GROWING FORWARD. SINCE 1971.
SNOBELEN FARMS

July 27, 2022

2022 Snobelen Farms Yield Challenge

What we are seeing in the field this week

- We have come across a few fields in the Listowel and Milverton area with aphids, populations were low
- This week we were seeing quiet a few stinkbugs
- Continuing to find more fields affected by soybean cyst nematode
- Some minor feeding from Japanese beetles

Weed of the Week: Wild Carrot


Also known as queen Anne's lace is found throughout Ontario in old pastures, roadsides and fields. It is a biennial and occasionally an annual and reproduces by seed.

Seedling

Seedlings will emerge in the spring and early summer with long thin cotyledons.

Mature Plant

The leaves are a yellow-green colour they look feathery and have lots of small, toothed leaflets. The leaves are alternate. In the first year the plant will usually have no stem. In the second year the stem will develop and will be hairy, hollow, and ridged. The base of the plant can have a reddish colour and the plant is covered in coarse hairs. The plant can reach up to 4 feet tall. It will produce flowers in its second year. The Inflorescence is made up of clumps of white flowers with a single dark purple flower in the centre

Management

The best long-term management is to eliminate seedling plants after emergence in the fall or spring or by eliminating first year rosettes before they overwinter to stop the wild carrot from flowering. Tilling with a moldboard plough can eliminate rosette plants in the fall. In fields with high wild carrot populations a two-pass program is best.

http://omafra.gov.on.ca/english/crops/facts/ontweeds/wild_carrot.htm

www.snobelenfarms.com
Snobelen Farms Ltd.

Box 29, 323 Havelock St.
Lucknow, Ontario, N0G 2H0

Phone: 519-528-2092
cropscout@snobelenfarms.com

Control of Wild carrot **pre-plant:**

PRODUCT (active ingredient)	PRODUCT RATE/ACRE (a.i.rate/ha)	AVERAGE CONTROL (%) (8 weeks after application)	RANGE IN CONTROL (%)	NUMBER OF TRIALS
GLYPHOSATE 360 g/L (glyphosate)	1 L/ac (0.9 kg/ha)	76	60-98	3
Tank-mix partner with glyphosate				
+ CLASSIC (chlorimuron-ethyl)	+ 14 g/ac (9 g/ha)	84	71-98	3
GLYPHOSATE 360 g/L (glyphosate)	1 L/ac (0.9 kg/ha)	45	43-46	3
Tank-mix partners with glyphosate				
PURSUIT + non-ionic surfactant + 28% UAN	+ 168 mL/ac + 0.25% v/v + 0.8 L/ac	78	69-95	3
+ BROADSTRIKE RC (flumetsulam)	35 g/ac (70 g/ha)	71	46-91	3
+ FIRSTRATE (chloransulam-methyl)	17 g/ac (35 g/ha)	58	26-79	3

Source: Dr. P.H. Sikkema, University of Guelph (Ridgetown Campus)

Control of Wild carrot **post-emergence**:

PRODUCT (active ingredient)	PRODUCT RATE/ACRE (a.i.rate/ha)	AVERAGE CONTROL (%) (6-8 weeks after application)	RANGE IN CONTROL (%)	NUMBER OF TRIALS
CLASSIC + non-ionic surfactant (chlorimuron-ethyl)	14 g/ac + 0.2% v/v (9 g/ha)	79	60-94	5
PURSUIT + non-ionic surfactant	126 mL/ac + 0.25% v/v + 0.8 L/ac	56	20-74	4
FIRSTRATE + non-ionic surfactant + 28% UAN	8.5 g/ac + 0.25% v/v + 0.25% v/v (17.5 g/ha)	52	18-75	5
CLEANSWEEP + 28% UAN (imazethapyr + bentazon)	126 mL/ac + 700 mL/ac + 0.8 mL/ac (75 g/ha + 840 g/ha)	48	25-66	5
BASAGRAN FORTE (bentazon)	900 mL/ac (1,080 g/ha)	27	0-65	5
PINNACLE SG + non-ionic surfactant (thifensulfuron-methyl)	4.8 g/ac + 0.1% v/v (6 g/ha)	13	3-24	5
REFLEX + TURBOCHARGE (fomesafen)	0.4 L/ac + 0.5% v/v (240 g/ha)	8	1-20	4
BLAZER (acifluorfen)	1 L/ac (600 g/ha)	6	0-19	4

https://fieldcropnews.com/wp-content/uploads/2020/04/DAUCA_PWB.pdf

Two-spotted Spider Mites

Spider mites thrive in drought conditions as these conditions improve spider mite movement and reproduction. It is not often that spider mites cause economic damage but similar to aphid populations they can increase rapidly in the right conditions. These mites are less than 0.002 inches, they are a green-yellowish colour with two dark spots and eight legs.

