Heartland Soil & Crop News

June 2019

Huron SCIA drainage demo day

Tier 2 project update

Perth SCIA hosts 2019 Forage Expo

+ OMAFRA Crop Talk | OSCIA News | County Updates

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Ontario

OSCIA
Grassroots Innovation
Since 1939

Upcoming events

July 9—Perth County SCIA host 2019 Forage Expo. See advertisement on p. 4.

July 10—Waterloo SCIA Summer Tailgate Tour. Come learn about how cover crops, planting technologies, and planting green benefited 2019's challenging spring. 7 pm: Meet at Stevanus Family Farm, 1082 Snyders Flats Rd. Bloomingdale. 7:45 pm: Moving to Mintvalley Farm, 425 St Charles Street W. Breslau. 8:30 pm: Farmer discussion panel and refreshments

July 11—FarmSmart Expo, Elora. See advertisement on p. 27.

August 14 & 21—Growing Your Farm Profits workshop, Elora. Contact Lois Sinclair, lsinclar@ontariosoilcrop.org

September 10 & 17—Environmental Farm Plan workshop, Listowel. Contact Lois Sinclair, lsinclar@ontariosoilcrop.org

Wellington SCIA summer twilight tour—date TBD. Watch your e-news for details.

Soil test discount

Valid for current OSCIA members only until December 31, 2019

Discount applies to regular priced fees only, on applicable tests and services listed. Not available in conjunction with other discounts or programs, retailers/consultants may offer other discounts. Discount applicable to all samples received on a single submission. No cash value. This coupon must be submitted with samples and grower/field information. **Contact heartland.scia@gmail.com or call 519-669-5608 to receive a personalized coupon**

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In this issue

From the editor

For those of you who pay attention, you may notice that this edition of the Heartland News is arriving a little bit later than usual. That's because we wanted to cover the Huron County Drainage Field Day June 15—which pushed our production date back a week or 2. If you missed the event, don't worry! There is lots of information in this edition or you can visit the project website, Huronview.net. You can also sign up for project updates and research results.

The #1 topic of discussion in #OntAg is the weather—specifically, the historic amounts of rainfall we've experienced this year. There are many summer events happening where you can join with your colleagues, industry professionals and OMAFRA field staff to chat more about the longer-term effects as the season goes on—FarmSmart Expo, the Forage Expo in Perth and the many field days and twilight tours planned. ~Mary

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Proudly serving the members of Huron, Perth, Waterloo and Wellington County Soil and Crop Improvement Associations

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Watch for a monthly e-news in your email inbox!

Visit our website for updates: heartlandsoilcrop.org
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For more information on membership or anything at all, please contact John Poel at 519 860 7639 or at president@heartlandsoilcrop.org .

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Please return undeliverable mail to:

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The Ontario Forage Council

in conjunction with the

Perth & Victoria Soil & Crop Improvement Associations

present

Ontario Forage Expo 2019

"Hay Making in Motion"

SEE THE LATEST FORAGE EQUIPMENT DEMONSTRATIONS

VISIT THE TRADESHOW

Tuesday, July 9, 2019 10am - 3pm Perth County

Pendora Dairy Ltd.

6447 Road 164 Monkton

Tuesday, July 16th, 2019 10am - 3pm Victoria County

Vosbrae Farms

140 Skyline Rd., Oakwood

NO CHARGE to the farming community

Visit our website for maps & last minute updates!

A word from your provincial director

As a change of pace for this newsletter I am going to ask your indulgence as I bring a personal perspective to a couple of different topics. Mental health has been a focus for some of the past season's Soil and Crop meetings including the OSCIA AGM as well as other ag organizations and farm media. Something happened at one of our Executive meetings that triggered some memories for me and brought some experiences into focus. We are constantly brainstorming ideas for speakers at the AGM and sometimes delve into the past to review our performance. Sometimes our ideas work out fabulously, sometimes not. One of the not so good ones revolved around a speaker who we assumed was going to tackle a certain topic and then delivered a presentation on a completely different one. We would joke from time to time about this until one meeting someone, I can't remember who, reminded us that this person suffered from mental health issues. All of us I think suddenly realized the seriousness of this and it reminded us of the burdens that others carry. For me I was transported back in time to my teenage years in 1974. Yes I am that old. It's strange how certain memories stick clearly in your mind for reasons you really can't understand but I recall a summer night at my friends farm. His brother, a few years older than us, had just bought a car. It was, if I am not mistaken, a '70 Javelin. Not exactly a Porsche but back in the day it was a pretty sporty set of wheels. I remember him laughing and talking with the excitement that only a young guy with a new car can generate. He was relaxed and happy and natural and I guess all the things you are when you're 21 and things are going your way. But sadly it wouldn't last. His life would be devastated by mental illness and he would spend years in assisted living. I would see him very infrequently but when I did he would be pale and gaunt, chain smoking with a look of perpetual worry on his face. What he had taken from him was impossible to measure. And while this is a story I am telling I know you have your own in the place where you live. People have varying degrees of illness but all of them are challenged in a very real way and its easy for us fortunate ones to forget. We must remember that they walk the same path as we do but they are dragging heavy stones, their vision blurred by that which is not their doing, not their fault, not their true nature. And maybe that's what we can offer them. With a kind word or a simple conversation we can let them know that we see the essential truth, the essential value and even on their toughest days the essential joyfulness of who they are.

Next I have to talk about this spring of 2019. Not fun. At all. You could say it sucks or you could say it Super Sucks. Either would be the correct answer. Sometimes as I get older I think maybe with all the worry and challenge I am missing spring. Maybe we are so preoccupied with arranging seed and fertilizer, searching out the best options to speed up the process and fixing equipment that spring sneaks by without us even noticing it. Instead of racking my brain to try to decide which too wet field to go to next I should be strolling through gardens or walking on a breezy beach. But then I ask myself how can you be missing something that consumes you, devastates you, delights you, bewilders you, excites you, infuriates you and causes you to search for answers you didn't think you could find. While it can be a depressing overload of uncertainty and hard decisions you have to remind yourself this isn't a world of pretty and perfect. Its a world of real and imperfect. But there is no other place, no other dimension where you can experience what we have right here right now so we might as well find a way to enjoy it. And the joyful truth is we can't miss spring. We are intrinsically and naturally connected to it and that my friends can be viewed as nothing less than a wondrous blessing.

Stuart Wright, Heartland Provincial Director and OSCIA 1st vice-president

Heartland president John Poel, on behalf of Stuart Wright, presented Perth SCIA board member Jim McLagan with a certificate honouring his 40+ year commitment to Perth County SCIA.

Huron County SCIA host drainage expo

Hundreds turn out to Innovative Drainage Field Day held at Huronview demo farm in Clinton on June 15

Four tile contractors were installing innovative drainage tile at Huron County's Huronview Demonstration Farm near Clinton, Ontario on Saturday, June 15, 2019 and 350 people came out to see it. Farmers, drainage contractors and members of the public attended the Drainage Innovation Field Day. Visitors came from across Southwestern Ontario and from other parts of Canada as well as from the United States (even from California) to take part in the day. The drainage demo day included field tours on wagons, workshops, soil and water education activities, and an industry trade show.

Attendees during the day included the Honourable Ernie Hardeman, Ontario Minister of Agriculture, Food and Rural Affairs; as well as Hon. Lisa Thompson, Huron-Bruce MPP; and Ben Lobb, Huron-Bruce MP; county and municipal representatives; and other dignitaries from agricultural, drainage, and conservation organizations.

Anne Verhallen and Peter Johnson spent much of the day in the soil pit, chatting about soil health and the benefits of tile drainage

The event was run by Huron County Soil and Crop Improvement Association (HSCIA), a volunteer board of farmers who are passionate about improving soil and water quality. HSCIA has a fifteen-year agreement with the County of Huron to farm on the 47-acre Huronview Demo Farm field with cover crops, no-till, and best practices. "We knew we needed to invest in field drainage there in order to control erosion and we took this opportunity to try the most innovative system out there," said Doug Walker, President of HSCIA. "By partnering with Ausable Bayfield Conservation Authority (ABCA), we're able to use it for research.

Among those attending the drainage demo day were dignitaries from the Province of Ontario, the Canadian federal Parliament, and from counties and municipalities. Shown in photo, from left to right, are: Alex Ripley, Economic Development Officer, County of Huron; Cody Joudry, Director of Economic Development with County of Huron; Meighan Wark, Chief Administrative Officer (CAO) of the County of Huron; the Honourable Ernie Hardeman, Minister of Agriculture, Food and Rural Affairs for Ontario; the Honourable Lisa Thompson, MPP for Huron-Bruce; Jim Ginn, Warden, County of Huron; and Doug Walker, President of Huron County Soil and Crop Improvement Association (HSCIA). Also attending, later in the day, was Huron-Bruce MP Ben Lobb.

Organizers of the Drainage Innovation Field Day thanked the hundreds of people who attended as well as all the funding partners and other partners in the project and the volunteers who organized and ran the day.

"It is an unprecedented partnership," said Melisa Luymes, Project Coordinator. "We brought agricultural, drainage, and environmental stakeholders together to align on innovation and research to improve soil and water quality," she said.

This is the first time in Ontario that controlled drainage has been installed on a slope, according to Luymes. An Illinois-based drainage design company, AGREM, made the plans for the site and the designers, Jeremy and Bob Meiners, worked with the contractors last week and presented their work to the crowd last Saturday.

