Ontario Canola Growers Association April 2017 Newsletter

President's Message from Craig Reid

Hello again! After an up and down winter it's hard to believe that spring planting is just around the corner, but here we are again. As I look ahead to the 2017 growing season I can't help but focus on the positives for Ontario's canola industry. First, with the grain markets entering one of the most volatile times of year, I look at the returns per acre from canola and it's still extremely competitive. The value of its inclusion in the rotation beyond the cash returns are hard to argue. Timely wheat planting, spreading the workload at harvest time and the ability to market a high value crop earlier in the year to help with cash flow needs are all positives that canola provides.

We also see canola continuing to expand into new parts of the province. With more acres each year in eastern Ontario OCGA is taking our annual Crop Production Center to Renfrew, where we are being hosted by Barclay Dick and Sons on Friday, July 14, 2017 to help highlight best management practices to the new and expanding grower base in central and eastern Ontario. This would also be a great time to travel the extra 50 minutes to Ottawa and visit the Canadian Agriculture and Food Museum where a huge canola exhibit is being unveiled on April 1st as part of Canada's 150th birthday for our great country. The history of canola, is continued growth and evolution and its status as a made in Canada success story of innovation and vision will be major focuses of the exhibit. All of the provincial grower groups as well as Canadian Canola Growers Association supported the creation of the exhibit. If you get a chance to see it please check it out! We also have a field day happening in western Ontario. Deb Campbell of Agronomy Advantage is coordinating some intensive management trials of canola looking to

unlock consistently higher yields. You will find a write-up with the details later in the newsletter and OCGA also decided to support this initiative and the field day that Deb will be hosting on July 11, 2017. Both of these field days support OCGA's mandate of increasing the profitability of canola production for our members; one will be demonstrating known best management practices while the other looks to help us discover a new yield plateau for canola and push the boundaries of what we are currently capable of. I would encourage everyone to attend one or both of these days, and bring a neighbour. Canola has a great story to tell, and can be a key part of a profitable farm operation.

While I see a lot of positives for canola I also have to acknowledge some of the challenges we are facing. Swede Midge hasn't gone away, and while we all hope for a silver bullet solution the more we learn about this particular pest the clearer it becomes that we won't find an easy button to help us manage it. Dr. Rebecca Hallett and her team at the U of Guelph continue to focus on

Canada Post Publications Agreement #40013291

President's Message continued….
swede midge ecology and control strategies. In 2016 a parasitic wasp was found in central Ontario that exhibits high levels of parasitism. This is a tremendous positive, and more work is ongoing to try and determine which management strategies have positive and negative effects on the presence and activity of this parasitoid. With that being said we are still recommending that rotation is the best form of control, but only if volunteer canola and related weed species are controlled at all times throughout the rotation. Along with rotation pheromone traps to track swede midge populations and target insecticide applications when required on a field by field basis is still the best approach both to control or suppress swede midge and to limit the potential negative impacts on the parasitic wasp. Dr. Hallett is evaluating the potential for new insecticides as well as developing more predictive models for swede midge infestations so, when we do need to spray it is more effective. We haven't got this one beat, but it certainly feels like we are making progress.

Finally, we are moving ahead on some research projects that aren't focused on swede midge. There are some projects in the works to take another look at winter canola in the southern parts of the province which aren't suitable for spring canola production. Recent changes to the winter canola registration guidelines should make it easier to access new hybrids and potentially new trait technology in winter canola that could open up a big part of Ontario that hasn't seen much canola in the last 20 years. We continue to support research like Deb Campbell's that can help us push canola to higher yield levels and make it more profitable, as well as rotation work to see where and how it can fit on more farms and lengthen rotations. The hope is this work can make canola more profitable, and make every other crop in the rotation more profitable by lengthening it out and helping to support higher yields throughout.

Canola's history, and really its beginning as a distinct crop have been marked by vision, innovation and a willingness to be different and not accept the status quo. I am convinced that canola has a bright future here in Ontario if we continue to look to the future and seek the opportunities for it. As an industry we have a great story to tell about where we came from and where we are. Our challenge is to write the next chapter in that great story. It all starts with seeding this spring. I wish everyone good health, fair weather, and a safe and prosperous 2017.

