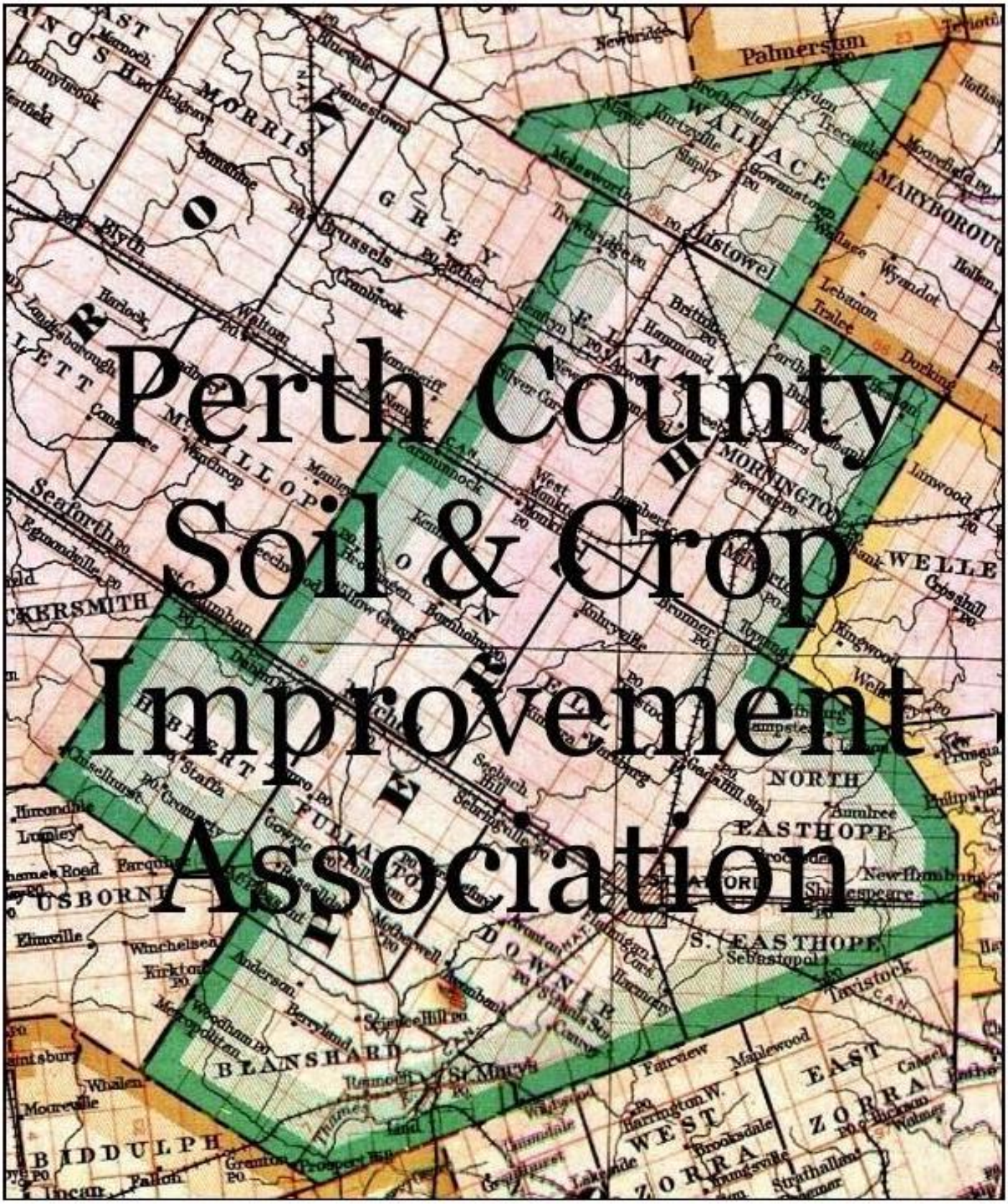

2021 ANNUAL GENERAL MEETING

DOCUMENT CONTENTS

Perth Soil & Crop Improvement Association
Annual Meeting
January 14 2021

KAYE MCLAGAN

Heartland & Perth SCIA President

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Dear Members,

I hope you are as happy as I am to see 2021!

This year was challenging for everyone as I'm sure you have heard the struggles from many people. I for one, am excited to turn the page to 2021 and leave 2020 behind.

It was an unprecedented year, but conditions for cropping in the area were ideal. Each municipality had a bit different weather at times in the County. This made it a great season for some and a dry one for others. I'm always amazed at the attitude all of you bring to your farming operations in this regard. We are constantly having to adjust our expectations with what Mother Nature gives us but you all remain positive and look at what "good" we are given.

Although Covid-19 made it challenging for plots this year, we hope that 2021 will let us return to a new set of normal. The hope is to see plot tours return, especially what is in the works for the new Elora Expo plot tour in July.

Thank you all for your enthusiasm you have for Soil & Crop and on behalf of Perth Soil & Crop Directors, we wish you all the best in 2021!

Sincerely,

Kaye McLagan

HEARTLAND REGION UPDATE

When the Heartland Region Soil and Crop Improvement Association board of directors met in January, 2020 for their annual general meeting, they had no idea that a global pandemic would shut down our communities and halt in-person agriculture events and gatherings for the rest of the year and into 2021. However, the four county associations that make up Heartland Region – Huron, Perth, Waterloo, and Wellington – did not let the pandemic stop them from continuing to serve members and live out the OSCIA mission to facilitate responsible economic management of soil, water, air and crops through development and communication of innovative farming practices.