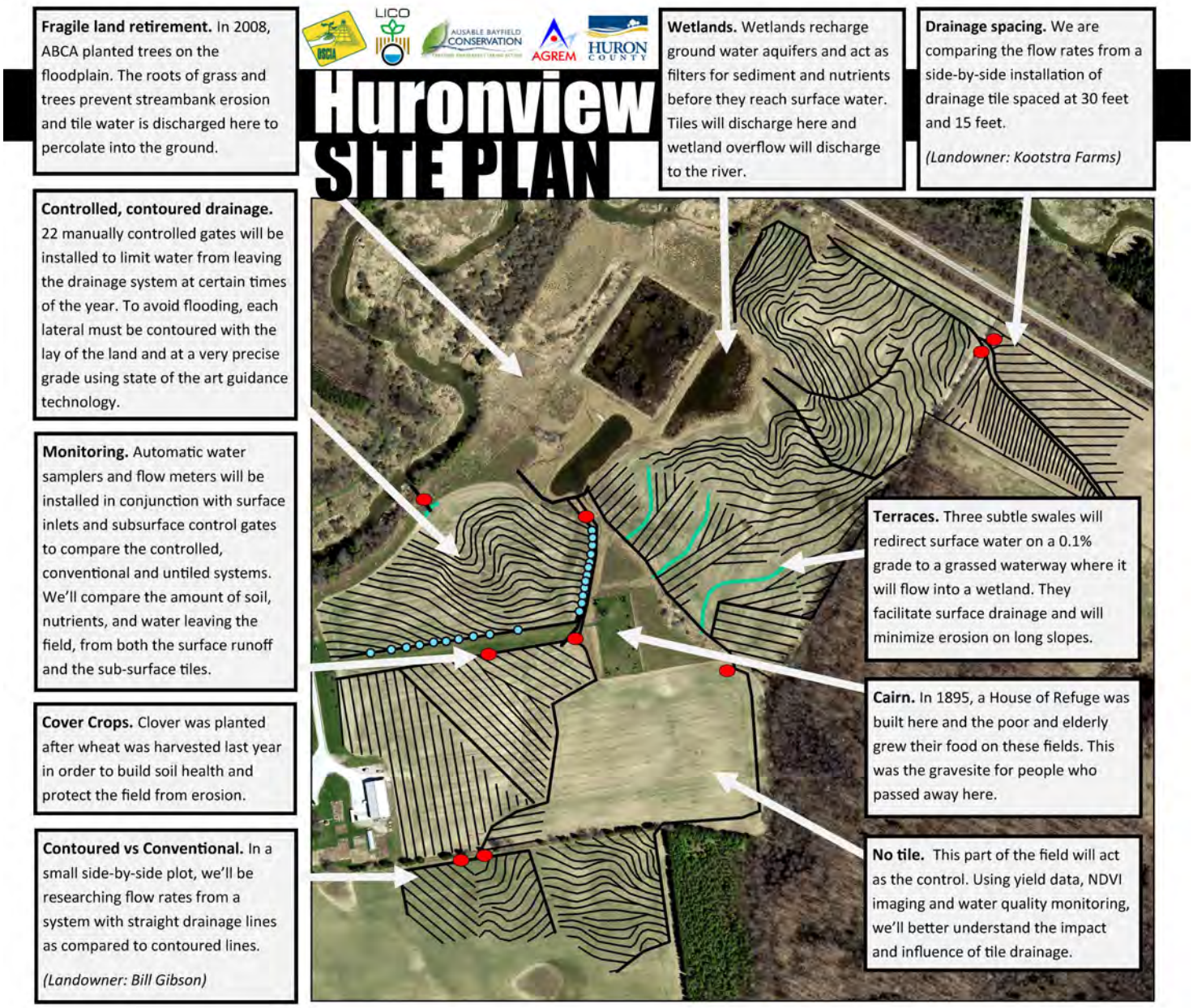
Drainage is essential for farming, but it needs to be designed well to reduce the potential for impacts downstream, according to Luymes. "Essentially, we're trying to 'shut off' drainage systems with underground control gates at certain times of the year," she said. "It works on flat fields in Ontario, but the key to making it work on a slope is that lateral tiles need to be installed on contour at a very precise grade.

Conventional tile lines usually run straight, but these curve around the field. It is quite a sight."

The demonstration farm site features a side-by-side-by-side plot of contoured/controlled drainage, conventional drainage, and an area that remains undrained. Water quality and quantity will be measured, along with yield and soil data. The site also features a research plot comparing 15-foot and 30-foot tile spacing and a demonstration of surface drainage with terraces and a grassed waterway.

The workshops at the drainage demo day featured speakers including Kirsten Grant (University of Waterloo); Sid Vander Veen (Land Improvement Contractors of Ontario); Lynne Warriner and McKenzie Smith (Fertilizer Canada); and Dr. Jeremy Meiners (AGREM). In the soil pit, Anne Verhallen (OMAFRA); Peter Johnson (LICO); and Ross Wilson (ABCA) showed participants how field drainage works and the importance of soil health for water infiltration.

The Huronview Demonstration Farm drainage innovation project was funded and supported by dozens of partners, including the Huron County Clean Water Project, the Land Improvement Contractors of Ontario (LICO), Ducks Unlimited Canada, and Ausable Bayfield Conservation Authority (ABCA). This project was also funded in part through the Canadian Agricultural Partnership (CAP), a federal-provincial-territorial initiative. The Agricultural Adaptation Council assists in the delivery of the Partnership in Ontario.



Tier 2 project update

Tier Two Project Update: Maximizing Cereal Rye Cover Crop Management for Multiple Benefits

When should you terminate a cereal rye cover crop before seeding soybeans? Can you improve weed suppression and soil benefits by delaying termination and "planting green"? And is it possible to provide season-long weed suppression with a roller crimped rye mulch to grow no-till organic soybeans?

These are the questions being asked by plots by six farmer cooperators and at two research station sites in the Heartland and Eastern Valley soil and crop regions.

Early results from on-farm sites in Heartland found that biomass increased substantially by delaying termination until time of planting. At the Kenilworth site, where rye was drilled in late October following corn silage, biomass was 9.5x greater when left to grow until planting vs. spraying in mid May (Figure 1). Soybean stand counts will be performed in the coming weeks and yield compared at the end of the season on these replicated, field-length trials.

Figure 2. Cereal rye being roller crimped at flowering and soybeans seeded near St Marys, Ontario on June 8, 2019

At the organic sites evaluating cover crop-based no-till soybeans using a roller crimper, the cool spring has delayed progress. Rye needs to be in full flower to crimp properly. Normally, this happens at the beginning of June for early-seeded rye, but a cool spring delayed flowering by more than one week. One site near St. Marys was roller crimped and seeded on June 8 (Figure 2) and a site near Drayton (Figure 3) was seeded into standing rye on the same day and will be

Figure 1. Cereal rye cover crop at Kenilworth site on May 22 (left) versus June 7, the day of planting (right).

crimped shortly. The small plot site at the Elora Research Station was crimped on June 11 and seeded on June 12.

Achieving a thick and uniform stand of rye is essential to making cover-crop based organic no-till soybeans work. A few early lessons have included: good background soil fertility is important, but too much nitrogen can lead to lodging; seeding rye in mid to late September is key; and achieving a good stand can be more challenging in heavy textured soil.

To learn more about this OSCIA Tier 2 project, check for updates in future Heartland SCIA newsletters, look out for summer twilight tours, and visit the cover crops page of www.fieldcropnews.com.

~submitted by Jake Munroe

Figure 3. View behind drill after soybean seeding at site near Drayton, Ontario on June 8, 2019

Before the Plate

We all know the statistic: less than 2% of Ontarians are farmers, and the gap between the people who grow food and the people who are eating the food is growing wider. Heartland Soil & Crop has taken on the challenge to help educate the consumers of Ontario by promoting the documentary *Before the Plate* throughout the region.

"Before the Plate follows John Horne, one of Canada's most renowned chefs, on an epic journey as he follows each ingredient from one plate of food back to the farms they came from. Beginning in John's prestigious restaurant Canoe, located on the 54th floor of a downtown Toronto highrise, John's journey takes him from the busy, urban city to the rustic, rural origins of his ingredients. During his voyage, John investigates some of the most pressing issues facing farmers today, and discovers what it takes to produce food in a rapidly evolving agricultural landscape. Enjoy a rare look at today's food system, as the worlds of agriculture and cooking come crashing together in one mouth-watering Canadian food story." (www.beforetheplate.com/about)

Huron County SCIA hosted a screening at The Cowbell Brewery in Blyth on April 4, and Waterloo SCIA hosted a screening June 9, followed by exclusive dinner hosted at Uptown 21 and Harmony in Waterloo. Wellington SCIA is currently planning a screening in the summer of 2019.

The film is produced by Dylan Sher, who grew up in the Toronto area and enrolled at the University of Guelph to study agriculture. "I came with one set of ideas about how food was produced," he told the crowd at the Waterloo SCIA AGM in December, "but I quickly learned that everything I thought I knew about farming was wrong." After spending some time getting to know his classmates—the ones who actually grew up on farms and had first-hand knowledge of agriculture production, and some part-time jobs on local farms, Sher knew he had to do something to help educate urban consumers about modern food production in Ontario.

Find out more about the film at www.beforetheplate.com or watch for one of many screenings being held across rural Ontario.

Ontario Agricultural Topsoil Sampling Program

Soil staff of the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA) are carrying out a reconnaissance topsoil sampling project covering the province's agricultural soils. Comprehensive and current data on soil properties for the various agricultural soil types found across Ontario is lacking or out of date. Through this initiative, our goal is to better understand the variability and range of regional agricultural topsoil properties (such as pH, texture (sand, silt, clay %) and organic matter) by collecting up-to-date soil information throughout the province. This information will help OMAFRA modernize existing, historic provincial soil maps, inform best management practices, and develop soil health and stewardship related initiatives.

This project has the support of the University of Guelph (U of G), the Ontario Soil and Crop Improvement Association (OSCIA), and Agriculture and Agri-Food Canada (AAFC). Researchers and students from the University may also support OMAFRA staff in the collection of soil samples.

Land Access, Personal and Business Information:

Access to private land is needed to complete this initiative. Therefore, OMAFRA respectfully seeks your permission to enter your property(s) to examine soil features in greater detail and obtain soil samples. This land entry will only occur after permission has been granted by you, the land owner (or official designate). Please become a partner in this collaborative effort by granting access to your land parcel(s).

