

# Heartland Soil & Crop News

September 2018

## Waterloo County SCIA's summer bus trip

Apply now for GRCA funding

Photo by Scott Cressman

**+ OMAFRA Crop Talk | OSCIA News | County Updates**

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## Upcoming events

**November 19-20:** Ontario Young Farmers Forum, held in conjunction with the OFA convention at the Hamilton Convention Centre, for participants age 18-40. See ad on p. 2 or visit [www.jfao.on.ca/oyff](http://www.jfao.on.ca/oyff)

**November 30:** Save the date! Wellington County SCIA AGM, Alma.

**December 6:** Forage Focus 2018, Stratford Rotary Complex. plus remote locations. \$40 includes lunch and conference proceedings. Keynote speaker Michael Hutjens, Professor Emeritus, ANSC Department of Animal Sciences. U of Illinois. Call to register by November 30. 1-877-892-8663



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

Heartland Soil & Crop News is published 4 X a year  
Watch for a monthly e-news in your email inbox!

Visit our website for updates: [heartlandsoilcrop.org](http://heartlandsoilcrop.org)

John Poel | President

Doug Walker | Vice-President

Horst Bohner & Jonna Follings | OMAFRA Reps

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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](mailto:president@heartlandsoilcrop.org).*

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

### Please return undeliverable mail to:

Heartland SCIA c/o Mary Feldskov  
4 Eldale Road, Elmira ON  
N3B2C8

# From the editor

Shorter days, cooler nights, and a few trees showing the first of the autumn colours means that summer is drawing to a close. With the kids back in school, fall fairs, farm shows and plowing matches, and the fall harvest season just around the corner, there is no shortage of activity in rural Ontario.

While your crops were growing in your field, my family was growing too! Over the summer we welcomed our fourth child, six-year-old Elena, through the gift of adoption. While our family adjusted to our new reality, I took a bit of a step back from participating in OSCIA activities and events as a "parental leave", but now that we've settled into a new school year and routine you'll see more of me again.

Over the summer I continued to maintain the Heartland website and the monthly e-news. If you have an email address but aren't receiving our regular electronic communication, or would prefer to receive the quarterly newsletter by email, please let me know.

*Mary Feldskov*

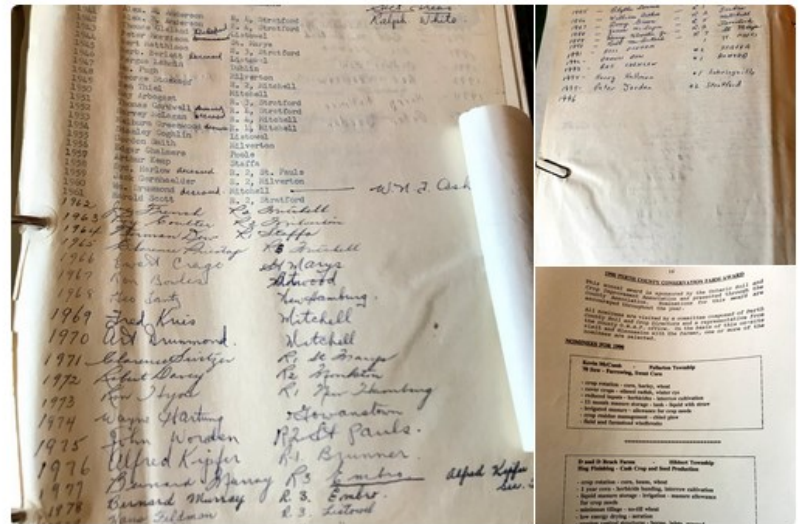
Mary Feldskov, Regional Communications Coordinator  
heartland.scia@gmail.com

## Perth County Soil & Crop had some history on display at their recent Twilight Tour. A blast from the past?



Perth Soil & Crop @perthsoilincrop · Jul 10

Getting geared up for tonight's Perth S&C #TwilightTailgate Agronomy Tour! We found some historic PSCIA minutes, meetings & past presidents from 1940-1999. Come check it out tonight while enjoying #pork on a bun, #innovativeag and cold drinks! Meal starts @ 5pm, Tour @ 5:45pm



### Huron SCIA

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519-868-8946  
sharondevine@tcc.on.ca

### Wellington SCIA

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### Perth SCIA

**President:** Kaye McLagan  
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perthscia@gmail.com

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519-648-2436  
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### Heartland Region SCIA

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johnpoel@quadro.net  
**Provincial Director:** Stuart Wright  
swright@ontariosoilcrop.org  
**Secretary-treasurer/RCC:**  
Mary Feldskov  
heartland.scia@gmail.com,  
519-660-5608





# OSCIA Provincial Director's Message

The Ontario Soil and Crop Improvement Association held its Summer Meeting in the Formosa/Walkerton area August 12-14, hosted by Georgian Central director and OSCIA first vice president Les Nichols and his wife Mary. They did a wonderful job arranging excellent tours for directors and guests from all over Ontario. Next year it will be my opportunity to host this event and I am open to suggestions about interesting locations within driving distance of Guelph. Let me know if you have any great ideas! While it will no doubt be Wellington centered I am not averse to showing off other parts of Heartland which as all of you know is the most beautiful and flawlessly perfect part of Ontario.

For those of you who are not familiar with the Summer Meeting, it is a three day get together. The first day is a meeting of the entire group at the farm or home area of the first vice president. Les put a nice twist on things by inviting everyone to Formosa Park to kick things off with some tours and a delicious supper at the pavilion. Local dignitaries then offered a warm welcome and Harold Rudy, newly retired from OSCIA, brought us up to date with the work he has been doing on his new book *The Soil Fixers*. Supported by the Association, the book chronicles the work our group has done over past few decades, giving a feel for some of the pursuits and personalities of OSCIA. Keep your eyes peeled for an opportunity to purchase the book that would be an ideal speaker gift.

The next day is the meeting doing the business of the Association. While spouses and past presidents go on tour, it is nose to the

grindstone time for directors. Most Executive meetings the directors join by conference call so this is a great chance for face to face discussion and spending a little more time on challenging issues. One issue I will touch on is the upcoming AGM that for the first time will be held in eastern Ontario at Kingston. I will ask Heartland folk to put themselves in the other guys shoes. It will be a long drive there but remember every year in the past the Eastern members have made that same drive to the West so lets show that we can take our turn. Decisions were made to shorten the AGM agenda, in all honesty more as a cost saving measure, but it will have the added advantage of getting people on the road home a little quicker.