Craig Reid,
President,
Ontario Canola Growers Association

Canola Challenge 2017

1st place winner – $2,000 cash

2nd place winner – $1,000 cash

3rd place winner – $ 750 cash

4th, 5th and 6th – $500 cash

How Do You Enter ?
and
What are the Rules?

1. Complete "Intent to Participate" and submit by July 31, 2017.
2. Work with a supporting agronomist.
3. Minimum 10 acre canola plot.
4. Record your yield from 1 acre of your field which must be recorded by weigh wagon and verified by your supporting agronomist.
5. Record your cropping and yield information and submit by Oct 15, 2017.

"Intent to Participate"
Must be submitted by July 31, 2017

Name _____

Phone _____

Email Address _____

Supporting Agronomist _____

Agronomist's Company _____

Phone: 519-986-3519 Fax: 519-986-3811
Mail to: Box 106, Markdale, ON N0C 1H0
Or email information to: info@ontariocanolagrowers.ca

Sponsored by:

BUNGE

ADM

DUPONT

PIONEER

BAYER Bayer CropScience

2017 Crop Production Tour
Friday, July 14, 2017 — *Save the date!*

Ontario Canola Growers Crop Tour

Barclay Dick & Son Farm Supply
4139 AB Highway 60, Douglas,
Renfrew County, Ontario

Friday, July 14, 2017

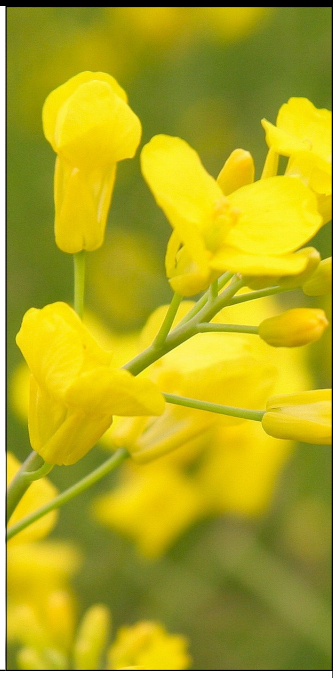
10:00 am to 2:30 pm

10:00 am to Noon — 5 agronomy stations

Barbeque Lunch

1:00 to 2:00 pm — Panel on canola harvest, drying and storage.

No Registration required.



Agronomy Stations

1. **Field Trials Tour**
   - Variety Trial including Bayer L252, L230, L233P (pod shatter reduction) and L241C (Clubroot resistance)
   - Singulated seeding in 30” rows with seeding rates of1.75, 2, 2.5 and 3 lbs/ac.
   - Fungicide Trial with Proline (Bayer) a nd Contegra (BASF), Vertisan (DuPont)
   - Boron Trial — with Agro100’s AgroB and Alpine boron product at .8 litres/ac
2. **Seeding Rates and Populations**
   A demonstration of seeding rates and plant populations at various stages of growth. Watch a time lapse video showing canola plants at emergence and how they much branch and fill in over a season.
3. **Soil Pit**
   Demonstration of soil profile and structure, canola root penetration, compaction evidence, and water movement in soil.
4. **Canola Nutrient Deficiency Symptoms**
   Learn about various canola nutrient deficiency symptoms and how to correct them.
5. **Canola Insect and Disease — ID and Thresholds**
   - Swede midge — How to trap, identify, monitor and treat for control.
   - Flea beetle — Crucifer or black?. How to estimate damage thresholds.
   - Club root — How to identify and manage.

Barclay Dick & Son Farm Supply
is celebrating its 25th Anniversary
and invites all crop tour attendees to stay
for an evening celebration.

Reception: 5:30 pm

Dinner: 6:30 pm

Barn Dance with the Ghost Town Cryers

Barclay Dick & Son
Farm Supply

Does harvesting an extra $68 from every canola acre catch your interest?

Several Ontario farmers have had first hand experience in using a flex header modified for canola harvesting to increase their canola yields This article highlight their sexperiences as well as the results of a field trial that OCGA conducted comparing header losses and yields when harvesting with:

- New Holland(CF740), 35-foot flex head,
- Case IH, 40-foot draper head,
- Modified John Deere(930), 30-foot flex head. The modified header had the flex pan removed and replaced with a solid pan with 18-inch table extension, as well as vertical side cutter knife on the right divider.