No personal information (e.g. landowner names, addresses) is being collected and retained by OMAFRA staff. Any business information asked by staff (e.g. questions on cropping rotations, tillage methods) is being collected in accordance with the requirements of the Freedom of Information and Protection of Privacy Act for the purposes of the project. The information obtained from the soil sampling, including analytical data, may be made available to the collaborating organizations, namely U of G, OSCIA, and AAFC, for specific soil related research they may be undertaking.

How we conduct our work:

Field staff members from OMAFRA and/or the U of G will be conducting the on-site field sampling. Great care will be taken to avoid any damage to fields and crops. Field entry will primarily be on foot, respecting crop and livestock management practices, biosecurity measures (e.g. cleaning footwear before leaving a property), and any other measures requested by a landowner.

Small holes (approximately 15-30 cm deep) will be dug using hand tools (augers or shovels) to observe the depth of the topsoil and take a sample. The hole is then backfilled with the excavated material.

Site Selection:

Field sampling sites are being selected using a computer software program that uses landscape characteristics such as elevation, slope, general soil types and satellite data. This method allows us to identify the broadest range and variety of agricultural landscapes across Ontario in which to sample. The number of soil sample sites per field will vary depending on the landscape but will generally consist of 3 pits per field to capture the variability in field characteristics.

If you have any further questions, require additional information, or if you wish to receive lab testing results of any samples collected from your property(s), please feel free to contact us at:

ontariosoilsurvey@ontario.ca

226-962-4732

Conservation Corner

Huron County renews commitment to improving water quality

Septic system upgrade category added to the Huron Clean Water Project

The County of Huron has announced its continued support for the Huron County Clean Water Project with a $400,000 allocation in the 2019 budget. The program provides financial and technical assistance for on-the-ground projects that improve surface and ground water quality, conserve soil and increase tree cover.

Service delivery is provided by Maitland Conservation and Ausable Bayfield Conservation. To learn about grant rates and eligible projects phone Maitland Valley at 519-335-3557 or Ausable Bayfield at 519-235-2610 or toll-free 1-888-286-2610.

The grants have helped people complete more than 2,800 projects since 2004. Combined with support of local landowners, the value of completed projects is more than $10 million over the program's history and about $1 million worth of projects are completed in a single year. That's good for water quality and the economy, according to staff delivering the program. The program's success has three pillars: stable funding from the county; water and soil expertise; and – most importantly – landowner participation. "The program wouldn't exist if landowners didn't get involved," said Kate Monk, Manager of Stewardship, Land and Education at Ausable Bayfield Conservation Authority (ABCA). "Huron County has some of the most productive farmland in Canada. Grants help people be good stewards while making a living." The stable funding helps people complete projects on a time frame that's affordable. "People might install an erosion control project after wheat in the crop rotation, plant trees along a creek another year, and decommission unused wells they come across," said Doug Hocking of Maitland Conservation.

Anyone with property in the county is eligible to apply. Conservation authority staff complete the paperwork with the applicants and present the proposals to a review committee. Grants cover up to 50 per cent of project cash costs and can be combined with other funding sources. "These projects preserve valuable topsoil; keep nutrients on the land and out of our creeks, rivers, and lake; control erosion; and provide economic benefits too," he said.

The grant categories include cover crops, erosion control, well decommission or upgrades, barn yard runoff control, manure storage decommission, forest management plans, fencing livestock out of watercourses, tree planting (plantations, windbreaks, watercourse buffers), and wetlands. The new category this year is septic system upgrades for systems that contaminate water quality, especially along Lake Huron and near municipal wells. The category is limited to only 20 projects so people are advised to apply early.

Huron County property owners have, with the support of the county initiative: planted more than 580,000 trees (more than 800 acres); decommissioned more than 550 unused wells; planted more than 20,000 acres of cover crops (more than 30 square miles); established 180 kilometres of windbreaks; completed more than 220 erosion control projects; decommissioned more than 90 liquid manure storages; upgraded more than 380 private wells; and completed more than 120 forest management plans.

To learn more visit abca.ca, mvca.on.ca, or huroncounty.ca.

County of Huron Clean Water Project – Completed Projects (2004 – 2019)	
Total reported value of completed projects	$10 million+
Number of completed projects	2,800+
Number of trees planted	587,000+
Acres of trees planted	840+
Windbreaks planted (km)	186
Cover crops planted (acres)	20,000
Cover crops planted (square miles)	30 miles^2
Watercourses buffered (square kilometres)	75 km^2
Wells decommissioned	553
Wells upgraded	389
Manure storages decommissioned	94
Community projects	35
Erosion control projects completed	221
Wellhead protection	380+
Clean water diversion projects	110
Fragile land retirement projects	760+
Septic projects	100+
Forest Management Plans	128
Constructed wetlands	16

Mental health resources

Dr. Andria Jones-Bitton, a researcher from the University of Guelph studying mental health in Canadian agriculture, was a guest speaker at the 2019 OSCIA AGM in February. You can read more about her presentation in the OSCIA newsletter, included in this publication.

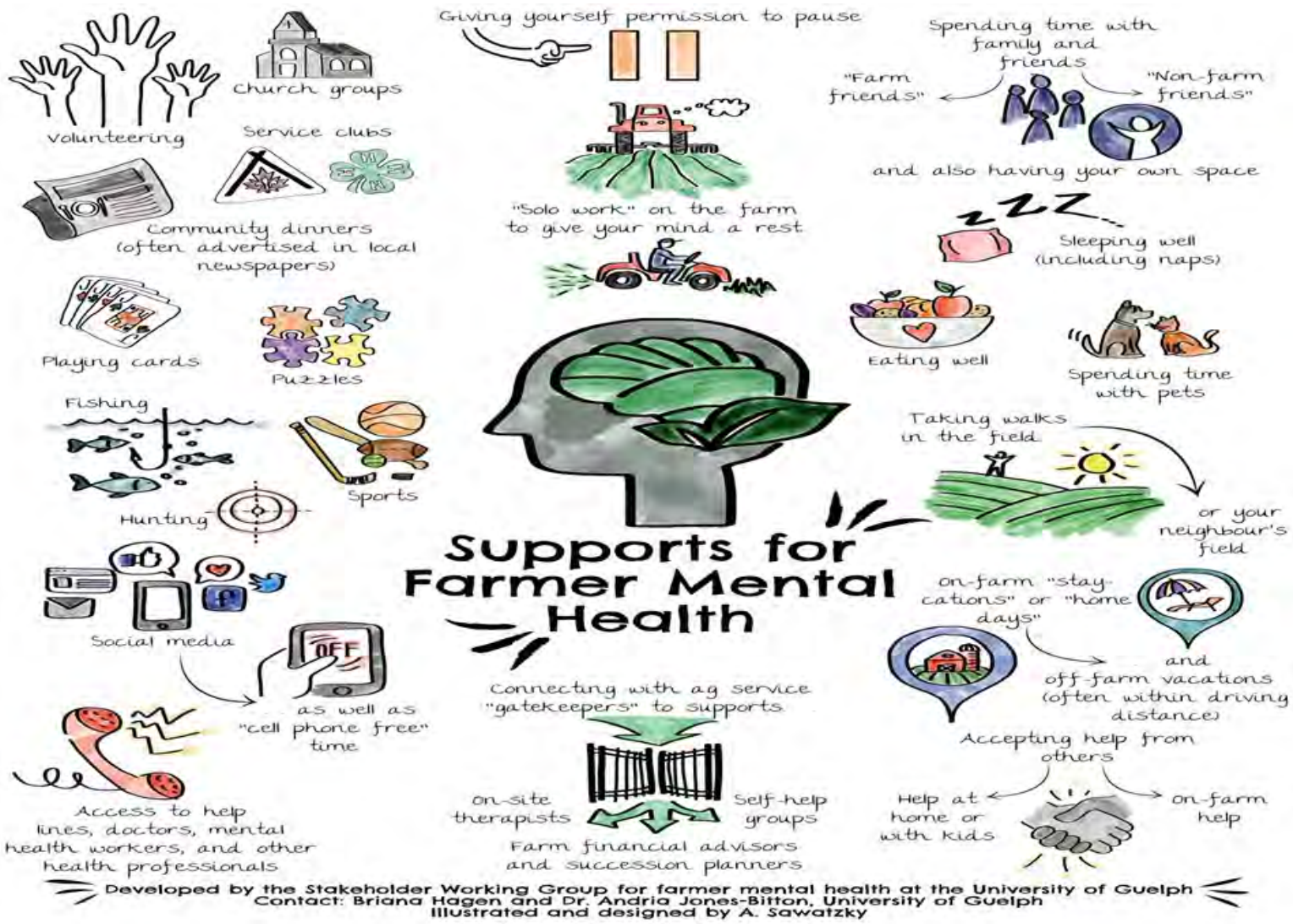
When asked what "stressors" existed for farmers, the unpredictability of the weather was something that came up time and time again. Weather is not something we can control, but as this spring planting season has reminded us, impacts us greatly.

We recognize that incredible toll that the weather has taken on our community over the past few months.

Here are a few resources to reach out to if you or someone you know is struggling:

The Do More Agricultural Foundation www.domore.ag

Mental Health for Farmers First Aid Kit
www.omafra.gov.on.ca/english/about/mental-health.htm



Dr. Andria Jones-Bitton shared this graphic at the OSCIA conference in February. Read more about her research on mental health in agriculture and her presentation in the OSCIA newsletter.



CROP TALK

Volume 19, Issue 2 OMAFRA Field Crop Specialists — Your Crop Info Source June 2019

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Visit FieldCropNews.com for current field crop information through the season!