The final day of the summer meeting is tours for the whole group that provides chat/networking time and some fascinating information. Some examples of the stops would be a 2000 head beef feedlot, a 1200 dairy goat operation, a lavender farm, a maple syrup operation and a winery.

Hopefully this gives you a feel for the Summer Meeting, an appreciation for its value and an overwhelming urge to take my job which will be available in the next couple of years. Work hard but work safe. God bless all.



## BadgerWay program now open

New funding is now available for the 2018 BadgerWay Program. BadgerWay is part of the Species at Risk Partnerships on Agricultural Lands (SARPAL) initiative funded by Environment and Climate Change Canada and supports farm habitat for the American badger.

The program highlights are:

- 3 supported BMPs – establishment of perennial contour cropping or other in-field perennial grass strips; tree and shrub planting; grassland restoration
- Up to 75% cost-share, to a maximum of \$20,000
- First come, first served
- Eligible area is west of highway 400
- Conservation Agreements are required, signed between the producer and Environment and Climate Change Canada
- Tree Service Agreements for spring 2019 planting
- **Eligible invoice dates: January 1, 2018 to February 1, 2019**

For questions about the BadgerWay Program, please email [sarpal@ontariosoilcrop.org](mailto:sarpal@ontariosoilcrop.org) or call 519-826-3035. Additional program information can also be found in our website: <https://www.ontariosoilcrop.org/oscia-programs/sarpal/badgerway/>.

# Waterloo's summer bus trip

A small but enthusiastic group of Soil & Crop members and friends boarded a mini-coach July 10 and headed east for a 3-day bus tour to eastern Ontario and Quebec farms.

The first stop along the route was the farm of Max and Eric Kaiser in the Quine Region of Ontario. Eric, the 2017 OSCIA Soil Champion, spoke to the group about the challenges and successes they've had in transforming 14 former Loyalist settlement properties, with heavy clay soils, to a viable and sustainable farming operation that includes field crops, laying hens and a strawberry business.



**Scott Cressman** @scressma · Jul 10

Fantastic first stop for our Waterloo Soil and Crops Bus trip East at @PMaxKaiser and @EricKaiser4 farm! Thanks So much for the Hospitality and warm welcome. Great lesson of the day, don't be afraid to try something new and never stop Evaluating.

The rest of the trip included visits to Agrifusion, a 6,000 acre organic farm growing corn, soybeans, wheat and vegetables; the farm of Danny Messier, a large cash crop operator who utilizes strip till, controlled traffic systems, cover crops, and conducts fungicide and fertilizer trials; the farm of Jocelyn Michon, a producer with 20 years of no-till experience growing corn, wheat and soybeans; and the farm of Mike Verdonk, who grows 2500 acres of corn, soybeans, wheat and canning crops using strip till.



**Tori Waugh** @tori\_waugh · Jul 10

This family does NOT fool around with wear & tear! The way @EricKaiser4 talks, their family sounds like a professional pit crew come planting season. "You only get one chance to do everything right and with heavy clay, everything you do has to be perfect"



**Tori Waugh** @tori\_waugh · Jul 12

@MikeVerdonk was our last stop on the **Waterloo Soil & Crop** Quebec tour and what a great finale! He does really cool experiments with strip till & cover crops with a big focus on building up a strong base to support his road to great yields, efficiency and #SoilforCenturies

Photos courtesy of Scott Cressman



# News from Heartland Region



**Perth Soil & Crop** @perthsoilncrop · Jul 10

Big thanks to directors, sponsors, @OMAFRA field crop staff and members who made it out tonight! #twilighttailgate



**Perth Soil & Crop** held a “Twilight Tailgate Tour” on July 10. Starting with pork on a bun at host Bradi Farms, attendees went on to learn about strip tilling practices, different nutrient applicators and economics of high yield wheat. The night ended with a trip to the Perth County Demo Farm.

Follow them on Twitter @perthsoilncrop

**Wellington Soil & Crop’s** summer meeting focused on Wheat — “a profit center in your rotation”, and featured guest speakers Peter Johnson and Anne Verhallen of OMAFRA.



**Huron Soil and Crop** @HuronSoilCrop · Aug 28

Thank you to everyone who came out to our Twilight Tour last week! Also a big THANK YOU to @HDCAgronomy @HensallBranch Ben Rosser of @OMAFRA @RicksZone @claussenboss and @DeltaPowerEquip for your contributions to the event.



**Huron Soil & Crop** hosted a Twilight Tour on August 28, featuring Michelle Baker of Delta Power Equipment speaking about strip tillage, Ben Rosser from OMAFRA, and Steve Redmond from Hensall District Co-op. The group had a tour of Thompson’s Hensall facility, and visited Rick Koostra’s farm to learn more about relay cropping on his farm. The evening ended with a BBQ at the Huronview Demo Farm.

# Farmers can apply now for cover crop payment

Cover crops grown over the winter on agricultural fields are just the right thing to do, according to some local producers who participated in a Grand River Conservation Authority (GRCA) program and received an incentive payment last year.

Applications for the cover crop program can be submitted now for payment in spring 2019. The per-acre incentive is offered to applicants in Wellington, Brant, Haldimand and Dufferin counties, as well as Waterloo Region, through the GRCA's [Rural Water Quality Program](#) (RWQP). The benefits of cover crops are numerous — they can reduce erosion, build better soil structure and improve soil health. Cover crops also help reduce runoff into local waterways, ultimately improving overall watershed health.

"Cover crops are a simple and cost-effective way of feeding the soil and minimizing erosion," said Steve Lake of Elora. "With cover crops and no-till practices, we are protecting local water quality and building a more resilient soil for the future."

Other producers agree. Over the last five years, more than 235 producers in Brant, Waterloo, Wellington, Dufferin and Haldimand counties received the cover crop incentive payment. Priority is given to erosion-prone fields next to watercourses or wetlands and areas that are susceptible to wind erosion. Fields that are tile drained or in wellhead protection areas are also considered. Cover crops that are used solely for cover — not harvested or grazed — are eligible under the program.