At the AGM, Kaye McLagan (Perth) was elected as president, and Jeff Strenske (Waterloo) as vice-president. John Poel (Perth) was elected as provincial director, replacing Stuart Wright (Wellington) who had held the position for the past several years. Stuart led OSCIA as president in 2020. Horst Bohner and Joanna Follings continued as OMAFRA reps supporting our local associations and the region.

The Heartland Spring Meeting was held in March. Hosted by Wellington SCIA, more than 80 members gathered at the Listowel Agricultural Hall to hear from Gary Zimmer, the Biological Farmer, Peter Johnson, and a panel of local farmers. Thankfully, this event was able to be held before the provincial lockdown that happened only a few weeks later.

With the usual summer field days and twilight tours canceled, the county associations got creative in finding ways to reach out members and provide educational opportunities. Perth County SCIA recorded a series of videos highlighting the work at their Demo Farm outside of Brodhagen; Huron County SCIA continued work at their HuronView demonstration site, erecting new signage that explained to visitors more about their innovative approaches to soil and water conservation practices; and Waterloo SCIA embarked on a consumer education program, erecting information signs in high-profile fields across the region. Wellington County SCIA kicked off the annual general meetings in the region in December, hosting an excellent virtual AGM featuring several guest speakers, followed by Huron's AGM later in the month. Perth and Waterloo's AGMs are planned for January 2021.

OSCIA launched the Innovator e-newsletter in 2020, which meant that the long-standing Heartland newsletter ceased production. The majority of members now receive their newsletters from the province and the region electronically, saving printing and postage costs and increasing the diversity of information shared from across the province.

Heartland Region is also wrapping up the third year of the three-year Tier Two grant project, Maximizing Cereal Rye Cover Crop Management for Multiple Benefits, led by OMAFRA staff member Jake Munroe. Watch for the final report for the project in early 2021.

With the cancellation of many of the usual winter educational events, Heartland Region SCIA partnered with Golden Horseshoe Region SCIA, SouthWest Ag Conference and the Eastern Crop Conference to host the virtual Ontario Agricultural Conference on January 6 and 7, 2021. Looking forward to 2022, a committee of Heartland and Golden Horseshoe members has been struck to host a new conference offering (hopefully in person).

As we plan for 2021, much is still unknown about what events and activities will look like. However, through the ingenuity and hard work of Heartland SCIA members, we will continue to educate and inform our members whether virtually or in-person.

Mary Feldskov,

Heartland Regional Communications Coordinator

ONTARIO SCIA UPDATE

At the time of writing this, I have almost completed my first full year as provincial director for Heartland region. I've really come to appreciate the quality and talent of the individuals involved at all levels of this organization and how much there is for me to learn yet. Our annual summer meeting was changed to several virtual calls, not the same as meeting in person but very worthwhile nevertheless. Our monthly telephone conference call updates have moved up to a video conference call which makes it seem a little more in person at least.

While many things have been cancelled over this past year, I believe most of the Tier 1 projects and all of the Tier 2 funded projects have still gone ahead as originally planned. The reports on those are being finalized and we can look forward to them being communicated to us at our AGM on February 2nd. All OSCIA members are invited to this virtual event. I even hear the new Soil Champion has been selected but is being kept under tight wraps until then.

The long awaited OSCIA membership platform is now active & being used. It certainly is great to see all of the background work in place ready roll out what will surely be exciting developments, projects & programs to come. I believe this is a big positive for Ontario agriculture moving forward. While we're on the subject of digital platforms, I would encourage everyone to take a look and peruse the OSCIA website, especially if you haven't been over to it lately. There's lots of neat stuff to learn about research projects to give us ideas on possibilities to make improvements to how we farm. While you are there you can't help but notice the programs administered by the OSCIA staff which might just help cover some of those costs associated with some of those improvements. Also, be sure to click on some of the media links boxes like YouTube for instance. That one will bring you to the OSCIA channel where you will find dozens of videos presentations on a variety of interesting and useful topics. I'm sure you'll want to subscribe when you're there.

I'm pleased to see all the top-notch virtual events taking place with high quality informative presentations and also look forward to our in-person events again where we can share & learn not only from the formal part of the meetings but the unstructured times amongst ourselves where we can share our collective experiences and learn from one another.

Stay well so we can take part whatever comes next!

John Poel,

OSCIA Provincial Director

Canadian Agricultural Partnership

Update – prepared on December 18, 2020

Applications for the next program year 2021, became available December 9, 2020 and will close on January 6, 2021 or when cost share dollars are allocated. The applications in the Guelph office are reviewed on a continuous and they are looked at for completeness, eligibility and merit. The number of applications received has been exceptional, warranting some of the categories to be closed due to the category being fully allocated. It is always advantageous for the producer to view the online version of the guidebook found at www.ontarioprogramguides.net or call one of the workshop leaders for any updates.