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Sebastian Belliard, Soil Management Specialist
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Anne Verhallen, Soil Management Specialist - Horticulture Crops
Joanne Handley (A), Manager

Editor: *Meghan Moran, Canola and Edible Bean Specialist*
Compiled by: Julie Desrosiers

A Good Time to Review Resistance Management Strategies for Bt Corn

Tracey Baute, Field Crop Entomologist, OMAFRA

Over the last few years a number of corn insect pest populations have developed resistance to at least one Bt trait used in corn hybrids. From western bean cutworm (WBC) resistance to Cry1F, corn earworm (CEW) resistance reported to Cry1Ab, Cry1A.105 and Cry2Ab2, to the latest confirmation of European corn borer (ECB) resistance to Cry1F in the Maritimes. Although companies have moved towards pyramiding multiple traits that control the same pest (mostly targeting ECB or corn rootworm) into their hybrids to reduce the risk of resistance, not all Bt corn hybrids sold have more than one effective trait to control the primary target pest. This is especially true in cases where resistance to one of those traits in the pyramid has already developed. The pyramided hybrid in these cases become essentially a single trait hybrid. There is only one Bt trait, Vip3A, that effectively controls WBC, so no hybrids currently contain more than one effective trait against WBC. And given that Vip3A has no activity on ECB, growers need to select different pyramided hybrids if ECB is their primary target pest.

Refuge strategies have also evolved over time. Single trait hybrids require a 20% structured refuge of non-Bt corn planted in the same field or within 400 metres away to ensure that the target insect population surviving in the Bt corn planting would mate with populations from the refuge planting that were not exposed to the Bt. This reduces the chance of the resistance being passed on to the next generation. As we moved towards pyramided hybrids with multiple traits against the same pest (usually ECB or corn rootworm), the refuge size requirement shrank to 10% then 5% and now as Integrated Refuge for some hybrids, where 5% of the seeds in the same bag are the refuge plants. This is because there were two effective traits which reduced the risk of resistance developing. However, there has been a cost to this transition. Although it does ensure that every grower has planted a refuge, the integrated refuge is not always effective at reducing the risk of resistance, especially for the later season ear feeding pests (i.e. western bean cutworm and corn earworm). It may have also caused growers to have assumed that all hybrids have integrated refuge now, even though their hybrid of choice might only contain one effective trait against their target pest. In the case of the ECB resistance development to Cry1F, single trait hybrids were still being marketed in the shorter season growing regions of Canada and the US. These single trait Cry1F hybrids require a 20% non-Bt structured refuge since they only contain one trait to control ECB. Growers may have also assumed their "two trait" hybrid was safe but in fact contained only one trait for ECB and one trait for rootworm.

Without the 20% structured refuge accompanying these single effective trait hybrids, the risk of resistance was much higher and would evolve much sooner.

One thing is clear, we need to make sure that we are doing everything we can in following resistance management strategies. A few important measures for Bt Corn Resistance Management include:

1. Know which traits are in the hybrids you plant and make sure they contain more than one trait to control your primary pest issue. For many in Ontario, WBC is the primary pest not ECB, even though most pyramid hybrids are targeting ECB. To know how many traits control each pest in your favourite brand, refer to the newly modified Bt hybrid table: http://fieldcropnews.com/wp-content/uploads/2019/05/Modified-Bt-Trait-Table-for-2019-English-with-MOA.pdf
2. Know what the refuge requirement is for the hybrid that you are planting. This is also provided within the table mentioned above.
3. Avoid planting hybrids that only contain one trait against your primary target pest. If you do plant a one trait hybrid for your pest, ensure you use the correct amount of refuge to accompany it and rotate away from using the same trait year after year. Rotate from that Bt trait to foliar insecticides, and rotate the chemical families of your foliar insecticides too. Relaying solely on one method of control increases the risk of resistance.
4. Scout for any unexpected damage, no matter what hybrid you plant. A minor amount of feeding (i.e. small holes and scrapes on the leaves or tassel) is expected. The pest has to do a little feeding to be exposed to the Bt toxin. But if the feeding damage continues and progresses from small holes to larger holes, scars, tunnels etc. then report it. Check the Agronomy Guide for Field Crops, Field Crop News, Pest Manager App and the Canadian Corn Pest Coalition website to see what the damage looks like for your target pest. In the case of ECB, refer to the Signs of ECB Activity and Damage document: http://fieldcropnews.com/wp-content/uploads/2019/05/Signs-of-ECB-Activity-and-Damage-to-Scout-for-in-Bt-Corn-Fields.pdf
5. Report any unexpected damage to your extension entomologist and seed company agronomist. We can then investigate further, take samples and test whether resistance has occurred. Reporting right away enables us to scout while the pest is still present and help the grower implement the correct additional measures needed to eliminate the resistant population before it spreads. Simply applying a foliar insecticide may not be the correct measure to take.

Bt corn has been a valuable tool for pest management for decades. Following all of the necessary steps required in resistance management will ensure we have this tool for years to come.

Managing Alternative Forages

Christine O'Reilly, Forage and Grazing Specialist, OMAFRA

Reports indicate widespread alfalfa winterkill due to several thaws that reduced snow cover and created ice in fields. Many stands were either patched or put into an annual forage. Here are some tips on managing alternative forage crops.

First cut is usually (but not always) 60 days after planting

Table 1. Harvest guidelines for alternative forage crops

Crop	Planting to 1st cut (days)	Cutting Interval (days)	Cut Height	Stage for maximum quality	Stage for maximum yield
Red clover	60-70	30-35	5 cm (2 in.)	Late bud to 20% bloom	After 20% bloom
Italian (or annual) ryegrass	Head emerges at 55-60	30-40	10 cm (4 in.)	Before boot stage	Head emerged
Cereals	For "grass": 45-50 For whole-crop: 60	Highly dependant on summer rainfall	7-10 cm (3-4 in.)	Before boot stage	Heads emerged to soft dough
Cereal/pea	45-50	Highly dependant on summer rainfall	7-10 cm (3-4 in.)	Before cereal boot stage	Emergence of head complete (cereal)
Sorghum-sudangrass, forage sorghum	60, but crop must be >65 cm (26 in.) tall	Wait until crop is >65 cm (26 in.) tall	10 cm (4 in.)	Boot or early heading	Multiple-cut system; see max quality.
Millet	55-60	Pearl and Japanese: 30-35 Foxtail and Proso do not regrow very well	Pearl and Japanese: 10 cm (4 in.) Foxtail and Proso: 5 cm (2 in.)	Pearl and Japanese: 36 in. Foxtail and Proso: before heading	Cut for quality

Red clover harvested for quality has more rumen by-pass protein and NDFd than alfalfa. Quality does not decline as quickly as alfalfa.

Italian ryegrass prefers cool temperatures and consistent rainfall. Some producers graze the lower yielding mid-summer cut rather than running harvesting equipment across the field, but this requires grazing infrastructure.

Cereals provide options. Maximum protein content and fibre digestibility occurs before boot stage. Producers looking for more yield and starch content could wait until soft dough stage and ensile the crop to get something that feeds out more like corn silage than haylage. Producers could plant a warm-season grass after harvesting the cereal, provided there is enough soil moisture for germination.

Grasses lose their quality faster than legumes, so any time a mix is grown it should be harvested when the grasses are at the ideal maturity. In this case, cereals are grasses!

Don't make dry hay

Red clover takes a long time to dry which increases the risk of mouldy or dusty hay. Clover silage is generally very dark in colour, so can look like spoiled alfalfa. It resists protein breakdown during the ensiling process and has about 40% less non-protein nitrogen than alfalfa.

Cereals can be made into dry hay but take longer to dry than perennial grasses. Peas wilt more slowly than cereals, so producers should pay close attention to the crop's moisture content when working with mixtures.

Just like ensiling alfalfa or corn, the correct moisture content (Table 3), proper packing density, and a good seal are critical to preserving alternative forages. Baleage is most successful when crops are put up in dense bales and wrapped with 6-8 layers of 1 mm thick plastic.

Table 2. Suitability of alternative forages for different storage/ feeding methods

Crop	Dry Hay	Baleage	Silage	Green Chop	Grazing
Red clover	difficult	✓	✓		✓
Italian (or annual) ryegrass		✓	✓	✓	✓
Cereals		✓	✓		✓
Cereal/pea		✓	✓		✓
Sorghum-sudangrass		✓	✓	✓	✓
Millet	Foxtail or Proso	✓	✓	✓	✓

Table 3. Correct moisture content for silage crops.

Type of Silo	Moisture Content	Dry Matter Content
Horizontal silo (bunker or bag)	65-70%	30-45%
Tower silo	62-67%	33-38%
Oxygen-limiting tower silo	55-60%	40-45%
Baleage	45-55%	45-55%

Be aware of possible toxins!
Nitrate poisoning
Except red clover, all the crops discussed here are fast-growing grasses with high nitrogen demands. These crops can accumulate nitrates under certain growing conditions:

- Very high soil levels of nitrogen (i.e. excessive rates of fertilizer or manure, or combinations of these following a legume crop – such as winterkilled alfalfa);
- After the rain that breaks a long dry spell. In this situation, delay harvest by 10 days to allow nitrates to be converted to protein;
- Any condition that kills the leaves while roots and stems remain active (frost, hail, sometimes drought)

If any of the above factors are present, allow crops to ferment for 3-5 weeks before feeding. Be aware of deadly nitrogen dioxide gas around silos.

Prussic acid poisoning
Sorghum, sudangrass, and their hybrids produce prussic acid (hydrogen cyanide) when stressed. To reduce the risk of prussic acid poisoning:

- Do not pasture or green chop stands less than 60 cm (24 in.) tall.
- Do not ensile or green chop sorghum over 76 cm (30 in.) tall for 3–5 days after a killing frost. Silage should be completely fermented before feeding (6–8 weeks).
- Immediately after a frost, remove the livestock from the pasture until it has dried out (usually 6–7 days). If new shoots develop, harvest the field as silage rather than pasture.
- After a drought-ending rain, do not graze animals on new growth.