The incentive rate varies by county program and is between \$20 and \$100 per acre. The municipalities fund the Rural Water Quality Program and the GRCA administers this initiative on their behalf.

More information is available about the cover crop program by contacting the GRCA at [ruralwater@grandriver.ca](mailto:ruralwater@grandriver.ca) or calling 519-621-2761 and asking to speak to a conservation specialist.

To learn more about the broad range of services and grants that are available through the GRCA, including forestry and environmental programs, please visit [www.grandriver.ca/ruralwater](http://www.grandriver.ca/ruralwater).

## SOIL TEST DISCOUNT

*Valid for current OSCIA members only until December 31, 2018*

*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.*



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September 2018 Edition

# OSCIA PROVINCIAL NEWSLETTER

## OSCIA Summer Meeting – Georgian Central Region



As I write this, we are experiencing the first under 20-degree day in a long time; maybe since May. We seem to be pulling out of the drought, although some areas just barely and others are experiencing too much rain.

Despite the heat and dry weather, crops are not too bad in a lot of the province other than the hay and massive weed growth in the IP soy at our place.

As you read this, the second intake for The Partnership (CAP) program has come to a close. Please call your regional program lead, workshop leaders, or the Guelph office to get the dates of upcoming intake periods. Contact information, including phone numbers can be found on the OSCIA website at <https://www.ontariosoilcrop.org/contact-us/>

As always, make sure your EFP and Grow Your Farm Profits workshops are up to date.

At the end of June, after a 31-year career at OSCIA, Harold Rudy has retired. He will be greatly missed by all, but staff will carry on. Harold is likely one of the most connected individuals in Ontario Agriculture. In part to mark his tenure at OSCIA, Harold has written a book on the 31 years that he worked here – The Soil Fixers. There was a soft launch of his book at the Summer Meeting with a full launch sometime in the future. I haven't had the opportunity to read the book yet but am looking forward to doing so. Keep in mind this will be a terrific speaker gift at annual meetings this winter.

This year's summer meeting was held in Walkerton, Bruce County of the Georgian Central Region. This is really one of the most attractive components of being a director: being able to experience a different part of this fantastic province, on an annual basis. We want to thank our hosts,

Les and Mary Nichols, for showcasing their beautiful county.

Hoping everyone has a safe and bin-busting harvest!

Until next time.

*Peter McLaren, OSCIA President*

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

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- OSCIA's New Program Director
- Preparing for AGM Season
- Do you know a Soil Champion?
- Operation Pollinator

### *Ontario Soil and Crop Improvement Association*

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**Website:** [www.ontariosoilcrop.org](http://www.ontariosoilcrop.org)



## OSCIA Summer Meeting – Georgian Central Region



The OSCIA Summer Meeting is an annual event hosted by the 1<sup>st</sup> Vice President. This year, that was Les Nichols representing the Georgian Central Regional Soil and Crop Improvement

Association in Bruce County. This is a great way for the 1<sup>st</sup> Vice to showcase their local community including farms, food, and friends. A tremendous amount of work goes into the event by the host's family, the local associations, and a few key Guelph office staff. The Summer Meeting is an opportunity for the Board and some staff to meet face to face and draws in many past presidents, spouses and dignitaries. It's a time to tend to association business, and to reminisce and catch up with friends. This year, the event started in Formosa Lions Park near Walkerton.

After a reception at the farm, the group went on a tour of Albadon Farms where they were also entertained by Team Farmall, a group who performs square dancing with tractors. Dinner and entertainment followed back at the Lions Park pavilion.

While the Board and staff met for the formal business meeting on Monday, the other guests enjoyed the sights and sounds of the Region. The tour led to the Bruce Power Plant, Treasure Chest Museum, Chatsworth Fish Culture Station, and Tony Lang's Classic Car Collection. Tuesday, traditionally, is the day the entire group tours together. This allows the Board, staff and other guests to enjoy a few additional sites and one another's company. This tour began with a visit to a large beef feed-lot, a dairy goat operation, lavender farm, winery, and a tour of past president Jim Fischer's maple sugar bush.



Photo: Becky Smith, NWMO

All the tours were informative, interesting and provided a wonderful opportunity to mingle with members and staff. Next year's summer meeting will be held in the Heartland Region, hosted by Stuart and Caroline Wright.

*Written by Nicole Hottot, Executive Assistant*

## Supporting Mental Health Services for Ontario Agriculture

The Niagara North SCIA brought forward a resolution at the Annual Conference in February that called upon OSCIA to join the fight against mental illness in the agriculture industry and support efforts to increase mental health literacy and training. The resolution was overwhelmingly supported by the delegates.

The actions by Niagara North SCIA were spurred through a presentation provided by Professor Andria Jones-Bitton at their annual meeting in December 2017. Dr. Jones-Bitton is from the Department of Population Medicine at University of Guelph. She and her colleagues conducted a nationwide online stress and resilience survey with agricultural producers from September 2015 to January 2017.

The outcome clearly identified a need. As a result, she has built a team of producers, industry representatives, veterinarians, and mental health professionals to create, deliver, and evaluate a mental health literacy training program for farmers. This program would train people to recognize and respond to mental distress and reduce stigma around mental health issues in Ontario's agricultural sector.

After investigating what training and referral services were currently available through the general farm organizations, OMAFRA, the University of Guelph and others, OSCIA compiled a brief listing which is posted on our website at:

<https://www.ontariosoilcrop.org/association/association-membership/resources/>

At the summer meeting in August, the Provincial Board committed \$500 to support the continuing work of Dr. Jones-Bitton. Members who may be considering a personal donation to support mental health awareness and research in the agriculture community may consider:

- sending a cheque payable to the University of Guelph with a cover letter indicating that it is a gift towards supporting Andria Jones-Bitton's farmer mental health research. Tax receipts can be issued for donors; or
- Investigate donor opportunities with the national Do More Agriculture Foundation on their website: <https://www.domore.ag/about-us/>

*Written by Andrew Graham, Executive Director*



## Tier One Grants

With contributions from OMAFRA and OSCIA, Tier One Grants are available and applications are being accepted from local and regional associations. To apply for a Tier One Grant just fill out the application and sent to Nicole Hottot or Amber Van De Peer at the Guelph office ([nhottot@ontariosoilcrop.org](mailto:nhottot@ontariosoilcrop.org) or [avandepeer@ontariosoilcrop.org](mailto:avandepeer@ontariosoilcrop.org)). The guidelines, application, and claim form can be found on OSCIA's website at:

<https://www.ontariosoilcrop.org/association/association-membership/grants/>

Eligibility requirements are included in the guidelines. Projects typically include in-field trials, demonstrations of equipment or management techniques, and educational activities including bus tours, twilight tours, crop tours, guest speakers, and public outreach.