Header losses were measured by placing 8 pails (5.75 inch diameter) on the ground in the canola canopy across the width of the header (Figure 1). In addition, 4 pans measuring a total area of 0.64 sq ft were placed on the divider side of the header to measure canola losses at the divider. Containers were placed where combines exited the canola plot to ensure headers were operated to receive normal capacity of plant material. There were 3 replications for each combine.

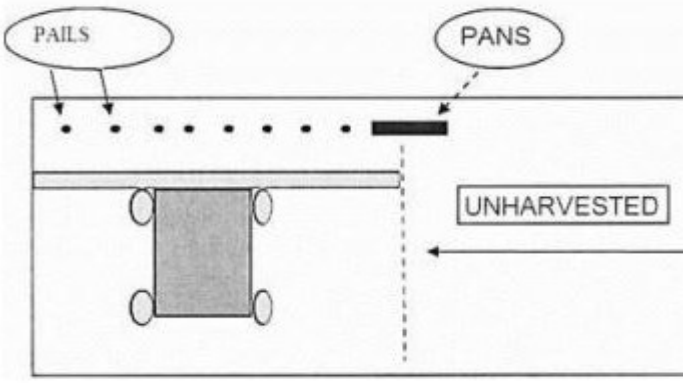


Figure 1

When compared with a regular flex header canola seed loss was:

- **76% less with the modified header and**
- **60% less with the draper header.**

This results in an 8 to 10% yield boost with the modified header.

	% loss on average of 2,000 lbs/ac
Modified Header	.09%
Flex Header	10 %
Draper Head	2.2%

Brian and Jon Wiley operate a cash crop and dairy farm near Meaford in Grey County. In 2016 they ran an on-farm trial with a recently purchased used flex header, modified for canola. Their trial results showed this modified header brought in an additional 300 lbs per acre in comparison to their regular flex head.

If you use $500/tonne as a sample price the additional revenue from 300 lbs would equal $68 per acre. If you apply this to the 200 acres of canola that the Wiley's harvested in 2016, using the modified header brought them an additional $13,600. The modified header more than paid for itself in one season.

This photo illustrates the extended table feature on modified header. Photo by Brian Wiley

Elmer Martin near Owen Sound was the owner and operator of the modified canola header in our 2012 header comparison trial. Elmer has been using this header for 15 years of canola harvests so he obviously sees the benefits. He even began helping other interested farmers assemble headers modified for canola. In recent years, Elmer has made an additional improvement by adding a second cutter bar on the left so that farmers can now harvest the crop in both directions.

Bill Ceaser near Lions head on the Bruce Peninsula purchased a flex head and had it modified by Elmer Martin. He has now had the modified head for four growing seasons and estimates it has given him an 8 to 10% gain in yield.

Bill says purchasing this header has been well worth it with his average annual canola acreage of 200 to 300 acres.

Next Steps? OCGA is looking into another trial comparing a regular flex head with the modified head in 3 or 4 fields in 2017. As well Elmer Martin offered to help us document the modification process for other interested farmers. Elmer estimates the cost of these modifications at $4,000 to $4,500.

2017 Canola Learning Centre
Tuesday, July 11, 2017 — *Save the date!*

Producers have long known the benefits of canola in their rotation. Having a diverse rotation breaks up the disease and pest cycles. Canola helps producers to optimize wheat planting timing and achieve high yields as a result.

But occasionally yield stability and profitability can be a challenge in canola production. Canola competes with soybeans for those oilseed acres and at times can be at a disadvantage in Ontario to claim those acres.

To help you maximize the profitability of your canola acres the

2017 Canola Learning Centre

will demonstrate a comprehensive agronomy trials comparing canola seeding rates, nitrogen rates and row widths.