How will I know when a program is launched? Complete the "Stay up-to-date – Join the OSCIA programs mailing list" on the ontariosoilcrop.org website, programs page, to be included in recent information being released through OSCIA programs

For some of the programs OSCIA delivers, a specific workshop is required. You can find the most up-to-date listings of workshops posted on the link www.ontarioprograms.net Go ahead and register for the workshop that suits your schedule. You do not have to attend a workshop in your county. It is recommended to renew or update your EFP workbook, every 5 years. Most of us have changes on our farm every 5 years. Most times we do not have much notice when programs will begin, so you must be ready for when that happens.

Follow OSCIA on social media. You can call or email OSCIA field staff for details on programs. We want to help you be successful in providing you the information that we can or guide you to the next steps.

Take care and stay well.

Lois Sinclair – OSCIA Regional Program Lead/Workshop Leader

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2021 Perth Soil and Crop Meeting

Production Insurance
Reviewing 2020, Finalizing Yields, Claims

Average corn yields in your county

County	2020 average yield	Compared to history	% Insured Acres Reported
Provincially	178.08 bu/ac	101%	72%
Perth	189.53 bu/ac	102%	78%
As of Dec 15, 2020			

Average soybean yields in your county

County	2020 average yield	Compared to history	% Insured Acres Reported
Provincially	52.41 bu/ac	112%	82%
Perth	58.19 bu/ac	113%	88%
As of Dec 15, 2020			

Average Soft Red Winter Wheat yields in your county

County	2020 average yield	Compared to history	% Insured Acres Reported
Provincially	84.61 bu/ac	101%	100%
Perth	95.29 bu/ac	101%	100%
As of Dec 15, 2020			

Average edible bean yields (Perth Co)

Crop	2020 average yield	Compared to history
Azuki beans (Province)	1,556.47 lb/ac	89%
Japan/other beans	2,823.33 lb/ac	122%
Kidney beans	2,847.46 lb/ac	128%
Black beans	2,979.77 lb/ac	122%
White beans	2,723.93 lb/ac	115%
Cranberry beans	2,648.65 lb/ac	116%
Spring Wheat	69.3 bu/ac	115%
As of Dec 15, 2020		

Winter Wheat Planting
2021 Crop

Crop	Number of Endorsements	Sum of Effective Acres
Winter Spelt – Organic	16	1,778
Winter Wheat – Hard Red	357	48,537
Winter Wheat – Organic	66	5,847
Winter Wheat – Soft Red	6,028	720,356
Winter Wheat – Soft White	191	22,162
TOTAL	**6,642**	**796,902**
As of Dec. 15, 2020		

Total Claims as of Dec 1, 2020

	Crop Year (Counts)		Variance +/-	Crop Year (Value of Claims)		Variance +/-
CLAIM DESC	**2019**	**2020**	**2020 vs 2019**	**2019**	**2020**	**2020 vs 2019**
ABANDONMENT	31	46	15	$1,518,416.96	$2,522,328.71	$1,003,911.75
EXCESS RAINFALL	245	94	-151	$3,856,423.62	$1,431,162.74	-$2,425,260.88
PRE-HARVEST CLAIM	25	196	171	$108,893.12	$1,037,036.54	$928,143.42
PRODUCTION	3564	2999	-565	$38,844,752.63	$30,408,087.04	-$8,436,665.59
RESEEDED	3515	1808	-1,707	$31,014,667.12	$16,628,926.56	-$14,385,740.56
SALVAGE	49	44	-5	$416,422.93	$161,581.59	-$254,841.34
USAB	2358	54	-2,304	$65,207,582.03	$621,536.81	-$64,586,045.22
OTHER	54	51	-3	$1,406,678.46	$1,918,649.28	$511,970.82
Grand Total	**9,841**	**5,292**	**-4,549**	**$142,373,836.87**	**$54,729,309.27**	**-$87,644,527.60**

Questions?

contact@agricorp.com

1-888-247-4999

Visit Agricorp.com for information on program updates including our refreshed Contract of Insurance.

2020 Perth Demo Farm Wheat Trial Results

(all treatments were replicated 3 times per site, all wheat plots had 100lbs/ac MAP starter applied in row.)

Title: Relay Bean Trial

Purpose: The objective of this project is to investigate and determine farming practices that allow Relay Cropping Wheat and Soybeans to have a consistent net economic return higher than either crop grown as a monocrop.

Results:

Table #1. Background Information

Year	Location	Winter Wheat Nitrogen Rate	Winter Wheat Planting Date	Soybean Planting Date	Winter Wheat Harvest Date	Soybean Harvest Date
2018	Bornholm	120 N	20-Oct	11-May	31-Jul	15-Oct
2019	Bornholm	120 N	16-Oct	9-June	12-Aug	20-Oct
2020	Bornholm	120 N	20-Oct	18-May	29-July	11-Oct

Table #2. 3 Year Yield Results (bu/ac)

Year	Site	7.5" Wheat	Twin Row Wheat No Soybeans	Twin Row With Soybean	Relay Soybeans	Check Soybeans
2018	Bornholm	74.0	69.5	60.2	17.2	60.7
2019	Bornholm	74.5	67.1	58.0	16.9	52.0
2020	Bornholm	87.9	71.1	59.1	5	66.1
Average		**78.8**	**69.2**	**59.1**	**13.0**	**59.6**