Red clover can contain high levels of phytoestrogens which can interfere with breeding and early-stage pregnancy in sheep. Grasses and cereals may develop leaf or stem rusts under damp conditions. While rust reduces nutritional value and palatability, it does not produce toxins.

Alternative forage crops can make great feed. The trick is to not manage them like alfalfa.

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Manage Risk in Dry Beans by Testing for SCN

Meghan Moran, Canola and Edible Bean Specialist, OMAFRA

Ontario's dry edible bean producers are top notch farmers. They invest a great deal of time and money in managing this high risk, high reward crop. To keep the scales tipped towards 'high reward', dry bean producers need to know the soybean cyst nematode (SCN) status of their fields.

SCN is now present in 22 counties (Figure 1), including the province's key dry bean producing regions. Recent surveys in southwestern Ontario found 80% of the fields tested were positive for SCN. Unfortunately, SCN will continue to move across the province into previously non-infested fields and counties.

SCN can reproduce on all types of dry beans and may negatively impact yield. Dry bean susceptibility to SCN depends on the market class and may also depend on the variety. While local research conducted to date is limited, we know that:

- **Aduzki** beans are the most susceptible to SCN, more so than susceptible soybean varieties, and should not be grown on infected fields
- **Kidney** and **cranberry** beans show similar or slightly less SCN reproduction compared to susceptible soybeans
- **White** (navy) beans generally display less SCN reproduction than susceptible soybeans, but they are not resistant and there can be large differences between varieties
- **Black** beans appear to be the most tolerant to SCN compared to other dry beans, and are generally much more tolerant than SCN susceptible soybeans
- other types of dry beans, such as otebo, have not been tested locally.

Researchers in North Dakota have conducted several studies on SCN in dry beans which agree with the statements above, although the specific varieties studied are often different than those commonly grown in Ontario. Recent reports from the US have stated that SCN is "a major yield limiting threat to dry beans in Minnesota and North Dakota", and the same is true in Ontario. Local studies on SCN in dry beans have included commonly grown varieties in each of the market classes mentioned above, but extensive research on susceptibility by class or variety has not been conducted. Within the available data, cyst scores for each variety are quite variable from one year to the next and across different trials. The available data does not include yield results.

There are currently no SCN resistant dry bean varieties available, although US researchers have begun breeding for resistance. There are also no foliar or seed treatment products registered in dry beans for SCN management. Chris Gillard, University of Guelph – Ridgetown Campus, has begun evaluating the effectiveness of nematicide seed treatment products on dry beans; the products are registered in soybeans. VOTiVO, ILeVO and Clariva have been tested in controlled environment growth cabinet studies but results have been mixed. Only ILeVO has provided some consistent results in reducing cyst numbers on roots. While the products may have value in dry beans, the growth cabinet trials were not taken to yield and at this time it is unclear if the level of cyst reduction will be meaningful in a field scenario. Attempts at studying the products in naturally SCN-infested Ontario fields produced highly variable results.

SCN symptoms in dry beans will be similar to symptoms in soybeans. Stunting, poor canopy closure, and chlorosis may be evident. Plants may have fewer pods or mature early, and damage may show up earlier in sandy areas.

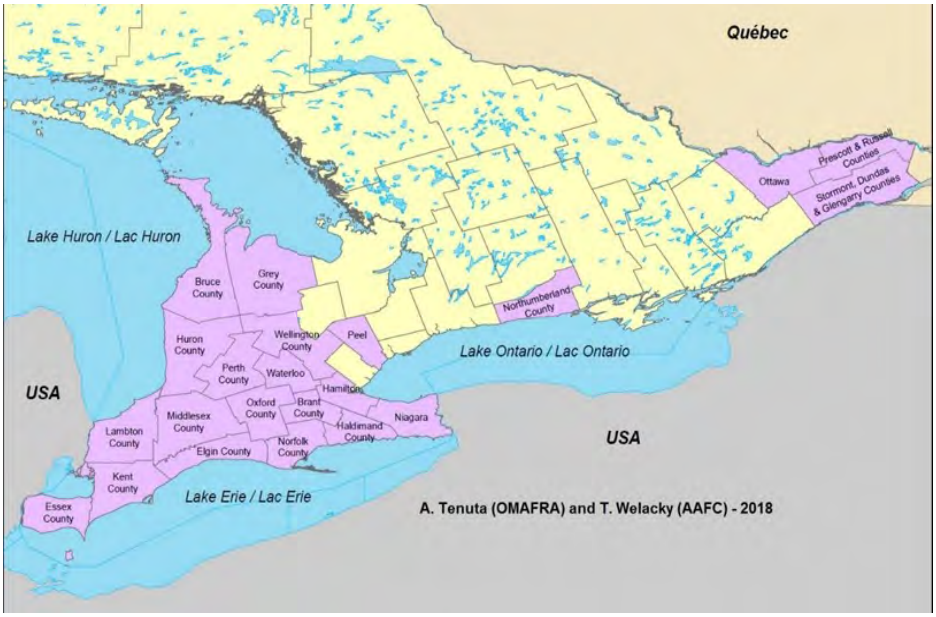

Figure 1. Ontario counties where SCN has been confirmed.

Often there are no above ground symptoms at all. Check plant roots 30 to 45 days after emergence by gently digging up plants, rather than pulling them out. Look for pearl white to yellow cysts that are much smaller than root nodules.

Ontario dry bean growers should manage their risk by testing their fields for SCN. Plan on taking soil samples this fall, shortly before or after bean harvest. Use a soil probe to take samples at a depth of 6-8 inches. Sample directly in the row, before tillage is conducted. The first time a field is checked for SCN, sample areas where SCN is likely to establish first including near the field entrance, along fence lines, areas that have been flooded, and areas of high soil pH (greater than 7).

More information on SCN and soil testing can be found at www.soybeanresearchinfo.com under "Soybean Diseases". While the details are focused on soybeans, the general information on SCN is applicable for dry bean growers.

Interseeding Early Cover Crops into Corn

Sebastian Belliard, Soil Management Specialist, OMAFRA

We all know about the many benefits that cover crops can provide, from erosion control to forage production and overall increased soil health. But there are limited opportunities to establish cover crops in typical Ontario field crop rotations. There is simply not enough time, temperature, or sunlight to get a worthwhile cover crop established after corn or soybean harvest most years, and not enough cereal acres to reap the well-established rewards of summer/fall cover crops.

To overcome the limitations of our short Northern seasons and rotations, some growers are turning to interseeding, the practice of establishing a cover crop in the cash crop during the growing season. This practice will be familiar to those still underseeding clover into wheat, but it is still relatively new in corn and soybeans. In both of those crops there is a window for interseeding in the later reproductive stages, but in corn specifically there is growing interest in the early window. That one is coming up soon, so here are some things to consider if you are going to try interseeding cover crops early into corn.

Timing

Across North America, growers are typically interseeding cover crops into corn between the V4 to V7 stages, though some are stretching that on either end from V2 to V10. In Ontario, interseeding red clover and annual ryegrass has been most successful between V4 and V6. There is a delicate balance to strike between avoiding competition and stress to the crop during the critical weed-free period and establishing the cover early enough to get good growth before the canopy closes and lack of sunlight effectively puts it into standby mode. Although some would argue that corn resents any companions during this period - be it a cover crop or a weed - Ontario research has shown there is no negative impact on corn yields from interseeded red clover or annual ryegrass at the V4 to V6 stage, and research from Cornell University, Michigan State University, Quebec, British Colombia, and South America has found similar results for a range of species.

Another consideration is avoiding having to make an extra pass through the field just for the cover crop. More traffic equals more risk of compaction and crop damage, not to mention the extra costs. Ideally, interseeding would be combined with another previously planned field operation such as side-dressing. Farmers are champion innovators in this space – ask around to see what has worked for others, or make something new!

Species Selection

Interseeding does not change the fact that you can only be successful with a cover crop if you know your goal.

There are several excellent guides and tools for deciding on one or more goals. Once you have clarified your goal and narrowed down the list of species that could help you achieve it, you will need to narrow it further for intercropping by selecting for species that will survive the extended period of shade under the crop canopy. This is often the most limiting factor to success with interseeding into high-yielding corn, and cover crops often look much better from the road than further into the field for this reason.

Throwing Shade

Table 1. 50% and 90% Shade Tolerance Index of selected cover crop species. (Shared with permission from Haden, Yost, and Kuether, Ohio State University - ATI, Wooster)

Cover Crop	50% Shade Tolerance Index	90% Shade Tolerance index
Forage Collard	100.81	45.00
Tillage Radish	85.67	52.30
Balansa Clover	69.91	13.15
Berseem Clover	66.18	13.59
Crimson Clover	64.72	16.93
Hairy Vetch	65.14	22.52
Red Clover	87.13	25.17
Subterranean Clover	60.88	11.81

There isn't a great deal of research on shade tolerance, but what does exist shows that brassicas tend to be relatively tolerant of even heavy shade. Red clover, crimson clover, and hairy vetch perform relatively well (Table 1), but the shade index (biomass under X% shade / biomass at full sun) for legumes is more mixed and declines more rapidly (Figure 1). As for grasses, annual or Italian ryegrass are the top performers, though they can be tricky to manage from a termination standpoint. Tall fescue and orchardgrass have worked well in some studies, but cereals generally do not. It is interesting to note that plant height is not always correlated to biomass.

Establishment

As with almost any seed, you will get better results from drilling or otherwise increasing seed-to-soil contact. More ways to do this have been thought up than could be covered here, but see the links below (or here and here if you are reading online) for some examples.

Of course, Mother Nature also has a say in our success, and germination is dependent on adequate summer moisture. That's not usually a problem in our humid climate, but it may be in some years and adds to the need for proper soil contact.