- ➔ Both seed and nitrogen treatments will escalate from low, medium to high.
- ➔ Seeding rates will range from 78 to 141 seeds/sq m.
- ➔ N rates will range from 2 lb/bu to 3lb/bu. A standard rate of N and S will be applied pre-plant.
- ➔ UAV imagery will be used to measure canopy density and vigour. The balance of N and S will be applied in-crop at fill rosette.
- ➔ All treatments will be done in 7.5 inch rows and repeated with twin rows or 15 inch rows depending on equipment availability.
- ➔ The treatments will be monitored for emergence timing, branching, flowering timing, and maturity.
- ➔ The entire site will be planted with a hybrid with pod shatter technology.
- ➔ All treatments will be taken to yield. Each treatment will be weighed off using a standard head and a canola head with an extended table to assess harvest loss.
- ➔ Grain samples will be analysed for protein and oil content across the treatments.
- ➔ Input costs will be tracked and profitability will be analysed.
- ➔ **Multiple learning stations to learn about the latest in canola agronomy.**

We invite canola producers, advisors and industry reps to join us on ***Tuesday, July 11, 2017*** *near Arthur, Ontario to see this project in the field.*
Save the date and watch our website for further details at www.ontariocanolagrowers.ca

This trial is being hosted by Deb Campbell with Agronomy Advantage, and supported by the Ontario Canola Growers and OMAFRA.

Understanding Clubroot

by Meghan Moran, OMAFRA Canola and Edible Beans Specialist

Canola growers in Ontario have a new pest to contend with. In 2016 clubroot (*Plasmodiophora brassicae)* was detected in fields across Ontario.

Clubroot is a disease that should be taken seriously and managed carefully, but should not prevent Ontario farmers from successfully growing canola.

This article contains information on the clubroot life cycle, use of resistant varieties, and results of a preliminary Ontario survey for clubroot. You can learn a great deal more about clubroot at www.clubroot.ca . But the #1 task for all Ontario canola growers is this: look at canola roots in symptomatic areas of each field. Above ground symptoms are similar to other diseases or nutrient deficiencies and include yellowing, wilting, stunting, premature ripening and plant death. It will appear in patches, and often near the field entrance or in wet areas. Each year, in each canola field, pull up plants to check for galled roots in areas with these symptoms through the summer or as the crop begins to ripen.

Life Cycle and Conditions for Infection

Clubroot is a very persistent and unusual soil-borne organism that requires Brassica plants for reproduction. Resting spores exist in upper soil layers for up to 20 years. They are stimulated to germinate and become zoospores when canola (or other Brassica species) roots release nutrients. The zoospores have flagella (whip-like tails) that allow them to swim towards roots. They move into root hairs, and a few days later secondary zoospores are released. These secondary zoospores can then infect the entire root surface, not just root hairs, and cause the symptoms that lead to yield loss.

As disease spreads through the root tissue a hormonal response causes excessive root growth, producing the clubbed or galled root symptoms that clearly identify the disease. Clubbed roots cannot take up nutrients or water properly, which leads to aboveground symptoms and potentially plant death. As the roots decay, new resting spores are released to the soil.

The initial zoospore is able to easily swim towards roots when conditions are wet. If soils are dry the short -lived zoospore may not reach the roots, so in dry years we generally see less clubroot infection. Soil pH below 6.5 can also slow spore germination and infection, but does not prevent disease development. If infection occurs early in the season, greater numbers of secondary zoospores are produced leading to greater yield losses. Light levels of infection may not cause yield loss but billions of resting spores can still be released from a single infected root.

Young clubroot galls

Photo credit to the Canola Council of Canada

Moderate clubroot infection

Photo credit to Manitoba Agriculture

Resistant Varieties

The root hairs of both resistant and susceptible canola varieties are infected by the initial zoospore released from resting spores in the soil. However, secondary zoospores are not able to infect the roots of resistant varieties so the symptoms and yield loss do not occur.

There are different pathotypes of clubroot in Canadian soils, which are essentially different strains of the disease. A clubroot resistant canola variety will only protect against a specific pathotype. Clubroot-positive fields in Brassica vegetable production (cauliflower, broccoli, cabbage etc.) in Ontario were confirmed as having pathotype 6 in surveys from the 1970's. In Alberta it has historically been pathotype 3 that caused economic damage in canola. Unfortunately at this time we do not know what pathotype has infected the canola in Ontario, but the lengthy analysis process is currently underway.

Resistant varieties can lose their utility over time, and this has been the recent experience of canola growers in Alberta. Growing a variety that is resistant to one pathotype creates a selection pressure that allows proliferation of other pathotypes. For example, where varieties resistant to pathotype 3 have been used in clubroot-positive fields in Alberta, the canola is now being infected by pathotype 5x. If a field has moderate to high levels of clubroot spores, it is highly possible more than one pathotype is present.