Table #3: 3 Year Total Revenue

Year	7.5" Wheat	Twin Row Wheat No Soybeans	Twin Row With Soybean	Relay Soybeans	Relay Soys Total	Check Soybeans
2018	$540.25	$507.61	$439.49	$257.66	$697.15	$678.02
2019	$543.85	$489.83	$423.40	$253.16	$676.56	$778.96
2020	$641.41	$519.10	$431.09	$74.90	$505.99	$990.18
Average	**$575.17**	**$505.51**	**$431.33**	**$195.24**	**$626.57**	**$815.72**

Wheat Valued at $7.00/bushel Soybeans Valued at $14.70/bushel

Summary:

Overall there was a 12% (9.6 bu/acre) reduction in wheat yield going from 7.5" inch rows to twin row wheat. An additional 14% (10.1 bu/acre) reduction in yield was found with the inter-seeded soybean treatment. A large portion of this additional yield loss likely occurred during the harvest process as some of the heads get pushed under the header. This could be corrected by use of a row crop header, but we have been unable to find one that would work on the research combine. Winter wheat variety selection could also have an impact on harvestability. Choosing a variety that stands upright in the row vs one that branches out will cause fewer heads to be pushed under the header. Economic analysis showed a net increase in gross return of $51.40/ac with the relay soybeans system before any additional costs of establishment were included, and without considering the value of the straw. It should also be restated that these economic calculations were done valuing soybeans at $14.70/ bushel and changes in crop value will impact outcomes. It is important to note that the twin row wheat contained more weeds then the 7.5" wheat. The value of crop canopy cannot be overlooked when evaluating cropping systems. As well, planting relay soybeans into the wheat crop drastically limits the herbicide options that can be used in the wheat crop. While all treatments had a herbicide applied prior to wheat planting, the herbicide options that are registered both in winter wheat and pre-plant in soybeans is

extremely limited. In some cases there may be problem weeds that are not controlled by these herbicides. For a more detailed report featuring results from other locations refer to the OSCIA crop advances.

Title: SeederForce Evaluation

Purpose: To investigate the impact Precision Planting's SeederForce and individual gang down pressure system has on wheat establishment and ultimately yield. No-till wheat planted at 2.0 million seeds/acre on October 20th into moist conditions.

Results:

Table #4: Impact of SeederForce and Various Down Pressure on Yield (bu/acre)

MPH	Down Force		Yield
5.5	SeederForce	25lbs	84.9
5.5	SeederForce	50 lbs	88.1
5.5	SeederForce	75 lbs	78.0
5.5	Standard	200 lbs	87.6
5.5	Standard	300 lbs	92.5
5.5	Standard	400 lbs	86.8

Table #5: Impact of Planting Speed on Yield (bu/acre)

MPH	Down Force		Yield
5.5	SeederForce	25lbs	84.9
4	SeederForce	50 lbs	88.2
5.5	SeederForce	50 lbs	88.1
7	SeederForce	50 lbs	87.5
5.5	SeederForce	75 lbs	78.0
7	SeederForce	75 lbs	90.0
5.5	Standard	200 lbs	87.6
5.5	Standard	300 lbs	92.5
5.5	Standard	400 lbs	86.8
7	Standard	400 lbs	88.4

Summary: There was no visual or measured statistical differences in yield between treatments. Surprisingly, even planting speed had no impact on wheat yields.

Title: Sulphur on Wheat

Purpose: Determine the existence of sulphur(S) deficiency and yield response to sulphur fertilization across a wide variety of soil and climatic conditions in Ontario for corn, winter wheat and soybeans following their typical rotational crops in each of 3 years. Soil samples will also be collected and saved from all experimental sites with associated yield data in anticipation of developing and calibrating a sulphur soil test. Such a test could, in future, provide growers with guidance on appropriate rates of sulphur fertilization for field crops.

Results:

Table #6. Sulphur Yield Results (bu/ac)

Year	No Sulphur	10 lbs S	15 S
2019	73.6	81.8	80.4
2020	74.7	89.2	86.8

Nitrogen rates were adjusted so all treatments received a total of 120 lbs N/acre

Summary: In both years there was a substantial yield response to 10 lbs of sulphur but higher sulphur rates didn't appear to have any additional benefit.

CONTRIBUTED BY: Shane McClure and Peter Johnson

Title: Roots Not Iron – Multi-year Summary

Purpose: Considerable enthusiasm exists for the concept of having living roots in the soil at all times, but very little data is available to show yield impacts either long or short term. Unfortunately, while the enthusiasm for this idea is real, there has been a regression towards more tillage in Ontario, especially in certain areas, over last 5 years. While there is no survey data on this shift, virtually every agronomist agrees that it is extremely significant & disheartening from both a soil erosion & soil health standpoint. This means that coordinated trials for comparative data under Ontario conditions are essential. The Thames Valley/Heartland Tier 2 project of 2015-2018 showed significant negative impacts on yield in both corn and soybeans in the "plant green" plots compared to other treatments. These yield losses appeared to be associated with poor slot closure, as well as more inconsistent seed to soil and soil to plant contact. After 3 years of the project, no increase in soil health could be measured. This project continues the Thames Valley/Heartland Tier 2 "Roots Not Iron" project, with adjustments to the "plant green" treatment that will hopefully overcome the challenges noted above in the original project. The majority of the sites will continue on from the original project, which should also give an extended period of time for soil health improvements to develop and be measured.