Membership engagement activities are also eligible and usually are linked with educational activities.

If you have an idea but aren't sure if it's eligible please ask your local or regional representatives or contact Nicole Hottot or Amber Van De Peer. Each local and regional SCIA is eligible for up to \$1500. Local and regional SCIAs are welcome commit their grants towards one larger project and make a joint application.

## Welcoming OSCIA's New Program Director



OSCIA is pleased to welcome Angela Straathof as the new Program Director.

Straathof received a PhD in soil chemistry and biology from the Department of Soil Quality at Wageningen in the Netherlands – ranked as the number one

agricultural research university in the world. More locally to Ontario, her background includes being raised on a dairy farm in Eastern Ontario before studying Land Resource Management at the University of Guelph. She looks forward to bringing her research, management, and leadership skills to Ontario and transitioning into a role that enables her to bring positive energy to working with farmers, government, and the agricultural industry.

Peter McLaren, President of OSCIA is thrilled that Straathof is joining the organization. "Angela's experience at world-class agricultural research facilities, background in Ontario agriculture, and consistency in

project delivery to the highest possible standards will add even more depth to OSCIA's ability to deliver programs. Her knowledge in soil health will be greeted enthusiastically by our membership."

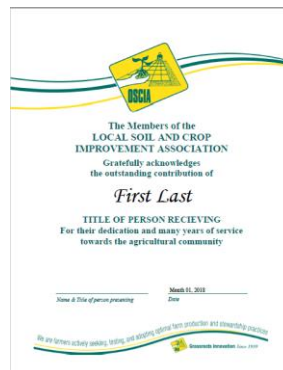
Straathof is expected to begin her role at OSCIA in the latter half of October. "It has always been my passion to communicate amongst farmers, researchers, and policy makers in such a way that all parties feel understood, informed, and valued. I have long-admired the progressive and influential work of the OSCIA and can't wait to get started in this exciting new role."

*Written by Andrew Graham, Executive Director*

## Preparing for AGM Season

The time of year when local SCIAs are holding Annual General Meetings is coming up! Spice it up this year by offering a selection from OSCIA's options of apparel!

The hottest items are OSCIA soft shell jackets, t-shirts, and hoodies. Get extra embroidery starting at only \$8! Other items to consider for your AGMs are gate signs, decals, brochures, membership cards, soil depth indicators, and more.



Don't forget to request a recognition certificate for any outstanding members or volunteers! Always appreciated and always free.

Email Nicole Hottot or Amber Van De Peer for a nicely framed copy that will be mailed to you to present to the recipient.

Having a guest speaker at your AGM? Apply for a Tier One Grant to cover the cost of their fees! Each local and regional SCIA is eligible for up to \$1500.

Remember to select the delegates of your choosing who will attend the 2019 OSCIA Annual Conference. This year, the conference is moving and will be held at the Four Point Sheraton in Downtown Kingston. At the Annual Conference you can expect to hear from other farmers, keynote speakers, and grant recipients.

*Written by OSCIA Office Staff*

## Do You Know a Soil Champion?

The Soil Champion is an annual award that recognizes strong advocates of sustainable soil management. Individuals from one of two general groups can be nominated:

- 1) Those engaged in practical agriculture in developing, using and promoting management that contributes to the sustainable productivity of the soil; or,
- 2) Research or extension professionals whose work demonstrates a commitment to advancing soil health and productive sustainability.

One Soil Champion winner will be declared for 2019 by the selection committee and announced at the OSCIA Annual Conference in February. An individual may nominate him/herself or be nominated by a third party. If you are nominating someone else, please ensure he/she is informed of your intentions and is a willing participant.

Ontario Soil and Crop Improvement Association

## SOIL CHAMPION

Awarded annually to recognize  
**outstanding contributions** to  
**soil management** that directly  
influences **soil health**  
**and crop production**  
**sustainability** in Ontario

*Nominate your friend,  
mentor, or yourself by:*  
**NOVEMBER 1, 2018**

*Associations can ask their RCC for help*



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## Operation Pollinator

Operation Pollinator, already successfully enhancing pollinator habitat in Alberta, Manitoba and Saskatchewan, expanded into Ontario in 2018. The program provides farmers with a pollinator seed mix as well as \$100 per acre for up to 2 acres of pollinator habitat created.



The program was well received and the target of 33 sites enrolled was achieved by June. The program saw a great mix of participants from across the province. Site verification of the plantings was completed in the summer for the majority of projects. This is the first year the program was delivered in Ontario, and it is fully subscribed at this time. Stay tuned for updates on Operation Pollinator!



Operation Pollinator, a Syngenta program focused on pollinator health, expanded its footprint in Ontario in 2018 through a partnership with the Soil Conservation Council of Canada (SCCC) and the Ontario Soil and Crop Improvement Association.

*Written by Maria Ramirez Giraldo, Programs Analyst*







# CROP TALK

Volume 18, Issue 3 OMAFRA Field Crop Specialists — Your Crop Info Source

September 2018

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Visit [FieldCropNews.com](http://FieldCropNews.com) for current field crop information through the season!