"The hope that we will be able to develop resistance in the plant that lasts forever is not realistic, so crop rotation is definitely going to play a large part in clubroot management."

Use of resistant varieties is encouraged in Ontario at this time on fields where clubroot has been detected and for growers that are at risk by being near infected fields or sharing field equipment. They are particularly useful where spore counts are relatively low and long (4 year) rotations are in place, but may struggle to yield where spore counts are very high. Seed for clubroot resistant varieties is typically the same price as non-resistant varieties, so purchasing seed is not cost prohibitive. In Ontario, most seed companies are offering one or two clubroot resistant varieties.

Long Rotations Key to Management

Long rotations (4 years or more) are the key to keeping clubroot spore counts low. The half-life for clubroot resting spores is just under 4 years, so keeping Brassicas out of the rotation for 4 to 5 years prevents build-up.

In Alberta, depending which county you farm in a mandatory 4 year rotation may be imposed on fields where clubroot is detected. Renn Breitkreuz farms in Ononway, northwest of Edmonton, and was a guest at the OCGA AGM. Based on his experiences and discussion with other farmers Renn believes clubroot resistant varieties might be able to help once or twice but farmers cannot expect to use them as a silver bullet, and the only way to keep resistant varieties effective is through a 4 year rotation, at minimum.

Clubroot was detected in Renn's fields 4 years ago, and he grew canola again for the first time in 2016. At the end of the season the county officials did not detect clubroot in those fields.

Speaking to the pathotype-specific nature of resistant varieties and the breakdown of their utility, Renn states, "It seems to me that it's becoming harder and harder to find new forms of clubroot resistance. The hope that we will be able to develop resistance in the plant that lasts forever is not realistic, so crop rotation is definitely going to play a large part in clubroot management." In Ontario we have the opportunity to grow many crops in rotation, and canola growers should ensure rotations are long to manage clubroot as well as other pests like swede midge.

Sanitation — Rough Cleaning is Effective

Clubroot can be transferred in any way that soil moves from field to field, including through water movement, wind erosion and on farm equipment. The prospect of sanitizing field equipment is not one farmers or custom applicators happily welcome. It is a lot of work. But it is a key step in preventing or reducing the spread of the disease. Putting effort into sanitation will allow us to retain canola as a viable crop into the future.

Rough cleaning or scraping all loose soil off of equipment and tires between fields can take as little as 20 minutes and can remove 90% or more of clubroot spores present on the equipment. Recall that a few spores can turn into billions of spores over the course of one season, so this level of sanitation is reasonably easy and effective. This is recommended for all growers in areas where clubroot has been detected, where equipment or custom operators are shared with those working clubroot-positive fields, or for farmers who feel they are at risk. Work infested fields last and try not to run equipment in fields with wet soils that will cake equipment and tires. Follow up with pressure washing and sanitizing with a 1% bleach solution when equipment is put away.

Survey Results

In 2016 a preliminary soil survey was conducted across most major canola growing regions of Ontario. Soil samples were evaluated for a "yes or no" detection of clubroot. A total of 95 soil samples were taken from fields in the following counties and districts: Thunder Bay, Cochrane, Temiskaming, West Nipissing, Sudbury District (Noëlville), Renfrew, Lanark, Bruce, Grey, Wellington and Dufferin. Clubroot was detected in 11 fields total, 2 of which had canola plants expressing clubbed root symptoms. The 11 fields were located in Temiskaming (4), West Nipissing/Verner area (4), Bruce Peninsula (1), eastern Dufferin (1) and near the Dufferin/ Grey border (1). Maps of the survey results can be found at www.ontariocanolagrowers.ca .

Surveying for clubroot and determination of the clubroot pathotype found in canola fields will continue as funding permits. Please contact Meghan Moran at 519-546-1725 or meghan.moran@ontario.ca if any clubbed roots are found.