Results:

Table 7: Roots Not Iron Crop Yields (bu/acre)

Year	Crop	No Cover	BMP	Roots Not Iron
2016	corn	203.1	201.0	185.9
2017	soybeans	57.9	59.6	56.7
2018	wheat	80.2	82.8	80.9
2019	corn	118.0	121.5	127.7
2020	soybeans	66.1	64.9	65.4

Summary: Results have been variable between treatments over the last 5 years but overall there has been little difference in yield. Adding in a spring strip-till pass and putting an emphasis on making sure the cover crop is brown by the time the corn emerges in the roots not iron treatment appears to have had positive impact on corn yields. Soil samples have been taken to compare soil health results between treatments but results are still pending. This trial may be continued for another 3 years, pending funding. If continued it will be to determine if the year 5/6 improvements in plant green and BMP yields continue or were an anomaly, as well as the addition of 3 new sites for length of time in the system comparisons. For a more detailed report featuring results from other locations refer to the OSCIA crop advances.

CONTRIBUTED BY: Shane McClure and Peter Johnson

2020 Perth Demo Farm Soybean Trial Results
(all treatments were replicated 4 times per site)

Title: Soybean Planting Depth Trial

Purpose: Some growers prefer to plant soybeans 2 inches or even deeper. This idea comes from the well-known fact that corn must be seeded at a good depth to achieve proper root structure. There has also been speculation that when planting very early it may be beneficial to seed deeper to avoid air temperature fluctuations. The purpose of these trials was to determine the optimal planting depth for soybeans across various planting dates.

Results:
Table #1. Soybean Plant Stands at Various Planting Depths (plants/ac X 1000)

Planting Depth	Planted April 22	Planted May 22	Planted June 10
1.0 inches	132	142	165
1.5 inches	134	135	159
2.0 inches	122	111	153
2.5 inches	95	117	130

No-till soybeans planted in 15 inch rows at 175 000 seeds/acre

Table #2. Soybean Yields at Various Planting Depths (bu/ac)

Planting Depth	Planted April 22	Planted May 22	Planted June 10
1.0 inches	62.9	65.7	51.6
1.5 inches	64.1	66.3	50.8
2.0 inches	60.8	60.1	49.8
2.5 inches	59.5	60.9	47.1

No-till soybeans planted in 15 inch rows at 175 000 seeds/acre

Summary: The best plant stands were achieved from planting less than 2.0 inches deep, if adequate moisture is present. See Table #1. Lower yields were realized when seeding was 2.0 inches or deeper for the first two planting dates and 2.5" at the third planting date. See Table #2. A 1.5" planting depth seems to strike the best balance between getting good seed to soil contact, adequate moisture, but also placing deep shallow enough for quick emergence.

Title: Soil Temperature Impact on Plant Stands and Yield

Purpose: In late April soil conditions were ideal for seeding but temperatures were extremely low. The purpose of this trial was to determine what impact cold soils would have on plant stands and final yields.

Results:
Table #3 Soybean Plant Stands and Yields at Various Planting Temperatures

Planting Date	Temp. at Planting (C)	Coldest within 12 hours (C)	Plant Stand (plants/ac)	Yield (bu/ac)
April 22	3	-4	134	64.1
April 25	13	0	148	63.4
April 27	15	0	142	62.4
May 22	23	10	135	66.3
June 10	30	13	159	50.8

No-till soybeans planted in 15 inch rows at 1.5" and 175 000 seeds/acre. (plants/ac X 1000)

Summary: The April 22 planted soybeans endured 13 nights when temperatures dipped below freezing. Although plant stands were slightly reduced yields were comparable to the May 22nd planting date. This trial shows that soybeans can endure very cold temperatures before emergence. Although planting in April was not detrimental to yield it was also not

beneficial in this trial compared to the May 22 planting. The success of this early planting date was likely due to the fact that conditions were also relatively dry. Soybean seed does not respond well to soils that are cold and wet.

Title: Foliar Fungicide and Nutrient Yield Response

Purpose: Applying a foliar fungicides has become standard practice for wheat growers and is gaining acceptance in corn production. The purpose of this trial was to assess the possible yield benefit to a foliar fungicide application to soybeans even when no obvious white mould disease pressure is evident. A foliar nitrogen and potassium product was also tank mixed with the fungicide.

Results:

		Location	Bornholm	Elora	Winchester	Average	Advantage
		Planting date	22-Apr	13-May	06-May	bu/ac	bu/ac
	Treatments:	Previous crop	corn	corn	corn		
1	Control		58.3	51.1	57.8	55.8	
2	Stratego Pro R1.5		62.6	52.4	58.8	57.9	**2.2**
3	Acapela R1.5		60.7	53.6	59.6	57.9	**2.2**
4	Stratego Pro R1.5 + Acapela R2.5		61.4	53.6	59.2	58.0	**2.3**
5	Stratego Pro R1.5 + Acapela R2.5 + Alpine SRN (R1.5 + R2.5)		61.1	53.5	60.7	58.4	**2.7**
6	Stratego Pro R1.5 + Acapela R2.5 + Alpine SRN (R1.5 + R2.5)		62.8	55.3	60.1	59.4	**3.7**
	Alpine K20S (R1.5 + R2.5)						
	Treatments Rates:						
1	Control						
2	Stratego Pro R1.5			230 ml/ac			
3	Acapela R1.5			350 ml/ac			
4	Stratego Pro R1.5 + Acapela R2.5			230 ml/ac + 350 ml/ac			
5	Stratego Pro R1.5 + Acapela R2.5 + Alpine SRN (R1.5 + R2.5)			230 ml/ac + 350 ml/ac + 8 L/ac + 8L/ac			
6	Stratego Pro R1.5 + Acapela R2.5 + Alpine SRN (R1.5 + R2.5)			230 ml/ac + 350 ml/ac + 8 L/ac + 8L/ac +			
	Alpine K20S (R1.5 + R2.5)			8 L/ac + 8 L/ac			

Summary: Although there was little foliar disease pressure evident, likely due to a dry June and July there was a 2.2 bu/ac advantage to spraying a foliar fungicide. Two applications of a foliar fungicide did not provide more yield. The addition of liquid K20S provided an additional 1.4 bu/ac yield.