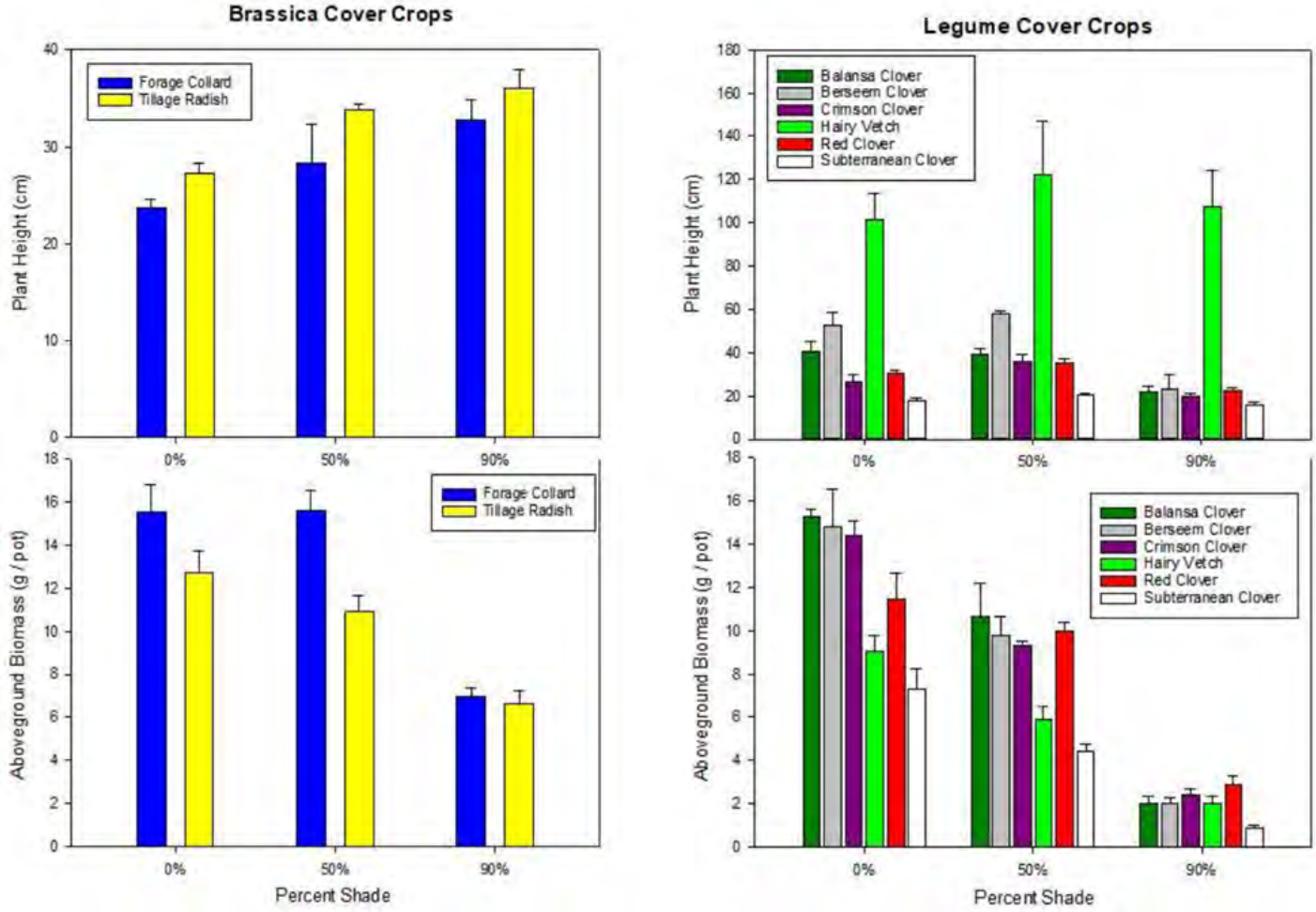

Figure 1. Plant height and above-ground biomass of cover crop species grown under 0%, 50%, and 90% shade. (Shared with permission from Haden, Yost, and Kuether, Ohio State University - ATI, Wooster)

Herbicide Program Compatibility
Many soil-applied residual herbicides can impact cover crop establishment and growth. See the article, "Annual rye grass and clover sensitivity to herbicides" by Mike Cowbrough, OMAFRA Weed Specialist on FieldCropNews.com for specific information. While a good cover crop stand can suppress weeds, you may want to consider a weed control pass before cover crop emergence at the time of interseeding for any weeds which might have escaped the pre-plant pass. A study across the Northeast US found a 31% reduction in weed biomass in October with interseeded cover crops with no impact on corn yield (Youngerman et al., 2018).

Crop Management
Shade from the cash crop limits cover crop biomass, and thus benefit. The following are options for increasing sunlight penetration, though some might incur trade-offs or yield penalties:

- Plant crop rows North-South
- Select a shorter corn hybrid with more upright leaf architecture
- Keep corn populations on the low end
- Increase row spacing
- Avoid harvest methods that smother the cover crop with residue

Low soil fertility, especially nitrogen, may also limit cover crop growth, though this might not be as much of a concern if one of your goals is to scavenge excess nutrients. On the other hand, a growing cover crop provides an excellent place to put manure after silage. An innovative farmer may find a way to interseed a cover crop during manure application.

Stepping Back
As with any practice new to your farm, you should experiment with interseeding cover crops on a small scale. Ignore the thought of "what will the neighbours say" and put it somewhere where you'll see it often. Make sure to walk into the field when you make observations, and don't take any single year too seriously.

While it is possible to establish a respectable cover crop early into corn most years, biomass production is often low in our latitudes and climate. If your cover crop goal is related to biomass, that's a problem. Interseeding cover crops early in the season can work, but it simply cannot substitute for a proper rotation nor provide the full, proven benefits of adding small grains and their cover crop window to a corn-soy rotation.

Additional Resources
Annual rye grass and clover sensitivity to herbicides, by Mike Cowbrough:
http://fieldcropnews.com/2016/04/annual-rye-grass-and-clover-sensitivity-to-soil-applied-corn-herbicides/

Midwest Cover Crop Council – Cover Crop Decision Tool:
http://mccc.msu.edu/covercroptool/covercroptool.php

Equipment Examples:
https://www.scrca.on.ca/wp-content/uploads/2018/04/Interseeding-Case-Study.pdf
http://northeastcovercrops.com/wp-content/uploads/2018/02/Tips-for-Interseeding-Cover-Crops.pdf

Plant Growth Regulators – The Why, Where and When

Joanna Follings, Cereals Specialist, OMAFRA

With new plant growth regulators (PGRs) entering the Ontario market, many are asking, when and where should a PGR be used? First, it is important to know what the purpose of a PGRs is. PGRs can be applied to winter wheat to reduce plant height and increase stem thickness. This reduces the risk of lodging, making managing and harvesting a tall winter wheat crop easier. Additionally, it can also help with reducing harvest losses that come from lodging. Although PGRs are a helpful tool, they are not necessarily needed every year or in every field.

The use of a PGR will bring the most benefit to a winter wheat crop when:

- You have an early planted winter wheat crop with lots of growth
- You are growing a variety that is prone to lodging
    - You can determine the lodging potential of your variety by visiting www.GoCereals.ca
- Your winter wheat field has a history of manure applications and is highly fertile
- You are implementing an intensive wheat management program (i.e. aggressive nitrogen rates) and have a high yield potential

The use of a PGR has less value when:

- Your crop was planted late and too much growth is not a concern

- You are growing a variety that is **not** prone to lodging
- You are not implementing an intensive wheat management program (i.e. aggressive nitrogen rates) and you have a low yield potential

Generally speaking, PGRs are not a tool for improving your plant population and creating more straw. On a year such as this when the crop was planted late, the spring was cool and wet and nitrogen applications were delayed, lodging is generally not a concern and therefore, a PGR is not necessary or in many cases, is not economical. However, if the winter wheat crop had been planted early, had many tillers going into winter, and the spring was warm and promoted lots of growth, a PGR may have been a tool to consider if trying to manage lodging.

Currently there are a number of PGRs available in Ontario. Selecting a PGR for your field is often based on whether you are able to get the product on according to its labeled application window and whether you want the PGR to reduce lodging by reducing plant height or by promoting fall growth which results in a more robust plant.

Ethephon (Ethrel)
Ethephon, commonly known as Ethrel, is a PGR that when applied to wheat releases ethylene into cell tissue. Ethylene then causes a reduction in cell elongation and crop height which is effective in reducing lodging.

The application window for Ethephon can be quite tight, with the ideal timing being between GS37 to 45 (flag leaf just visible up to boot just swollen). If you miss the application window and more than 10% of the awns have emerged Ethephon cannot be applied. Applying Ethephon outside of the ideal application window can cause crop damage and ultimately reduce yield. That is why it is important to scout your fields regularly as the optimal timing approaches to ensure the product is applied at the appropriate time.

Chlormequat chloride (Manipulator)
Gibberellins are plant hormones that regulate various developmental processes, including the stimulation of cell elongation and cell division which gives plants their height. Chlormequat chloride, commonly known as Manipulator, is a plant growth regulator that inhibits the early stages of gibberellin production in winter wheat. What this means is that the application of chlormequat chloride to your wheat crop results in a reduction in plant height while the stems are thickened. This in turn results in a reduction in lodging.

The full application window for Manipulator is GS 12-39. However, the ideal timing is GS 30-32 (stem elongation - 1st to 2nd node). Additionally, chlormequat chloride can be applied when temperatures reach as low as 1°C making it ideal for when spring temperatures dip down at night. The application window for chlormequat chloride is earlier and longer than ethephon and may be better suited for your operation if a tight application timing is a challenge for you.

Gibberellic acid, GA3 (Proliant)
Gibberellic acid (Proliant) is slightly different from some of the other types of PGRs available. Unlike other PGRs, gibberellic acid is used to enhance early growth in winter wheat rather than hinder it. Gibberellic acid elongates plant cells and encourages cell division. The result is more robust plants that can handle stress (i.e. cold temperatures and drought).