SWEDE MIDGE MANAGEMENT RECOMMENDATIONS

by Dr. Rebecca Hallett, University of Guelph

Crucial Factors in Swede Midge Management

- ➔ **Swede Midge must be monitored bi-weekly with traps to respond as needed (quickly) with treatment .**
- ➔ **It is extremely important to stay ahead of swede midge females laying eggs in buds and time applications properly as females only live for 1 to 5 days**
- ➔ **Adults emerge starting in mid to late May. Peak adult emergence is sometime around the first two weeks of June.**
- ➔ **Spray treatments must occur quickly after adult swede midge population threshold numbers are reached as they mate and lay eggs soon after emergence and larvae hatch 3 days later.**
- ➔ **If you wait until you see larvae or damage to canola buds, it is too late. The damage is done and irreversible.**

INSECTICIDE TREATMENT TIMING IS CRITICAL!

If the forecast is for warm, clammy conditions and you are relying on custom applicators, it may be advisable to book your applicator ahead of time. Swede midge populations can rise very quickly under these conditions.

- ➔ Plant canola early. Early planted canola consistently suffers less damage than later planted canola. Swede midge numbers are also typically lower early in the season. Depending on your area, it may be best to plant canola first.
- ➔ Crop rotation is very important. Swede midge only feed and breed on cruciferous plants, so it is important to:
  - Rotate canola with non-cruciferous crops.
  - Use a minimum 4 year canola rotation plan.
  - Avoid planting canola adjacent (ideally not within 2 kms) to previous year canola.

Treatment Recommendations

1. **Time the 1st insecticide treatment based on a total traps capture of 20 in 4 traps.**
   - ➔ From the 1st true leaf stage, count the number of midge on all 4 traps and add them up. **When you reach 20 in total,** it is time to put on the first insecticide application.
2. **Time subsequent insecticide treatments based on an average trap number of 5 midge per trap / per day.**
   - ➔ Count the total number of midges on each trap, add them together and divide by number of traps and number of days since you last counted.

   When average captures per trap per day reach 5 midge/trap/day, it is advisable to apply an insecticide treatment. Multiple treatments may be necessary.

- ➔ The most vulnerable stages of canola are during the vegetative (rosette) stage, when tiny flower buds are developing in the centre of the plant (before 'green bud' stage) and secondary leaf axils. These are the key stages to protect from swede midge infestation.
- ➔ Leave a minimum interval of 7 days between insecticide applications and rotate between products if possible.
- ➔ Both Coragen and Matador are registered for control. Do not use Coragen if you are using Lumiderm treated seed as they are both from the same chemistry family.
- ➔ Thorough spray coverage is critical. Use a medium droplet size. On larger plants (e.g. full rosette to bud stage) increase the water volume (20-25 gal/ac) to ensure good coverage.
- ➔ As plants get larger if using Coragen increase the spray volume to move the treatment into the growing point where swede midge eggs and larvae hide. Use of appropriate surfactant with Coragen can improve spray coverage. Follow label recommendations for insecticide and surfactant compatibility, with different surfactants available in the market.
- ➔ Both Coragen and Matador provide contact and residual activity and are rainfast when dry. Coragen moves through the leaf to both surfaces (translaminar) but growth that emerges after treatment is not protected.

Identifying Swede Midge

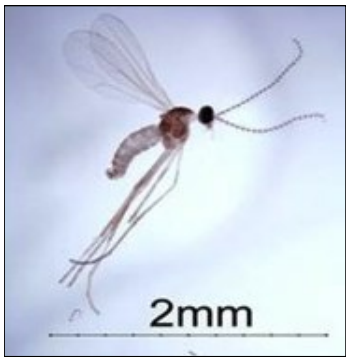
Due to its tiny size swede midge can initially be difficult to identify. Use the identifying features and a high power magnifier. A magnifying glass with 20X power is recommended (10X minimum). And once you learn to use the swede midge's distinct features for identification, it becomes much easier to spot them.

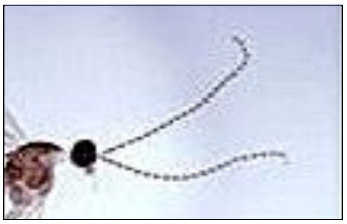
The primary identification clues for identifying swede midge found on traps are:

- Long beaded antennae
- Proportionally large transparent heavily veined wings
- Dark brown body colour (versus black of other flies caught on traps)

It is key to monitor for swede midge on traps to judge populations and treatment timing. Treatment must occur before swede midge have laid their eggs. Once swede midge have laid their eggs in canola buds treatment cannot reach the larvae that cause the irreparable damage.