### Brought to You by the Following OMAFRA Crop Specialists

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Tracey Baute, Field Crop Entomologist  
Horst Bohner, Soybean Specialist  
Christine Brown, Field Crop Sustainability Specialist  
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Joanna Follings, Cereals Specialist  
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Ian McDonald, Crop Innovation Specialist  
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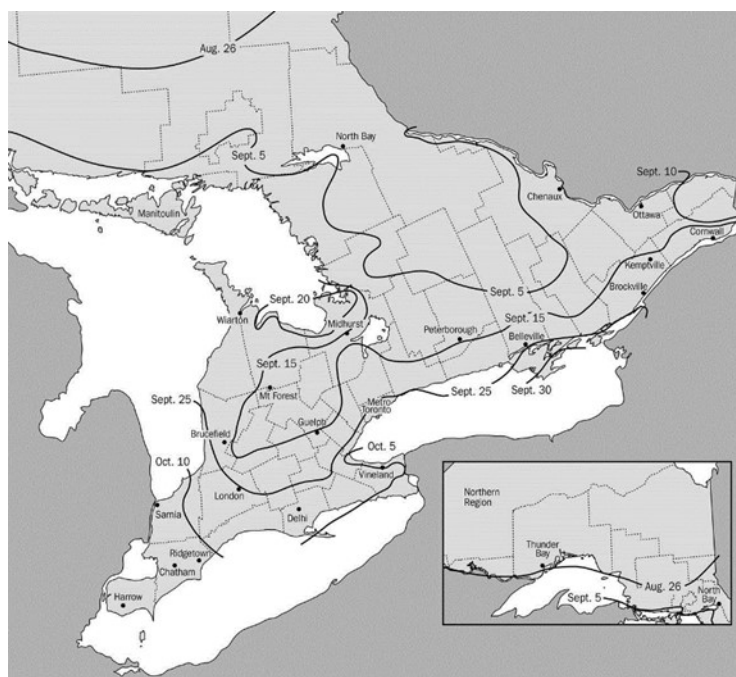
**Editor:** Meghan Moran, Canola and Edible Bean Specialist  
**Compiled by:** Julie Desrosiers

## Winter Wheat Establishment: It's All in the Details

*Joanna Follings, Cereals Specialist, OMAFRA*

The 2018 growing season had its challenges with a cool, wet spring followed by hot, dry weather during the critical grain fill period. The weather had a negative impact on yield for many while others were pleasantly surprised with yields pushing well over 100 bu/ac. So what did growers who fared better than others have in common even in a year with variable moisture? They made sure their winter wheat crop had the best start possible.

You may say to yourself "Yes, we know a good wheat crop starts with planting! We've heard this over and over again!" Yet, many are still not giving their winter wheat crop the attention it deserves at planting. This lack of attention to detail in the fall has an impact on how well the crop manages the stressors Mother Nature may throw at it and can ultimately make or break your crop.



**Figure 1.** Optimum date to seed winter wheat across Ontario. Publication 811, OMAFRA Agronomy Guide.

Attention to detail starts with planting your crop on time (Figure 1)! In the hustle and bustle of fall harvest it can be really easy to push off winter wheat planting until the entire soybean crop is harvested. However, Ontario research has shown a 1.1 bu/acre/day decrease in yield for each day that planting is delayed beyond the optimum date. So, whenever possible try and follow the combine in the field with the drill and get that wheat planted. In order to successfully do this, ensure all soybean residue is evenly spread and that the drill can easily cut through the residue. Also double check that all planting equipment is in good working order well before you get to the field to avoid any further delays.

Next, ensure you are using a starter fertilizer. Ontario research has shown over and over again that winter wheat is highly responsive to starter fertilizer, phosphorus in particular. Starter fertilizer provides nutrients for early growth and promotes root development, ultimately improving winter survival and crop uniformity the following spring. Seed-placed starter fertilizer has been shown to increase yields, on average, by 7.5 bushels per acre. Ontario research has also shown that dry granular fertilizers are as effective as liquid 6-24-6 (Table 1 and 2).

**Table 1. Yield Response to Starter Fertilizer – Liquid 6-24-6, OMAFRA Publication 811: Agronomy Guide**

Fertilizer (In furrow)	P Applied	Yield Increase Over Check		
		Soil Test P 6-13 ppm (10 sites)	Soil Test P 13-21 ppm (9 sites)	Soil Test P 21-56 ppm (9 sites)
10 US gal/ac	27 lb P <sub>2</sub> O <sub>5</sub> /ac	12.0%	6.2%	3.3%
5 US gal/ac	12 lb P <sub>2</sub> O <sub>5</sub> /ac	9.7%	2.7%	1.8%
2.5 US gal/ac	7 lb P <sub>2</sub> O <sub>5</sub> /ac	6.3%	2.9%	0.9%
Average Check Yield		79 bu/ac	88.5 bu/ac	89 bu/ac

**Table 2. Yield Response to Starter Fertilizer – Dry 7-34-20, OMAFRA Publication 811: Agronomy Guide**

Fertilizer (In furrow)	P Applied	Yield Increase Over Check		
		Soil Test P 6-13 ppm (10 sites)	Soil Test P 13-21 ppm (9 sites)	Soil Test P 21-56 ppm (9 sites)
150 lb/ac (in furrow)	27 lb P <sub>2</sub> O <sub>5</sub> /ac	17.3%	6.2%	4.8%
50 lb/ac (in furrow)	12 lb P <sub>2</sub> O <sub>5</sub> /ac	10.9%	4.7%	3.5%
200 lb/ac (broadcast)	7 lb P <sub>2</sub> O <sub>5</sub> /ac	12.0%	3.5%	4.6%
Average Check Yield		79 bu/ac	88.5 bu/ac	89 bu/ac

Consider the move to fall weed control! Although winter wheat is quite competitive, weed pressure can have an impact on tillering, ultimately reducing yields. Fall weed control enables you to better manage herbicide resistant Canada fleabane and also provides an opportunity to control perennial and winter annual weeds. More importantly it allows for proper fungicide timing in the spring and means one less thing to worry about in the busy planting season.

Lastly, be prepared to adjust! Adjusting your seeding depths and populations will help compensate for the less than ideal conditions that may occur at planting. Seed winter wheat a depth of about 1 inch, any shallower and the crop becomes more vulnerable during the winter months (Figure 2). If the weather turns dry during planting, adjust the seeding depth so that the seed is being placed into moisture. Seeding rates should also be adjusted if seeding is delayed beyond the optimum timing. Rates should be increased by 200,000 seeds/acre to a maximum of 2.2 million seeds/acre. Higher seeding rates when planting is delayed will also assist with the reduced tillering that may occur before winter.





