Officer OSCIA



Your Regional OMAFRA Field Crop Specialists

In 1999, OSCIA organized the local associations into eleven Regions to better align with the OMAFRA Field Crop Specialists.

This regional organization has helped formalize the various operations of OSCIA and helped strengthen the local SCIA's, by providing a Regional board, Regional Communication Coordinators (RCC), and a formalized method for the local SCIA's to work together.

An updated contact chart of OMAFRA Field Crop Specialists for each of the 11 regions is provided below.

In most cases OMAFRA has been able to assign two OMAFRA Field Crop Specialists to each of our 11 regions, one primary contact and one alternate contact. These OMAFRA representatives are available to assist their assigned region and the subsequent local SCIA's with respect to applied research projects. They have been encouraged, where appropriate, to attend regional/local Annual Meetings, planning meetings, assist with development of applied research projects/ protocols, to provide analysis of in-field research and entry of results into Crop Advances.

Amber Van De Peer, Executive Assistant OSCIA



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www.ontariosoilcrop.org/news/

- Get all the latest media releases, upcoming events listings and much more...



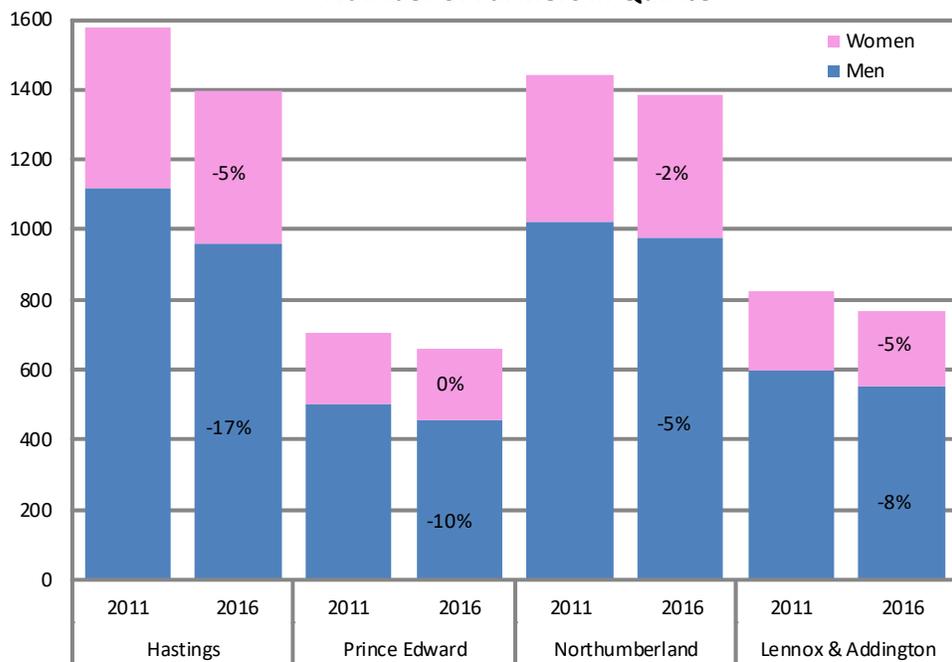
OMAFRA Field Crop Specialists – Regional Contacts