For photos to help with identifying swede midge go to the Ontario Canola Growers website at www.ontariocanolagrowers.ca





The Midge found on Prairies is NOT Swede Midge

Researchers have discovered that swede midge damage found in the prairies is likely caused by a different midge species than the culprit responsible for so much damage in Ontario. This newly found species is a close relative to swede midge and has been found in a north canola-growing belt in Saskatchewan and into east central Alberta.

AgCanada researchers in Saskatoon became suspicious when traps with pheromone lures specific to swede midge did not attract the midge they saw in relatively high numbers in the field. As an experiment researchers sent these pheromone traps to Ontario to investigate if they attracted swede midge there and the traps lured plenty of swede midge. The next puzzle step was to confirm if this midge fly was actually a swede midge.

Samples were sent for further research to the University of Guelph Jamie Heal, (Dr. Rebecca Hallett's swede midge research team), first noted the morphological differences between the Western midge and swede midge. The samples were then sent to a taxonomist at CFIA in Ottawa where a molecular analysis confirmed that this definitely was a distinct species. The new midge is an undescribed species, in the same genus (Contarinia) as swede midge and does not yet have a scientific name or official common name.

Currently, the only confirmed damage symptoms caused by the newly-identified Western midge are similar to those caused by Ontario swede midge but it has not yet caused significant damage there. However researchers and agronomists do recognize that the potential for serious damage exists given the damage incurred in Ontario and the similarity between the two species.

Next steps are studies of the distribution of both species and focus on the biology of the new species. This will includes analysis of how many generations the Western midge can produce per season and its potential impact on yield.

Swede midge monitoring supplies

To effectively monitor swede midge: population counts must be recorded twice each week for 8 weeks after plant emergence.

Supplies to monitor one site:

You will need traps, liners and lures.

1. Traps: 4 per site – traps last for 8 weeks = 4 traps
2. Liners: 2 /week x 8 weeks x 4 per site = 66 liner**s**
3. Phermone lures: 8 weeks x2 x 4 per site = 8 lures

Cost of Supplies: The cost of supplies to monitor one site will be approximately $175.

Where to purchase:

Solida: Integrated Pest Management Supplies
Marc Charbonneau
418-826-0900
Email: info@solida.ca
480 Rang Saint-Antoine
Saint-Ferréol-les-Neiges QC G0A 3R0
Website: www.solida.ca

2017 Canola Research

Swede Midge Research Project
with Dr. Rebecca Hallett, University of Guelph

A swede midge parasitic wasp discovered by Dr. Rebecca Hallett's team in Dufferin county in 2016. The wasp has been identified as, *Synopeas Myles*, and was found to have killed 5 to 44% of swede midge larvae collected on plant samples.

The female swede midge lays her eggs in the concealed bud portion of bolting canola plants. And finding an effective control treatment that prevents the larvae from damaging canola flower buds has been less than optimal. Another factor making swede midge difficult to control with treatments is the quick swede midge life cycle with as many as 4 generations in a season. This rapid life cycle has resulted the need for multiple treatments in a season and still heavily populated fields have suffered unacceptable populations and losses.

Project Objectives

1. Develop effective methods to maximize the efficacy of insecticide applications targeted against swede midge in canola. This will include spray application adjustments that will more effectively target treatments into the bud area. And the most optimal timing for treatments.
2. Investigate the distribution, abundance and biological control potential of the swede midge parasitoid —*Synopeas Myles*.
3. Investigate the effect of control treatments on the swede midge parasitoid.

The ultimate objective of this study is to develop best management recommendations for sprayer operators to ensure that insecticides are used only when necessary, and to their maximum efficacy before posing a risk to the "*Synopeas Myles*" swede midge parasitoid.

The results of this research will contribute to the ongoing development of a comprehensive, integrated pest management program for swede midge in canola.

Precision/Singulated Seed Placement and 15" Twin Row Trials

In 2016 the OCGA Crop Production Centre hosted by Carl Brubacher included a trial on various seeding rates using the Monosem singulating planter in 15" twin rows. Despite severe lack of moisture on the Bruce Peninsula, late planting and swede midge pressure the trials resulted in impressive yields.