**Figure 2.** Winter wheat seeded at a 1" seeding depth (left) vs ½" seeding depth (right).

The fall can be a busy time with soybean harvest and winter wheat planting occurring simultaneously, but when it comes to winter wheat, time is money. So if we want a profitable wheat crop we need to pay attention to the details in the fall and give it the best chance to survive whatever Mother Nature throws it's way!

## Cereal Rye – A Simple but Effective Cover Crop Option

*Jake Munroe, Soil Fertility Specialist – Field Crops, OMAFRA*

With fall now officially here, thoughts are turning to harvest. And with each acre harvested, there is potential for a cover crop to be seeded. At this point in the season, the main cover crop option left is cereal rye. Not to be confused with annual ryegrass, rye is a cereal that is competitive, winter hardy and, like winter wheat, does its real growing in the spring.

### Why rye?

Rye improves soil structure, reduces nitrogen losses from leaching, builds organic matter and helps protect against water and wind erosion. It also competes with weeds (see Figure 1). It is relatively inexpensive and easy to kill.



**Figure 1.** Rye helping to suppress Canada fleabane and lamb's-quarters in a trial in Norfolk County, May 2018. Photos: Mike Cowbrough, OMAFRA.

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## Establishment

Rye's best fit in a field crop rotation is following silage or grain corn and before soybeans. Since it grows very little in the fall, it should be left to overwinter.

Rye can be reliably established in most parts of Ontario up to the first week of November (mid-November for Kent, Essex and Lambton Counties). Drilling is best. If broadcasting rye, consider some light incorporation afterward to improve seed-to-soil contact.

Seeding rate depends on your objectives. Do you want a thick stand to provide a mulch in spring or just enough to provide some soil cover over winter? You can use the [Midwest Cover Crop Council's Cover Crop Decision Tool](#) to determine an appropriate seeding rate. If you plan to seed slightly past the optimal window, bumping up your seeding rate and drilling the rye will help increase the likelihood of an even stand come spring.

### Cost-benefit: what is the impact of rye on yield and soil health?

On-farm research by Iowa Learning Farms and the Practical Farmers of Iowa has shown that across 28 site-years, a cereal rye cover crop prior to soybeans increased yield in 8 cases, decreased yield once and did not affect yield in the remainder of the trials. Across these trials, cover crops were typically terminated 7-10 days before planting.

The same study, however, did not find an improvement in organic matter or organic nitrogen after 7 years of a rye cover crop compared to no cover crop in a corn-soybean rotation.

Though rye can have an immediate impact by reducing soil erosion and nutrient leaching, soil properties do not change overnight.

### Spring termination decisions

Delaying termination up until soybean planting provides an opportunity to accelerate rye's soil benefits by giving it more time to grow in the spring. The question is, does planting soybeans "green" into rye negatively impact yield? This is the motivation for a series of on-farm trials with Brant County SCIA, in which soybeans grown after early-terminated rye are being compared to those "planted green" into rye.

Across 4 sites, rye biomass increased on average by 5.5-times when terminated at time of soybean planting compared to ~2 weeks prior (Table 1).

**Table 1. Rye biomass (dry) at early versus late termination timings across all sites. Rye seeding rates ranged from 30-90 lbs/acre.**

Site	Early Termination		Plant Green	
	<i>Date</i>	<i>Rye Biomass (lbs/acre)</i>	<i>Date</i>	<i>Rye Biomass (lbs/acre)</i>
<i>St. George 2017</i>	May 12	429	May 23	1,264
<i>Brantford 2018</i>	May 9	302	May 25	2,524
<i>St. George 2018</i>	May 11	138	May 23	1,228
<i>Lambton 2018</i>	May 8	670	May 24	1,601

At the site with the greatest amount of rye biomass, Brantford 2018, allowing an extra two weeks of growth resulted in an extra 48 lbs/acre of nitrogen scavenged by the cover crop – from 12 to 60 lbs/acre. Nitrogen taken up by rye is released slowly over the season and is less likely to be lost to the environment. Since soybeans fix their own nitrogen, this uptake does not affect the crop.



## Delayed termination can impact soybean stand and crop development

Delaying termination of rye does not come without some risk. Soybeans stands were reduced at some sites (Table 2).

**Table 2. Soybean population, seeding rate and method**

Site	Plants per acre		Seeding rate	Seeding method
	<i>Early Termination</i>	<i>Late Termination</i>		
<i>St. George 2017</i>	110,000	120,000	160,000	15", drilled
<i>Brantford 2018</i>	101,000	89,000	140,000	30", planted
<i>St. George 2018</i>	123,000	118,000	160,000	15", drilled
<i>Lambton 2018</i>	117,000	87,000*	140,000	twin rows on 30" centres, planted

\*Soybean seeding depth was accidentally not adjusted to account for depleted soil moisture in late termination plot

It is particularly important to plant into moisture and ensure that the seed trench is closed. Also, if conditions are very dry leading up to planting, terminate rye early to avoid planting into even drier conditions.

Soybeans in later-terminated rye also tended to have delayed development. Across all sites in 2018, plants were consistently one growth stage behind in the "plant green" plots (Figure 2). Soybeans are adaptable, to a point, to reduced stands and moderate delays in development. Also, rye residue provides a mulch that helps to conserve soil moisture.



**Figure 2.** Soybeans at the Brantford 2018 site on June 26. Soybeans "planted green" into rye (right) were one growth stage behind and shorter than those planted into early terminated rye (left).

### Yield results

At the St. George Site in 2017, soybeans in the early terminated strips yielded the same, statistically, as those planted green into rye (57 vs. 60 bushels/acre, respectively).

Results from all three 2018 sites will be available this winter. Check the Field Crop News website and OSCIA's Crop Advances for details.

### Putting it together

Consider seeding rye this fall. Gain confidence by terminating it a couple of weeks before planting soybeans in the spring. If you're more experienced, leave a strip to be sprayed after soybean planting this coming spring and see how it works on your farm. Have a goal in mind – is it weed management, building organic matter or overall soil health? And finally, be flexible and adapt your plans according to weather conditions.