REGION	OMARFA REP	ALTERNATE REP
St. Clair	Adam Hayes , Soil Management Specialist, Ridgetown Resource Ctr. 519-674-1621, adam.hayes@ontario.ca	Albert Tenuta , Pathologist Field Crops, Ridgetown Resource Ctr. 519-674-1617, albert.tenuta@ontario.ca
Thames Valley	Ben Rosser , Corn Specialist, Crop Science Bldg, UofG, 519-824-4120 ext. 54865, ben.rosser@ontario.ca	Tracey Bauté , Entomologist Field Crops, Ridgetown Resource Ctr. Agronomy Bldg, 519-674-1696, tracey.baute@ontario.ca
Heartland	Horst Bohner , Soybean Specialist, Stratford Resource Ctr. 519-271-5858, C: 519-272-4827, horst.bohner@ontario.ca	Joanna Follings , Cereals Specialist, Stratford Resource Ctr., 519-271-8180, joanna.follings@ontario.ca
Georgian Central	Meghan Moran , Canola & Edible Bean Specialist, Stratford Resource Ctr. 519-271-0083, meghan.moran@ontario.ca	Michael Cowbrough , Weed Management Specialist, Crop Science Bldg., UofG, 519-824-4120 ext. 52580, mike.cowbrough@ontario.ca
Golden Horseshoe	Christine Brown , Sustainability Specialist Field Crops, Woodstock, 519-537-8305, christine.brown1@ontario.ca	Jake Munroe , Soil Fertility Specialist, Stratford Resource Ctr., 519-271-9269, jake.munroe@ontario.ca
East Central	Ian McDonald , Crop Innovation Specialist, Crop Science Bldg, UofG, 519-824-4120 ext.56707, C: 519-239-3473, ian.mcdonald@ontario.ca	Meghan Moran (see above)
Quinte	Scott Banks , Cropping Systems Specialist, Kemptville, 613-258-8359 scott.banks@ontario.ca	Sebastian Belliard (see below)
Eastern Valley	Sebastian Belliard , Soil Management Specialist, Kemptville, 613-258-8250, Sebastian.belliard@ontario.ca	Scott Banks (see above)
Ottawa Rideau	Scott Banks (see above)	Sebastian Belliard (see above)
North Eastern Ont.	Meghan Moran (see above)	
North Western Ont.	Meghan Moran (see above)	

If you've had some time to look into the numbers for Quinte region when the latest Census of Agriculture was released, you've seen some interesting trends emerge too.

Like the rest of the province, more farmland was pulled into production in this area but in some counties more than others. Where Eastern Ontario saw an increase in acreage of 12% and Central Ontario grew by 10%, Hastings only saw 7%, Prince Edward jumped by 13%, Northumberland was slower with 8%, and Lennox and Addington also surged with 11%.