Seeding Rate	Yield	Variety
1.75 lbs/acre	3065 lbs/ac	Bayer L252
2 lbs/acre	2984 lbs/ac	Bayer L252
2.5 lbs/acre	3124 lbs/ac	Bayer L252
3 lbs/acre	2725 lbs/ac	Bayer L252

OCGA plans to continue this trial in 2017 and is planning six field trials in total working with co-operators in central, eastern and northern Ontario.

Winter Canola Trials

OCGA will be working with Dave Hooker at Ridgetown studying winter survival and yield of:

- 3 winter canola varieties with
- 5 planting dates.

Dr. Eric Page with AgCanada is also conducting interesting winter canola field trials at the Harrow Research station in southern Ontario:

Winter Canola Planting Date Trial

- 5 planting dates from Sept 1 to late Oct
- 3 winter canola hybrids (from Rubisco Seeds, KY)
  - Mercedes
  - Inspiration
  - CC17070
- Trial seeded with Monosem precision vacuum planter
- 15" twin rows

Double Cropping with Winter Canola Study

A block of Inspiration winter canola was seeded in the fall of 2016 and will be harvested in 2017.

After harvest, half of the block will be lightly tilled, while the other half will remain no-till.

Summer crops will be planted into these blocks to evaluate the feasibility of double cropping various corn and soybean varieties following winter canola.

Should I Use the Same Old Seeding Rate?

by Meghan Moran, OMAFRA Canola and Edible Beans Specialist

It's getting close to spring again and, of course, this article is all about calculating seeding rates and achieving a targeted plant density. Let's cut to the chase. Other than situations where a pneumatic row planter is being used, why should farmers worry about seeding rates outside of the standard 5 lb per acre?

It's true that with median seed sizes, average planting conditions and typical seed survival rates, 5 lb/ac should result in good stands and yields. But you might want to run through the calculations to be sure you are starting the season off right. There are some points to consider, the first of which is that thousand seed weight (TSW) can range from 3 to 6 grams per thousand. This can have a big impact on the number of seeds planted per square foot at a static 5 lb/ac seeding rate. Also, drills should be recalibrated when switching between seed sizes. Another consideration is that with canola, 1 seed through the drill does not equal 1 plant. In Ontario we expect to get 75% emergence in typical conditions, and often get less. In Western Canada, they typically see 50-60% of seeds emerge.

Calculate what the plant stand will look like with your seed size and seeding rate, along with a 75% and 60% emergence rate. With a TSW of 4.5 g and a 5 lb/ac seeding rate the drill will put down 11.5 seeds/ft^2 ([5 lb/ac x 10.4 conversion factor] ÷ 4.5 g = 11.5). If 75% of those seeds emerge you will have around 8.5 plants/ft^2, but 60% emergence leaves you with just under 7 plants/ft^2. As seed size goes up or seeding rate goes down, there will be fewer plants contributing to yield potential. Emergence may be poor with higher levels of residue, cold soils, or inconsistent planting depth.

The Canola Council of Canada (CCC) states that an ideal stand is 7-10 plants/ft^2 and stands below 5 plants/ ft^2 will have a lower yield potential. Seeding rates need to account for low emergence rates as well as buffering plant losses to insects or other in-season stressors. Marieke Patton, Bayer Territory Sales Manager in Central and Northern Ontario, shared that Bayer's team of agronomists have been involved in a Target Plant Population project in which InVigor hybrids were evaluated at 42 locations over 3 years. Bayer found that targeting populations of 5-7 plants/ ft^2 ensures yield potential is met, but Patton also noted that this means using seeding rates that deliver 10-11 seeds / ft^2. Patton advises growers to "calculate the seeds per square foot required to meet yield potential and calibrate your equipment properly to allow you to reach your target seeding rate and population."

None of this is new, it's just a reminder. **What *is* new, is a tool from CCC to make this process a bit easier. Try running your seeding rate plans through the Seeding Rate Calculator at www.canolacalculator.ca . You can also use the Plant Survival tool to easily determine what your emergence was for future reference.**

Around the POST herbicide application timing or after harvest, conduct a plant density count and plug the values in along with your seed size and seeding rate to determine what the emergence rate was. Knowing the emergence rate will help you with seeding decisions in the future, and understanding the conditions that lead to problematic emergence rates.

Combined with the drill calibration resources from CCC posted at http://bit.ly/2nwyZEG, Ontario canola growers can make short work of delivering the right seeding rate in 2017.

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