### More on-farm research to come

Starting this fall, an OSCIA Tier Two project by Heartland and Eastern Valley regions will look closer at the effect rye on weeds, crop yield and more. The two-season project will evaluate the use of a roller crimper for termination of rye and look deeper at the question of termination timing in the spring.

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## Managing Forages under Dry Conditions

*Christine O'Reilly, Forage and Grazier Specialist, OMAFRA*

Dry conditions in some parts of the province have farmers thinking about available forage. There are several things that can be done to help ensure you have enough feed until next spring.

### Take inventory

Knowing the amount of forage needed to get through the year is the first step to ensuring your farm has enough. Ruminants eat approximately 2% of their bodyweight in forage dry matter every day. To calculate daily livestock demand, use the following calculation for each class of livestock on the farm:

$$\text{Daily forage DMI} = \text{average bodyweight} \times \text{number of animals} \times 0.02$$

Add up the answers for each class for total daily dry matter intake (DMI). Multiply this by the number of days' feed the farm needs. Add 10-25% to this total to account for wastage. This final number gives a realistic idea of the amount of forage required.

When adding up the tonnage in hay stores and silos, make sure to record yield on a dry matter basis. If there is less forage than the livestock demand, now is the time to plan how to address the shortfall.

### Protecting pastures

Pastures that have been well managed from the beginning of the grazing season will be more resilient against dry conditions. Since rainfall grows grass, recovery times are longer when the weather is dry. Moving livestock onto alternative crops for grazing can extend the rest period on perennial pasture and allow for a full recovery. As an added bonus, alternative grazing can extend the season and reduce the number of days' feed needed. Most cover crops can be grazed, as can grain crop residues. Strip grazing is the most effective way to graze these crops, as it minimizes animal health risks and spreads manure evenly across the field.

If alternative grazing is not available, feeding harvested forages will protect the pasture and next year's yield potential. Be sure to account for these days of feeding when taking inventory of on-farm forage.

### Remember fertility

If there is rain in the forecast, applying 55 – 75 kg N/ha (50 – 68 lbs/ac) can boost fall yields of pasture or hay. Nitrogen should not be applied to forage crops after mid-September, because it will reduce winter hardiness in the sward.

Phosphate and potash recommendations for forages are based off soil tests. Guidelines are available in OMAFRA Publication 811: Agronomy Guide for Field Crops. Applying K in the six weeks before the critical fall harvest period improves winter hardiness.

### Test forages

Having enough tonnage is only part of the feed inventory: without an analysis, it is impossible to know whether the forage has enough nutritional value to maintain animal production. By testing each lot (combination of field and cut) separately, lots can be allocated to different livestock classes according to their needs. The analysis can also be used to balance rations.

Dry weather can cause nitrates to accumulate in fast-growing forages, like corn silage, sorghum sudangrass, brassicas, and cereals. Signs of acute nitrate poisoning include, staggering, vomiting, laboured breathing, blue-grey mucous membranes, and death. Chronic nitrate poisoning often appears as poor-doers, early-stage abortions, and pre-mature births. Testing forages for nitrates allows farmers to manage nitrate levels in rations and prevent animal health issues.

### Purchase additional feed early

If you are unable to make up a forage shortfall with crops grown on farm, purchasing forages can fill the gap. Be sure to buy early, as prices tend to increase over the winter months and into the spring as supplies dwindle. OntarioHayListings.ca is a free classified service for hay and straw in Ontario.

### Coping with adverse weather

Challenging growing conditions can be very stressful, and it is easy to feel overwhelmed. If you need someone to talk to, or are looking for services in your area, you can call the Mental Health Helpline at 1-866-531-2600.

More resources on forage and pasture production during dry conditions can be found on OMAFRA's Adverse Weather webpage: [www.omafra.gov.on.ca/english/crops/weather/adverseweather.html](http://www.omafra.gov.on.ca/english/crops/weather/adverseweather.html)

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## Synergy of Cover Crops with Manure Application

Christine Brown, Field Crops Sustainability Specialist, OMAFRA

Yield and quality of an oat cover crop was evaluated with and without an application of digestate. The study was conducted in two years on two separate fields. The oats were hand harvested and 3 samples were collected for each of the triplicated treatments. The results were evaluated based on harvested crop value (yield and quality) and how that would compare to potential feed value for milk production, as well as soil organic matter contribution if the crop had not been harvested.


The results show the synergy of feeding the cover crop and the soil microorganisms that enhance nutrient cycling and biomass production. A few highlights shown in Table 1 and Table 2 below.

- Feed quality decreases (milk/ton) with digestate applied, but yield increases by about 40% to give a 33 to 50% increase in milk production per acre
- Nutrient uptake is higher than nutrients applied from digestate, indicating increased microbial nutrient cycling
- The amount of time required to increase soil organic matter by 1% is cut almost in half with the combination of cover crops and organic amendment.

**Table 1: Cover Crop Oats with and without Digestate – Yield and Quality of Harvested Material**  
(harvested Oct 13, 2016 and Nov 1, 2017)

Treatment (avg of 18 samples)	Yield			Yield & Quality *					
	Dry Weight (t/ac)		% Δ	Milk/ton (lbs)		Milk/ac (lbs)		\$/acre	
	2016	2017		2016	2017	2016	2017	2016	2017
CC Oat	1.9	2.68	---	1,985	3,044	3,466	8,139	\$1,190	\$ 2,794
Digestate + CC Oat	3.2	4.43	~40	1,916	2,691	7,298	11,547	\$2,505	\$ 4,090
<div> <div>3.5 % ↓</div> <div>14 % ↓</div> <div>52 % ↑</div> <div>32 % ↑</div> </div>									
*using Wisconsin MILK2013 and milk value = \$0.78/L									

**Table 2: Cover crop Oats with and without Digestate – Biomass impact on Soil Quality**

Above ground biomass only	OM (lbs/ac)		P <sub>2</sub> O <sub>5</sub> (lbs/ac) Uptake/removal		K <sub>2</sub> O (lbs/ac) uptake/removal		
	2016	2017	2016	2017	2016	2017	
CC Oat	3,514	4,908	21	35	89	129	
Digestate + CC Oat	5,861	8,122	42	64	209	230	
SOM	Stable Carbon (lbs/ac)		% Δ in SOM Above ground only		Years to ↑ SOM by 1%		with Root Biomass (estimate)**
					Above ground only		
Digestate only	101		0.005		200 yrs		200 yrs
CC Oat	422		0.022 – 0.023		44 – 47 yrs		26 yrs
Digestate + CC Oat	823		0.0038 - 0.041		24 – 26 yrs		15 yrs