Gibberellic acid can be applied up to GS30 (stem elongation). However, the biggest benefit has come from when it is applied in the fall because gibberellic acid is generally used to promote early growth of the crop. While the early growth of the plants is enhanced, lodging is not a concern as long as it is used at the correct time.

If choosing to use a plant growth regulator, always follow the label for application recommendations.

Re-cap:

Product	Application Window	Ideal application stage	Function
Ethephon	GS 37 - 45	GS 37 (flag leaf)	Reduces cell elongation and plant height
Chlormequat chloride	GS 12 - 39	GS 30 - 32	Reduces cell elongation and plant height
Gibberellic acid	Up to GS 30	Fall application	Encourages cell division, resulting in a more robust plant

Trinexapac-ethyl
Trinexapac-ethyl is a new PGR that will shorten the internodes in wheat which ultimately results in a reduction in lodging. Trinexapac-ethyl will likely be available in 2020.

References:
Ethrel Label
Manipulator Label
Proliant Label

Heartland and Eastern Valley Soil and Crop Tier Two Project, 2018-2020: Pushing the Management of Cover Crop Rye

Jake Munroe, Soil Fertility Specialist – Field Crops, OMAFRA

Achieving sufficient biomass from cover crops is essential to reaping their soil benefits. Dr. Humberto Blanco, Professor of Soil Management and Applied Physics at University of Nebraska-Lincoln, spoke recently at the University of Guelph about his cover crop research. He concluded that when cover crop biomass is less than 0.5 ton/acre (see Figure 1), benefits – such as improved soil structure and water infiltration – are rarely seen. Weed control benefits may also be enhanced by extra cover crop growth. Given the short growing season in Ontario and sometimes limited opportunities to integrate cover crops in the rotation, special management may be required to hit that target. That is the motivation behind the Tier Two project by Heartland and Eastern Valley SCIA regions.

Figure 1. Cereal rye one day after planting soybeans "green" in a termination timing trial (right). Rye biomass was just over 0.5 tons/acre. May 24, 2017, Brant County.

In Nebraska, as Dr. Blanco shared, strategies to increase cover crop biomass have included earlier planting, aerial seeding and later termination. Cover crop species also plays an important role. As in Nebraska, one of the hardiest and most versatile cover crops in Ontario is cereal rye. On-farm Brant County trials over the past two years have shown that delaying cereal rye termination in spring by two weeks (until planting) increases biomass over four times – from 0.2 ton/acre to 0.8 ton/acre of dry matter. Also, the "plant green" treatments yielded the same as soybeans planted into early-terminated rye.

Over the next two years, across eight on-farm sites and two research stations, Heartland and Eastern Valley SCIA regions will be further evaluating strategies to maximize cereal rye cover crop benefits ahead of soybeans. The OSCIA Tier Two project has two components: first, it will evaluate the termination timing question for cereal rye before soybeans by comparing no rye to early and late-terminated rye; second, it will compare a cover crop-based, herbicide-free no-till system with a traditional soybean production system. In the second part of the trial, cooperating farmers will use roller crimpers to terminate rye and create a thick mulch into which soybeans will be planted.

The cover crop based no-till system is already being used successfully by a handful of innovative organic farmers in the province. One such farmer, near St. Marys, achieved a 50+ bushel/acre soybean yield in 2018 across a 100-acre farm. By seeding rye early and heavily enough the previous fall, he grew a thick, weed-suppressive mulch (Figure 2). Shortly after using a roller crimper to kill the rye and lay it down flat, he planted soybeans, using RTK, at 15-inch spacing. While there were weed escapes in parts of the field (Figure 3), overall the rye did an excellent job suppressing weeds throughout the season (Figure 4). The Tier Two project will be the first replicated trial in Ontario to evaluate the cover crop-based, herbicide-free no-till system – four out of nine project sites will focus on this comparison in 2019.

Figure 2. Cereal rye mulch, shortly after roller crimping and planting. The critical biomass for sufficient weed control is considered to be 8,000 lbs/acre. This field had 8,600 lbs/acre. May 30, 2018, Perth County.

Figures 3 and 4. Weed escapes in part of the organic no-till field (Fig. 3, left) and a weed-free portion of the field (Fig. 4, right). August 13, 2018, Perth County.

Several different measurements will be taken throughout the season at each of the replicated trial sites. Cover crop biomass will be measured (Figure 5), and soybean stands estimated. Soil nitrate samples will be taken at the time of soybean planting and soil temperature and moisture will be monitored at the Elora research station plot from April to harvest (Figure 6). Weed abundance and species counts will be done at critical time points during the season. Soybean yield will be measured using weigh wagons and calibrated yield monitors.

Figures 5 and 6. Square foot sample of rye biomass, which is collected, dried and weighed to contribute to a per acre biomass estimate (Fig. 5, left). May 30, 2018, Perth County. Photo of soil temperature and moisture data loggers at the Elora research station plot (Fig. 6, right). April 23, 2019.

The overall goals of the project are to:

- Find out how to minimize risks to yield and learn about weed impacts in “plant green” soybeans
- Compare cover crop-based no-till to tillage-based organic soybean production practices

To learn more and get in-season updates, visit the cover crops page of www.fieldcropnews.com, watch out for summer twilight tours in Heartland and Eastern Valley regions and look for the OSCIA Crop Advances report at the end of the year.

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OSCIA PROVINCIAL NEWSLETTER

June 2019 Edition

Message from the President – Les Nichols

Welcome to the 2019 crop season. Certainly, as I write this in late May, it would be an understatement to call it a challenging planting season! As of May 24, there is still a significant portion of the corn crop still to plant and very limited if any soybeans in the ground. The winter wheat crop ranges from good to very poor. In true farmer optimism, I am sure the crop will all get planted, hopefully by the time you receive this newsletter!

The program staff at Guelph are very busy working through a significant number of applications to the recent Canadian Agricultural Partnership intake. Applications are still under review, but decisions are anticipated to be released by July 10th. Stay tuned for dates for future intakes of the Partnership. I would certainly encourage you to have a look at the Partnership guidelines that are available on the OSCIA website and have your workshops completed and your projects planned for application on the next intake. I would also encourage you to check the website on a regular basis and sign up to the list serve for updates and announcement of other programs. (https://www.ontariosoilcrop.org/upcoming-events/)

As you look through this newsletter, I encourage you to take notice of the many field days, tours, and other events that your local and regional Soil & Crop Associations are planning for the coming months. These events are always a great learning experience and a great social event.

It is important to remember the real goal and value of OSCIA and your local Soil & Crop organization – "*Farmers actively seeking, testing and adopting optimal farm production and stewardship practices*". Those on farm trials and field level demonstrations are still the basic and major priority of the membership. We are certainly fortunate to have an excellent group of OMAFRA field staff across the province that support these field projects, but it is the time and effort of our farmer members that make these field level trials and demonstrations happen.

Most important of all as you work through another stressful and challenging crop season is to look after your health, both physically and mentally. Crop & livestock production can be dangerous. Make it a farm priority to work safely regardless of the workload. Taking unsafe shortcuts to try and save a few minutes just isn't worth the risk. Your family is counting on you to come home! Also, your mental health is just as important as your physical well being! Unfortunately, there still seems to be a stigma to asking for help with a mental issue and even more unfortunate that some of us have witnessed what can happen when warning signs are ignored.

Hopefully by the time you get this newsletter all the crop is in the ground and doing well. I look forward to seeing you at upcoming Soil & Crop events this summer. Take time for family and friends and work safely.

Les Nichols, OSCIA 2019 President

Nomination forms available on the OSCIA website – click on "Association/Soil Champion Award"

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

In this Issue

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

OSCIA Association Development Update

With several new skills development resources in place and membership engagement noticeably growing, continuing to increase engagement remains a priority for the Ontario Soil and Crop Improvement Association (OSCIA). The positive decisions made by its Board of Directors to offer skills development training is an outcome of listening to what the local associations needed and acting upon it.

The local and regional secretary treasurer training continued in 2018 with a strong focus on addressing many common challenges that were identified through earlier surveys. Participants found the training to be relevant and helpful in fulfilling their roles.

As technology evolves and time becomes the 21st century's most precious commodity, more and more organizations are turning to videos for corporate learning and training. With the support of the Canadian Agricultural Partnership (the Partnership), OSCIA is going to do just that.

"Through the Partnership, we are providing the knowledge, tools, and training that the agriculture sector needs to succeed", said Marie-Claude Bibeau, federal Minister of Agriculture and Agri-Food. "The Government of Canada is pleased to invest in accessible and practical methods of delivering resources to support future agriculture leaders in Ontario."

"Our government is committed to removing barriers for our agri-food sector to grow and be more competitive in the global marketplace," said Ernie Hardeman, Ontario's Minister of Agriculture, Food and Rural Affairs. "Through the Canadian Agricultural Partnership, we're supporting industry efforts like this to develop and train the agriculture sector leaders of today and tomorrow."

OSCIA's goal over the next two years is to create a series of training modules in video format ranging from 5 to 15 minutes in length that target membership recruitment and board governance. While meeting the needs of more than 50 local and regional executive boards, this cost-effective initiative will give the association the ability to keep its volunteers engaged in skills training, provide a consistent message, and accommodate different learning styles.

Through support from the Partnership, OSCIA will receive up to $35,300 to complete this project.

The training modules will not replace in-person training sessions in all situations but will be used as an additional skills development resource. Local and regional associations will be able to access the training and course content from anywhere, at any time through OSCIA's website. The outcomes of this project are to have the ability to keep volunteers engaged and trained, reach a larger audience, provide a consistent message and have a product that can be effectively utilized in a group setting or by single individuals.

Grassroots is a big part of our organization and it truly was reflected in all the great work that has been done this past year. We are looking forward to continuing our initiatives with the membership and growing as a team.