Life cycle

The two-spotted spider mite goes through four stages, egg, larva, nymph and adult. The spider mites will overwinter as adults on the edges of fields and feed on weeds. After mating in the spring, the females will lay eggs and the larva will hatch in 3-5 days. When they enter the nymph stage, they look similar to adults but can not reproduce. They can complete the life cycle in anywhere from 5-14 days.

Damage

Damage is done to the soybean plants when the spider mites pierce the leaves and suck out moisture and nutrients. This sucking can leave yellow to white spots on the top of the leaf. When looking for damage it will most likely be at the edges of the field and plants will have a wilted appearance as seen in the image above. Damage will increase as population increases. When there are drought conditions there is a reduction is predators and pathogenic fungi that help keep populations in check.

Management

The best way to tell if you have spider mites in your field is to take a white piece of paper and place it under the soybean leaves. Shake the plant and look for tiny dark dots moving around on the paper.

There is not much information available on the economic threshold of spider mites in soybeans. Some suggest treatment when 20-50 % of leaves are discoloured before pod set. After pod set treatment is suggested at 10-15% of leave discolouration.

According to OMAFRA Pub. 812 suggests spot spraying when there is an average of 4 mites per leaflet. Do not use pyrethroids such as matador for spider mites as it will kill the beneficials. Spray 404 mL/acre of Cygon 480 EC or Lagon 480 EC (dimethoate) with sufficient water volume.

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https://www.purdue.edu/newsroom/outreach/2012/120619KrupkeMites.html

https://blogs.cornell.edu/ccefieldcropnews/2020/07/16/drought-stressed-soybeans-keep-an-eye-out-for-spider-mites/

https://www.pioneer.com/ca-en/agronomy/two-spotted-spider-mites-soybeans.html#:~:text=Two-spotted%20spider%20mites%20are%20a%20pest%20of%20soybeans,no%20established%20economic%20thresholds%20for%20two-spotted%20spider%20mites.

Manganese Deficiency in Soybeans

When soils get really dry and there's big cracks in the ground manganese can get oxidized to an unavailable form. So, there might be manganese in the soil, but the soybeans will be unable to take it up. Beans will get a yellowing look with prominent green veins. Manganese is not a mobile nutrient in the plant so the yellowing will be seen on the newer plant tissue first. Manganese is a key micronutrient in chlorophyl synthesis. It is more likely to see a manganese deficiency in sandy soils, dry soils, soils with high organic matter and soils that have a high pH. The deficiency symptoms will be dependant on the soil's properties. Manganese tends to be a common deficiency in soybean production. Manganese exists in a few forms within the soil but the only form that is available for plant use is the manganese ion Mn^{2+} in soil solution. It is important to note the Manganese (Mn) is different from Magnesium (Mg).

If facing this issue, it is fairly easy to correct, a foliar product such as powered manganese sulfate can be used. However, manganese sulfate should not be tank mixed with glyphosate. When there are clear visual symptoms, you can get a 5-10 bushel response from using a foliar product. If there are visual symptoms the best way to confirm that they are being caused by a manganese deficiency is to have a plant tissue analysis done and then work with your retailer to pick the best treatment option for your field.

https://www.pioneer.com/us/agronomy/manganese_deficiency.html#:~:text=Summary%201%20Soybeans%20are%20more%20often%20deficient%20in,are%20seldom%20affected%20uniformly.%20...%20More%20items...%20

https://www.youtube.com/watch?v=ZcRPohrI9L8&t=44s

Growing Degree Days and Crop Heat Units

The following table will provide a look at the approximate growing degree days and crop heat units in your area for a planting date of May 10th.