Title: Intensive Soybean Management.

Purpose: Achieving maximum yield potential through intensive management without irrigation has provided inconsistent results in previous studies. A combination of fertilizers that included N, P, K, Mg, S, Zn, Mg, and B were applied in these trials. Two foliar fungicide applications were also applied in combination with these fertilizers.

Results:

		Location	Bornholm	Elora C	Elora A	Winchester	Winchester	Average	
		Planting date	25-Apr	13-May	13-May	06-May	02-Jun	bu/ac	Advantage
		Previous crop	corn	corn	alfalfa	corn	corn		
1	Control		62.8	52.9	54.8	56.7	49.7	55.4	
2	Urea		66.4	53.8	56.4	60.4	56.6	58.7	**3.3**
3	AMS		71.1	55.3	56.4	58.7	52.1	58.7	**3.3**
4	Aspire		63.1	57.6	58.6	65.5	56.1	60.2	**4.8**
5	Aspire + MESZ		69.5	54.2	60.4	57.6	52.4	58.8	**3.4**
6	Aspire + MESZ + Kmag		69.5	57.8	58.7	59.9	58.0	60.8	**5.4**
7	Aspire + MESZ + Kmag + AMS		72.0	55.3	59.6	63.4	56.7	61.4	**6.0**
8	Aspire + MESZ + Kmag + AMS + Fungicide		74.1	56.4	61.5	61.6	57.0	62.1	**6.8**
9	Aspire + MESZ + Kmag + AMS + Fungicide +		74.1	61.1	61.3	56.0	55.9	61.7	**6.3**
		Urea (R1) + Urea (R3)							

	Treatment Rates	(lbs/ac)
1	Control	0
2	Urea	50
3	AMS	100
4	Aspire	100
5	Aspire + MESZ	100 + 100
6	Aspire + MESZ + Kmag	100 + 100 + 100
7	Aspire + MESZ + Kmag + AMS	100 + 100 + 100 + 100
8	Aspire + MESZ + Kmag + AMS + Fungicide	100 + 100 + 100 + 100 + Stratego Pro (R1.5) + Acapela (R3.5)
9	Aspire + MESZ + Kmag + AMS + Fungicide +	100 + 100 + 100 + 100 + Stratego Pro (R1.5) + Acapela (R3.5)
	Urea (R1) + Urea (R3)	100 + 100

Urea = 0-0-46	(broadcast on surface after seeding or 2X2 band)
AMS = 21-0-0-24 (granular)	(broadcast on surface after seeding or 2X2 band)
Aspire = 0-0-58-0.5B	(broadcast on surface after seeding)
MESZ = 12-40-0-10S-1Z	(2X2 band)
KMAG = 0-0-22-10.8MG-22S	(2X2 band)

Summary: A significant yield boost was achieved with the combination of fertilizers and fungicides. The addition of nitrogen during the reproductive stages of plant growth showed no benefit on average. However, the addition of urea or AMS before planting in these no-till trials with relatively heavy corn stalk residue did show a small yield gain. At the Bornholm location an increase of 11.3 bu/ac was realized when all treatments were applied.

CONTRIBUTED BY: Horst Bohner (OMAFRA)
Contact: horst.bohner@ontario.ca

2020 Perth Demo Farm Corn Trial Results

Title: Strip Till Fertility Management

Purpose: As strip till gains in popularity, some of the most common questions revolve around P and K fertility management. This project was initiated to answer some of the more common questions, particularly:

1. How does yield of broadcast and incorporate P&K in a full-width tillage system compare to strip till with strip-placed P&K?
2. If a grower is on soil they are comfortable strip tilling in either the spring or the fall, from a yield perspective, is there a preferred time to do so?
3. If a grower fall applies P&K in the strip, is there yield response for moving a portion of this fertilizer to the planter as starter in the spring?
4. How does yield performance of strip till compare to full width tillage?

Results:

Table 1. Perth Demo Farm Strip Till Fertility Response Trial.