\*\* 1,685 lbs/acre (6" depth) of carbon from 8 wk oat growth (J. Environ Qual 30:1911-1918 (2001))  
Digestate@ 3,600 gal/ac (4.2% DM; 2.6% OM, 0.35% N, 1866 ppm NH<sub>4</sub>-N; 0.07% P; 0.2% K 4:1 C:N) = 56-46-78 lbs/ac

## Hail, Hail, Go Away

Ben Rosser, Corn Specialist, OMAFRA

As with most years, summer thunderstorms brought localized hail events through parts of Ontario, particularly during the last week of July (Fig 1).



**Figure 1.** Corn canopy with 50% or more defoliation 10 days after a July 26 hail storm, Denfield, ON, 2018.

After a hail event, our first question is how much leaf tissue is still out there? When evaluating damage, it's good to wait a week or so before going in. This gives time to let dead or damaged tissue clearly senesce, and gives us a better picture for what amount of green living tissue still remains.

### Yield Loss?

Defoliation tables give estimated yield loss for defoliation at various crop stages, and can be used to estimate yield loss from a hail event (Table 1). Like most stresses, yield loss from defoliation increases through vegetative stages, peaks around tassel or pollination, and declines through grain-fill. For example, estimated yield loss from a hail storm producing 50% defoliation would be 3% at the 8 leaf stage, 30% at tassel, and 15-20% during the milk stage. Depending on crop stage and level of damage, variability in recovery time may also induce plant to plant variability (Figure 2).

### Fungicide?

A common question after hail damage is should I apply a foliar fungicide to protect the damaged plant?

Trials have evaluated whether there is an enhanced yield response to foliar fungicides following mechanical damage simulating hail, and have shown there is no greater response to fungicides following damage than where there was no damage (Sisson et al, 2016 Bradley and Ames, 2010). This may reflect the fact that foliar fungicides are protecting against fungal diseases (northern corn leaf blight, common rust, grey leaf spot, eyespot) which do not require wounds to initiate infection.



**Figure 2.** Variability in plant recovery timing from severe defoliating hail event at 8 leaf stage (left) was likely the driver for the plant to plant variability evident in this field by grain fill (right).

Opportunistic diseases which do take advantage of plant wounds include bacterial wilts, smuts and stalk or ear rots. Most modern grain corn hybrids generally have good resistance against smuts, and to date Goss's Wilt has not been found in Ontario. Most hybrids have good protection against Stewart's Wilt, but infection primarily requires flea beetle feeding. Foliar fungicides do not protect against these diseases.

Certain fungicides are labelled for suppression of ear and stalk rots, risks of which may increase with hail damage, but research investigating suppression in regards to hail events is limited.



**Table 1.** Estimated grain corn yield loss due to leaf defoliation at various crop stages

Crop Stage <sup>1</sup>	Leaf Defoliation									100%
	10 %	20 %	30 %	40 %	50 %	60 %	70 %	80 %	90 %	
	----- Estimated Yield Loss (%) -----									
<b>7 Leaf</b>	0	0	0	1	2	4	5	6	8	9
<b>9 Leaf</b>	0	0	1	2	4	6	7	9	11	13
<b>11 Leaf</b>	0	1	2	5	7	9	11	14	18	22
<b>13 Leaf</b>	0	1	3	6	10	13	17	22	28	34
<b>15 Leaf</b>	1	2	5	9	15	20	26	34	42	51
<b>17 Leaf</b>	2	4	7	13	21	28	37	48	59	72
<b>18 Leaf</b>	2	5	9	15	24	33	44	56	69	84
<b>19-21 Leaf</b>	3	6	11	18	27	38	51	64	79	96
<b>Tassel</b>	3	7	13	21	31	42	55	68	83	100
<b>Silked</b>	3	7	12	20	29	39	51	65	80	97
<b>Silks brown</b>	2	6	11	18	27	36	47	60	74	90
<b>Pre-blister</b>	2	5	10	16	24	32	43	54	66	81
<b>Blister</b>	2	5	10	16	22	30	39	50	60	73
<b>Early Milk</b>	2	4	8	14	20	28	36	45	55	66
<b>Milk</b>	1	3	7	12	18	24	32	41	49	59
<b>Late Milk</b>	1	3	6	10	15	21	28	35	42	50
<b>Soft Dough</b>	1	2	4	8	12	17	23	29	35	41
<b>Early dent</b>	0	1	2	5	9	13	18	23	27	32
<b>Late dent</b>	0	0	1	3	5	7	9	11	13	15
<b>Mature</b>	0	0	0	0	0	0	0	0	0	0

1 - Leaf stage by "leaf-over" counting method where all leaves up to newest leaf that is arched with tip pointing towards ground are counted

**Source:** Agronomy Guide for Field Crops Publication 811 (Brown, 2017), adapted from National Crop Insurance Services Corn Loss Instruction (Rev. 1994)

## Management Considerations

What other considerations should we have for fields that have been damaged by hail?

In corn with significant defoliation from late vegetative to early reproductive stages, reduced photosynthetic capacity may result in ear filling becoming a priority over stalk deposition, or make plants more reliant on remobilization from stalks to help meet grain fill needs. This may weaken stalks and predispose fields to lodging or stalk rots. This may also drive earlier maturity but lengthen kernel dry down, and may lower test weight (Lauer, 2006).

Hail wounds or bruising on stems or ears may also provide entry points for stalk rots or ear moulds, and can increase risks if environmental conditions are favourable for rot or mould development. Inspect damage to see if bruise marks are superficial on husks or leaf sheaths, or have penetrated through to damage stems or ears (Figure 3). Hail damaged fields should be monitored more closely at harvest due to these elevated harvestability and grain handling risks.



**Figure 3.** Hail marks on leaf sheaths and outer husks generally did not transfer to stem or inner husks on this plant.

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