Table 1: Cumulative growing degree days and crop heat units

Location	Growing Degree Days July 19-26	Crop Heat Units July 19-26	Cumulative Growing Degree Days	Cumulative Crop Heat Units
Brantford	479.8	203.9	4677.8	1823.6
Lucknow	488.3	213.1	4576.7	1755.6
Palmerston	471.0	203.2	4427.7	1656.4
Stratford	455.0	191.0	4479.8	1694.3
Tiverton	485.8	211.7	4579.3	1761.1

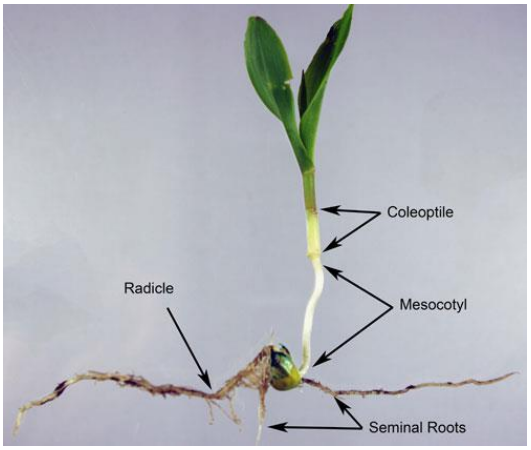
Ridgetown Diagnostic days

- Group 2 injury in soybeans- stunting, yellowing, reddening of veins
- Permit- weak on lambs quarters
- Simplicity- wheat herbicide, good on grass in wheat
- Group 2 on corn purpling of leaf sheath. Yellowing of growing point
- To Kill alfalfa, use lontrel or dicamba
    - Lontrel can carry over at high rate into soybeans and cause damage

Urea in the strip till corn, the ammonia burns the roots at high rates

- 50 lbs n in the strip safest rate
- 100 lbs/ac n is okay, can have some burn depending on soil type and moisture.
- 150 lbs/acre n in strip not okay higher chance of injury.

Fertilizer burned roots are brown vs white



Should see radical root out the bottom tip of the corn plant. With burn might see radical root missing. Can go black and wither.

- Red clover needs 3 plants per sq foot for a good stand after wheat, patience pays

- Zidua no post emerge activity on weeds need to apply before weeds germinate and emerge

Zidua can do some leaf distortion draw string effect. Some browning on the leaf-on-leaf contact

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- Liberty needs lots of water, smoking hot weather and sunny to be most effective
- Group14- Blazer, no activity on grass, Blazer good on curled dock
- Dry beans more reziliance to mcpa then 2-4d

Mario Tenuta says…

- In Soybeans the site of fixation in the soybean nodule is anerobic
- Need 3/4" rain to get nitrogen 1.5" deep for nitrogen to prevent ammonia loss. Need within 3 days or ammonia loss can be upto 50 lbs/N per acre
- Can lose 20-50 lbs N with warm conditions and not preventing loss either with rain, Urease inhibitor or incorporating.
- Urease inhibitor- anvol, agrotain

Reduce ammonia lose in season

- Nitrification inhibitor- slow process of conversion from 2-6 weeks and to ammonium form which sticks to soil.
- Without a nitrification inhibitor within 2-3 weeks N will convert to ammonia and can be lost.
- Nitrification inhibitor can be used early but not past 6 leaf or else will be too late to release for plant uptake.
- Nitrification inhibitors can reduced nitrous oxide (N2O) up to 30%.
- N2O- is a legacy emission which will stick around for 100 years in the atmosphere which is why Canadian Government is looking to help prevent losses.

Peter Johnson says…

- Big wheat =Big biomass =Heads/sq ft
- Wheat hates wet feet and very high temperatures
- In the fall we would like 350 plants per sq meter

Albert tenuta says...

- There is many types of northern corn leaf blight
- Strains- ht1, ht2 ht3 htn1 htm1
- Heavy pressure 60-70bu yield hit from northern corn leaf blight
- Tarspot- if you find it try and rub it off if it doesn't come off could be tarspot and flip leaf over should be able to see it on other side
- Threshold- 2-3. Applying a fungicide at Vt most consistent timing for control.
- Delaro complete and veltyma had best control and yield for control of tarspot

Western bean cutworm-

- When eggs are purple, they are about to hatch