Treatment	Perth Demo, 2020	All Trials (10), 2019-2020
	---------- yield (bu/ac) ----------	
Two Pass Spring Finishing Disk, No P&K (fertility response control)	172	134
Two Pass Spring Finishing Disk, Spring Broadcast P&K	179	149
Two Pass Spring Finishing Disk, 50% Spring Broadcast P&K, 50% 2"x2" Planter Banded P&K	180	151
Fall Strip Till with Shank Placed P&K	175	151
Fall Strip Till with 50% Shank Placed P&K, 50% 2"x2" Planter Banded P&K	176	153
Spring Strip Till with Shank Placed P&K	178	156

* All treatments (except fertility control) receive total of 60 lb-P_2O_5/ac and 60 lb-K_2O/ac

** All locations are generally in moderately to highly responsive ranges for soil test P and K.

Summary: Most trials were conducted at locations with moderately to highly responsive ranges for soil test P and K, so yields would be expected to be responsive to P and K efficiency (placement, timing). Strip tillage was completed with a Kuhn Gladiator shank-style strip tiller. Shank depth was 6”, while fertilizer was placed at 4.5” for blend of fertilizer safety and response. As for the goals of this project:

1. Where locations responsive to P and K to start with?
    a. When evaluating fertilizer placement and timing, it’s important to know if trials were responsive to P&K. Comparing yields of full width tillage treatments where P&K were spring broadcast (treatment 2) to where P&K were not broadcast (treatment 1) indicates responsiveness. On average, there was a 15 bu/ac yield response to broadcasting 60 lb/ac of both P&K in the full width tillage system. As suggested by the low soil tests, these trials were responsive to P and K.
2. How does yield of broadcast and incorporate P&K in a full-width tillage system compare to strip till with strip-placed P&K?
    a. On average, there was a 7 bu/ac yield advantage for spring applying P&K with strip till compared to spring broadcast and incorporation of P&K under full width tillage. While there was a clear yield difference between these systems, unfortunately we don’t know how much of each different factor contributed to the yield response – the difference in spring tillage (strip till versus full width tillage) or differences in fertilizer placement (strip band vs broadcast).
3. If a grower is on soil they are comfortable strip tilling in either the spring or the fall, from a yield perspective, is there a preferred time to do so?

    a. On average there was a 5 bu/ac yield response to strip till and P&K placement in the spring compared to the fall. As before, while there was a yield difference, we can't know how much of each different factor (fertility timing, tillage timing) contributed to the yield response with the treatments imposed.
4. If a grower fall applies P&K in the strip, is there yield response for moving a portion of this fertilizer to the planter as starter in the spring?
    a. Overall, there was a 2 bu/ac yield response for splitting 60 lb/ac P&K applications between fall and spring (50% of P&K in fall strip, 50% as planter starter) relative to applying all P&K in the fall strips with no starter fertilizer at planting.
5. How does yield performance of strip till compare to full width tillage?
    a. Because of differences in fertility placement for these treatments, we didn't have true comparisons isolating only tillage effects. Yields of both systems where very comparable (Table 1), demonstrating strip till could accomplish yields very similar to full width tillage. The only exception to this was the spring strip till P&K treatment which on average was higher yielding than the full width tillage treatments, likely driven by the high rates of fertilizer applied close to the seed on low fertility soils.

Title: 60" Corn Rows

Purpose: There is interest in 60" corn rows to better establish cover crops during the growing season. Some growers in the US corn belt have reported no yield loss for 60" corn relative to 30" corn while achieving better cover crop growth. This trial investigates the yield impact of 60" vs 30" corn rows planted at the same population. Given increased concentration in the corn row for wider rows, some ask how population impacts yield response to wider rows. Three populations are tested to evaluate this.

Results:

Table 2. Corn yield response to 30" and 60" corn rows at three different populations.

Seeding Rate	30"	60"
	---------- *yield (bu/ac)* ----------	
16,000/ac	148	119
24,000/ac	162	139
32,000/ac	173	138

Summary: Yields for 60" corn rows were consistently lower than 30" rows across all three populations. Environment may have an impact on yield response. During hot, dry conditions of early July, 60" corn rows with more plants per foot of row showed more drought stress than 30" rows, possibly a result of greater evapotranspiration from more plants within the wide corn rows. Corn was planted late May, which may have been less conducive for success in wide rows. Another downfall of wide rows was significant late-season weed growth between the 60" corn rows, though this could possibly have been reduced had a competitive cover crop been established.

Title: Sulfur

Purpose: Over past decades, atmospheric deposition of sulfur has been in decline while corn yields have increased. This is expected to eventually increase requirements for sulfur. There is interest in determining the portion of time corn yields respond to sulfur in Ontario.

Results:

Table 3. Corn yield response to three sulfur rates applied as ATS with UAN at sidedress.

Sulfur Rate (lb-S/ac)	**Yield** (bu/ac)
0	178
10	181
20	177
30	178

Summary: No significant yield response to sulfur applied with sidedress was observed at Bornholm in 2020.

Title: Boron

Purpose: There has been increasing interest in boron fertility in corn. Some agronomists have reported yield responses to boron in on-farm trials in Ontario.

Results:

Table 4. Corn yield response to three boron rates applied with UAN at sidedress.

Boron Rate (lb-B/ac)	**Yield** (bu/ac)
0	179
0.5	182
1	179
3	179

Summary: No significant yield response to boron applied with sidedress was observed at Bornholm in 2020.

Thanks to Perth Soil and Crop for continuing to provide the Perth Demo Farm to support OMAFRA Field Crop Staff with applied research projects. The support is sincerely appreciated and is a significant contribution towards our extension efforts.