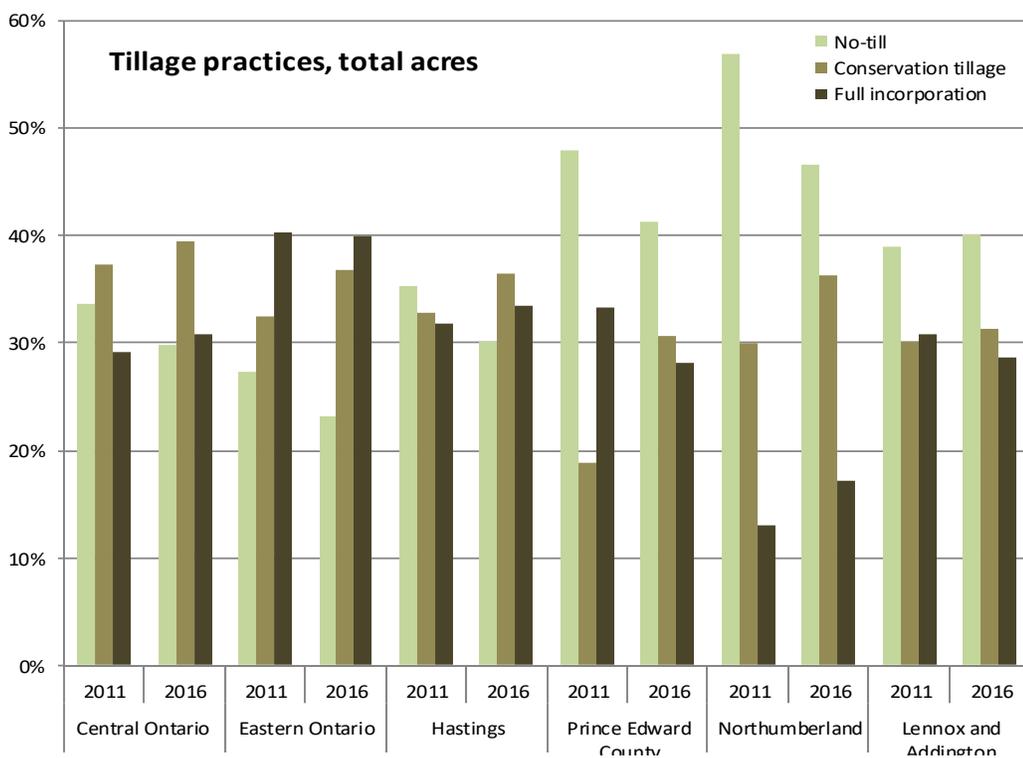
Number of Farmers in Quinte



In comparison, the number of farms grew 2% and 3%, respectively for Eastern and Central Ontario. But Hastings only gained 2 farms in the last 5 years. Prince Edward kept pace at 2% growth. Northumberland, as well as Lennox and Addington, bucked the trend by growing 12% and 13% respectively. Although farm numbers are up, the number of farmers running them are down. Most notably, men. In Prince Edward, the percentage of women in the farm community increased noticeably. This seems to be contributing to an increase in Soil and Crop members in Northumberland, but not elsewhere in the Quinte region.

Northumberland also currently leads the region in technology adoption. 88 farms are using auto-steer, whereas only 49 are in Hastings, 44 are in Prince Edward, and 28 have adopted it in Lennox & Addington. Additionally, 210 farmers are using GPS and 51 are soil mapping in Northumberland.

Tillage technology adoption has also changed dramatically across the region. No-till is no longer the darling of Hastings County, which appears to have gone 'back to the plow'. Throughout Prince Edward and Northumberland, minimum tillage implements appear to have sold well in the last five years. But, in Lennox and Addington, farmers are more inclined to leave their iron parked. No-till acres surged especially in Loyalist township.



as seen online...

Chadd Taylor
@ChaddTaylor1

Nice to have finished @ian_laver corn plot. With @coxy156 - Before a couple day rain forecast.



LIKES
9

10:55 AM - 30 Apr 2017

Dale Ketcheson
@KetchesonDale

sniff it's like Christmas, but more expensive



LIKE
1

12:59 PM - 8 May 2017

Shannon Desjardins
@agronomyavocate

Soybean Plot going in for Hastings Plowing Match at Sandercock's! #DOW #plot2017 #CountyFarmCentre #Craigcarson



LIKE
1

8:57 AM - 24 May 2017

Mark Burnham
@burnhamfarms

Out scouting today. Vetch looks pretty cool didn't have the tools to dig any. Also turnips are bolting. Still few days away from #plant17



LIKES
2

3:18 PM - 11 May 2017

Max Kaiser
@MaxKaiser

Hello Mr Bean... I am glad to see you!



LIKES
8

12:57 PM - 24 May 2017

kelly sharpe
@lhboy86

Staff meeting today! #mudhawk headquarters!



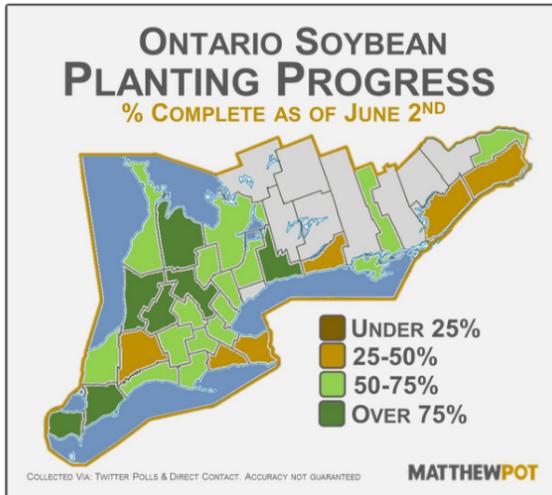
RETWEETS
6

LIKES
30

10:26 AM - 11 May 2017

Matthew Pot
@MatthewPot

Ontario #soybean planting progress map as of Friday evening. #OntAg





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