Written by Brittany Roka, Association Development Advisor

Don't Miss Out on Your OSCIA Plot Signs

To keep the momentum going and grow the brand, OSCIA's 18-inch x 24-inch plot signs are available at a reduced rate of $5.00 for a limited time. The sign not only proudly displays OSCIA's brand but also allows individuals the ability to customize the sign based on the plot treatment in their field.

For those of you who are interested in purchasing OSCIA's Plot Signs, please contact the Executive Assistant at (519-826-3152) or avandepeer@ontariosoilcrop.org

OSCIA Apparel

OSCIA apparel is available at cost through the provincial office – please contact the Executive Assistant to place your order: (519-826-3152) or avandepeer@ontariosoilcrop.org All available items, pricing, order form and sizing charts are available on our website: https://www.ontariosoilcrop.org/association/association-membership/resources/

Changing the Conversation About Mental Health on Canadian Farms

Farming is a high stress profession—that's something we all know. The impact of stressors such as bad weather, fluctuating commodity prices, soaring input costs, and an increased level of scrutiny by consumers who aren't necessarily well-versed on how their food is produced, can all take a toll on primary producers. But when it comes to understanding how that stress affects the mental well-being of farmers, it's not something we know a lot about or, quite frankly, talk about. But one researcher at the University of Guelph is changing the conversation, bringing the issue of farmers' mental health to the forefront.

Dr. Andria Jones-Bitton, an associate professor of epidemiology from the University of Guelph, first became interested in the topic of mental health in Canadian agriculture in 2015, and when she looked at the literature, she realized there hadn't been much research into this issue. So, she initiated a study that surveyed more than 1,100 farmers from across Canada. Her research showed that farmers were highly susceptible to mental health issues and it was approaching a crisis point.

"The research shows that 45% of farmers report that they have a 'high level' of stress," says Jones-Bitton, who was a guest speaker at the OSCIA's annual conference. As well, her research showed that farmers rated low in resilience indicators, with more than 2/3 scoring lower than the average US population. "When resilience is low, and stress is high, it can lead to anxiety and depression," says Jones-Bitton. Her research showed that 58% of farmers report a high level of anxiety and 35% meet the criteria for depression. "We definitely have a problem in agriculture," she says. "Many are feeling helpless and hopeless." Poor mental health can negatively impact family, lead to burnout and emotional exhaustion, have an impact on the quality of their work and on the welfare of their livestock, as well it can lead to serious health issues.

Jones-Bitton says resilience is something that can be learned, by first acknowledging that there is a problem. "We need to change the culture of talking about mental health in agriculture." Integrating practical wellness strategies into a farmer's daily routine can be very beneficial, says Jones-Bitton. Examples include getting adequate sleep, reaching out to family and friends, eating well, taking a break from the farm, getting involved in off-farm social activities and accepting help from others. But she says it's also important to emphasize that getting professional help—from a doctor, therapist or psychologist may also be necessary. "It's an illness, not a character flaw," she says.

https://www.ontariosoilcrop.org/association/association-membership/resources/ for resources on Mental Health.

Written by Mary Feldskov, Heartland Regional Communication Coordinator (RCC)

Welcome New Provincial Directors

In 2019 OSCIA welcomed two new Provincial Directors, Paul Hagey (East Central) and Andy van Niekerk (Georgian Central).

Paul Hagey has been the farm manager at White Feather Farms Inc., Durham/Oshawa, for almost 18 years. As the farm manager, Paul grows corn, soybeans and wheat. White Feather Farms is mainly a poultry and grain farm, but they also own and operate a country store in Oshawa. Paul also owns an operates his own small cash crop farm and seed business.

Paul grew up on a farm in Waterloo region and graduated from computer engineering, Seneca College of Applied Arts and Technology. Paul is a proud husband and father of four.

Paul took a strong interest in soil health 12 years ago and 2 years later joined the local Durham SCIA. Paul has been an active member of Soil & Crop since he joined, serving as director and president on the local board, as well as Director on the East Central regional board for the past 6 years.

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Andy van Niekerk, brings with him over 19 years of agronomic consulting and sales experience, along with 14 years in the financial industry. Combined with his own farm experience, he knows how to help customers improve their bottom line. Andy has recently developed a crop research partnership, testing out new products to be introduced into the Ontario marketplace.

His "farmer-first" attitude in all his dealings and a never-ending curiosity to learn new things gives Andy the edge on delivering new agronomic technology.

Andy is active in local community, serving as director for the local SCIA, as well he is the past president for Georgian Central Region. Andy is also a long-time director on the board of the Innovative Farmers Association of Ontario, serving as their research committee chairperson. He is also an active member of the Ontario Institute of Agrologists (OIA), having served as Chairman of the Huronia Branch, and into his second year on the Board of Directors of the OIA and is the current Treasurer.

Andy's passion for agriculture is contagious and his willingness to assist far beyond our borders has taken him to Guatemala to assist the less fortunate. As they say, "Ask a busy person, and you'll get the job done."
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Crop Advances – On-going Research Resources

Looking for applied research reports? Go straight to Crop Advances on the OSCIA website. Crop Advances is compiled annually by OMAFRA field crop specialists in partnership with OSCIA, industry and academics to inform readers of new technologies, results of field trials and research. It's only available on our website and it's the best place to find information on field crop agriculture.

The reports are categorized into one of six categories (canola, cereal, corn, forage, soybeans and soil) and are presented in pdf format. All reports are conveniently organized by year, some going back to 2003. There is also a section on events that gives readers an overview of accomplishments achieved at FarmSmart, SWAC and similar activities.

Find Crop Advances under "Research and Resources" at: https://www.ontariosoilcrop.org/research-resources/crop-advances/

OMAFRA Field Crop Specialists – Regional Contacts

As part of a long-standing support arrangement the Ministry appoints a member of the Agricultural Development Branch's Field Crop Team to assist each of the 11 Soil and Crops regions. Many have a lead specialist and an alternate.

The Ministry personnel are available to the region and local association to generate ideas for Tier One and Tier Two projects and assist with proper design of applied research projects as well as compiling and interpreting findings.

These folks provide a wealth of technical information and experience and bring tremendous benefit to membership activities.

Please find the names and contact information by region provided below.

Written by Andrew Graham, Executive Director

OMAFRA Field Crop Specialists – Regional Contacts

REGION	OMARFA MAIN CONTACT	ALTERNATE CONTACT
St. Clair	**Albert Tenuta**, Pathologist Field Crops, 519-674-1617, albert.tenuta@ontario.ca	
Thames Valley	**Ben Rosser**, Corn Specialist, 519-824-4120 ext. 54865, ben.rosser@ontario.ca	**Tracey Bauté**, Entomologist Field Crops, 519-674-1696, tracey.baute@ontario.ca
Heartland	**Horst Bohner**, Soybean Specialist, 519-271-5858, C: 519-272-4827, horst.bohner@ontario.ca	**Joanna Follings**, Cereals Specialist, 519-271-8180, joanna.follings@ontario.ca
Georgian Central	**Meghan Moran**, Canola & Edible Bean Specialist, 519-271-0083, meghan.moran@ontario.ca	**Michael Cowbrough**, Weed Management Specialist, 519-824-4120 ext. 52580, mike.cowbrough@ontario.ca
Golden Horseshoe	**Christine Brown**, Sustainability Specialist, 519-537-8305, christine.brown1@ontario.ca	**Jake Munroe**, Soil Fertility Specialist, 519-271-9269, jake.munroe@ontario.ca
East Central	**Ian McDonald**, Crop Innovation Specialist, 519-824-4120 ext.56707, C: 519-239-3473, ian.mcdonald@ontario.ca	**Christine O'Reilly,** Forage & Grazier Specialist, 705-324-5855, Christine.oreilly@ontario.ca
Quinte	**Christine O'Reilly,** Forage & Grazier Specialist, 705-324-5855, Christine.oreilly@ontario.ca	**Sebastian Belliard** (see below)
Eastern Valley	**Sebastian Belliard,** Soil Management Specialist, 613-258-8250, Sebastian.belliard@ontario.ca	**Scott Banks** (see below)
Ottawa Rideau	**Scott Banks**, Cropping Systems Specialist, 613-258-8359 scott.banks@ontario.ca	**Sebastian Belliard** (see above)
North Eastern Ont.	**Meghan Moran** (see above)	**Christine O'Reilly** (see above)
North Western Ont.	**Meghan Moran** (see above)	**Christine O'Reilly** (see above)

FARMSMART EXPO 2019

THURSDAY
JULY 11, 2019
8:30 AM – 4:00 PM

Agenda

1. **Avoiding Tank Mix Errors**- *Jason Deveau and Mike Cowbrough, OMAFRA*
2. **Managing Overwintering Cover Crop Rye in Soybean Production Systems -** *Jake Munroe and Sebastian Belliard, OMAFRA*
3. **Tire Inflation Tips and Tricks: -** *Alex Barrie, OMAFRA and Brent Sisson, Treadright*
4. **Early Season Soybean Decisions for a Late Season-** *Horst Bohner, OMAFRA*
5. **Drainage Decisions -** *Peter Johnson, Real Agriculture and Kevin McKague, OMAFRA*

6a. Alternative Forage Options in A Tough Year!- *Christine O'Reilly, OMAFRA and Donna Hancock, UG*

6b. Cover Crop Roots – Digging A Bit Deeper Managing Unseeded Acers for Future Production - *Anne Verhallen, OMAFRA and Doug Young, UG*

7. **Strip Till Fertility Management 3000 –** *Ben Rosser, OMAFRA*
8. **Evaluation Of In-Field, In-Season Sensors And Application To Ontario Fields -** *Zack Harmer, SoilOptix and Chuck Baresich, Haggerty Creek*

Join us for our annual interactive field day at the Elora Research Station, University of Guelph, 6182 2 Line E, Ariss. Lunch Provided by the Alma Ladies.

Register by Monday July 8th at www.farmsmartconference.com to get our pre-registration fee.
Keep in touch @FarmSmart19
Walk ins are always welcome!

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