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(2019 photo)

2020 EVALUATION OF GROWING SOYBEANS IN CRIMPED CEREAL RYE.

Purpose:
The cereal rye cover crop trial at Bornholm was conducted to evaluate the impact of rye cover crop management in spring on the subsequent soybean crop. Specifically, the goal was to attempt to grow a soybean crop without herbicides using only a crimped cereal rye mulch for weed control. To that end, two soybean seeding rates and two soybean seeding dates were compared, as well as seeding soybeans into an early-terminated rye cover crop. Rye was drilled at a high rate (170 lbs/acre) on September 27, 2019. The trial's six treatments were as follows:

1) No rye (control) – soys seeded June 9, 2020
2) Early terminated rye (sprayed April 27, 2020) – soys seeded June 9, 2020
3) Crimped rye (soybeans seeded on June 9 and rye crimped on June 13) w/ soys seeded at 300,000 seeds/acre
4) Crimped rye (soybeans seeded on June 9 and rye crimped on June 13) w/ soys seeded at 225,000 seeds/acre
5) Crimped rye with earlier-seeded soybeans (soys seeded May 23 @300,000 seeds/ac, rye crimped June 23)
6) No rye (control) with earlier-seeded soybeans (soys seeded May 23 @300,000 seeds/ac)

Summary:
The highest yielding plot was the early seeded soybeans without rye, yielding an impressive 75.4 bushels/acre (see table below). Soybeans seeded on the exact same date, at the same seeding rate, into cereal rye at boot stage yielded approximately half (37.6 bu/ac).

For the later seeded soybeans, the no rye control also yielded almost twice that of the plots with crimped rye. Interestingly, despite being sprayed off almost 1.5 months before soybean seeding, the treatment with early-terminated rye showed a trend toward slightly lower yields.

Crimping after planting did cause some stand damage in treatments 3, 4 and 5, but not enough to explain the yield differences. The roller crimped rye, for the most part, did an excellent job suppressing weeds throughout the season at this site, despite a relatively thin stand. It's believed that a low weed seedbank assisted in this regard.

The dramatic yield difference between no rye/early-terminated rye and roller crimped rye treatments is believed to be due to severe stunting by the rye, which was exaggerated by drier-than-normal conditions in May and June. Soil moisture sensors on site indicate that plots with crimped rye had less moisture than those without.

The results at the Perth Demo Farm were consistent with yields from other trials across the Heartland Region in 2020. Average yield in the roller crimped system was just over 30 bu/ac, while no rye treatment yield was around 50 bu/ac.

This trial will be repeated at the Perth Demo Farm in 2021.

Table 1. Summary of average yields from all six treatments. Each value is the mean of four replicates. Although statistics have not yet been performed, yield values between replicates were very consistent.

Treatment	Soybean yield (bu/ac)
1. no rye (control) - rye sprayed in fall	**60.7**
2. early terminated rye - sprayed April 27	**57.5**
3. plant then crimp - soys seeded into standing rye at 300K seeds/acre	**33.2**
4. plant then crimp - soys seeded into standing rye at 225K seeds/acre	**30.5**
5. early seeded soybeans (into growing rye) – planted May 23, crimped June 23	**37.6**
6. early seeded soybeans (no rye)	**75.4**

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PERTH SCIA 2020 ANNUAL MEETING MINUTES

Perth Soil and Crop Improvement Association Annual Meeting Minutes

January 16 2020 -West Perth Community Center

The Annual Meeting began speaking with many of the Perth Soil & Crop sponsors from various parts of the industry with the dinner beginning at 6:42pm. Huron Shores Catering from Granton was the caterer for the evening.

The business started at 7:39pm with a thank you to the caterer and also to our sponsors. Kaye McLagan opened up with a recap on the 2019 season and the challenges farmers had throughout the season. This spring was filled with a delay in planting due to Mother Nature bringing up more precipitation than usual. The delay in spring resulted in a later harvest date. Kaye also introduced the Twilight Meeting that will be held July 15th at the demo farm featuring Wheat Pete, Horst Bohner, Jake Minroe and Ben Rosser.

Kaye read the minutes from the 2019 AGM which were approved by Kevin Brown and seconded by Tina Beirnes. Kaye directed all attendees to the financial statements for year end both in the booklet and on the slides for the meeting, the minutes were approved by James McLagan and seconded by Dale Schieck.

Stuart Wright, Provincial Director OSCIA brought greetings from the Provincial level on behalf of Lois Sinclair and shared the events going on within OSCIA.
Horst Bohner, Soybean specialist from OMAFRA gave a Demo Farm update as well as a greater OMAFRA Trials update for the year.
David Connery from Agricorp spent most of the business minutes going over the DON situation for both the grower side and Agricorp side in salvage benefits. They stated this will be the program going into 20120 if there ends up being an instance of DON. David also went through yield averages for Wheat, Soybeans, Corn and Edible Beans that were reported for the Region.
Doug Johnston spoke about the upcoming Manure Expo to be held August 26-27 at Maplevue Farms.

The last set of business was the election of the 2019 Perth Board of Directors. Mary Felskov conducted the election. All Directors spots were made vacant. The new board members were elected as follows: John Poel, Ivan Roobroeck, Kaye McLagan, James McLagan, Josh Boersen, Kevin Brown, Henry Groenestege, Tim Meulensteen, Don Green, Kaylene Sangers, Maggie McDonnell and Tina Biernes. At 8:15pm, Kaye moved that the business section of the meeting be adjourned.
Kaye introduced the guest speaker for the evening, Dennis Pennington of MSU Extension.

As provided by Brooklyn Johnston.