GROWING FORWARD. SINCE 1971.
SNOBELEN FARMS

July 21st, 2022

2022 Snobelen Farms Yield Challenge

What we are seeing in the field this week

- We have been coming across a few fields that are experiencing manganese deficiencies and potassium deficiencies
- Fields were suffering from dry conditions, but the scattered showers Ontario received last night will provide some relief
- We have been noticing ragweed escapes in several fields
- Some fields are entering the R3 stage and some even R4 stage as pods begin to appear
- We are continuing to find Soybean Cyst Nematode

Weed of the week: Common Burdock


Burdock has a basal rosette with very large leaves that can be as long as 50cm and as wide as 30cm. The base of the leaves resembles a heart, and the underside has white woolly hairs. Stems are erect with lengthwise grooves and can be up to 180cm in height. Flower heads are globular with purple bristles. Once the flower is mature it easily breaks off and sticks to clothing or fur and scatters seeds. Each of these burrs contains around 40 seeds the whole plant can produce up to 17,000 seeds. Burdock only reproduces by seed. In its first year it will use its large taproot to overwinter. In the second year the burdock will flower and let off its seeds. OMAFRA.

Management

According to Mike Cowbrough controlling burdock is not necessarily easy or quick. The best control is done in the spring for new seedlings, followed by control of the larger first year plants in the fall. By controlling larger plants in the fall, you can stop them from overwintering, flowering, and dispersing seeds. The young seedlings are usually pretty easy to control in the spring. The table to the right shows the control from herbicides applied in late September. The control may not look like it has done a good job 21 days after its been applied but come spring all those plants should be dead.

Herbicide	Rate/acre	Established plants Control – 21 days	Established plants Control – April	New Seedlings Control – April
MCPA Ester 600	660 mL	40%	100%	0%
2,4-D Ester 700	520 mL	40%	100%	0%
Banvel II	500 mL	50%	100%	0%
Glyphosate 540 g/L	670 mL	50%	100%	0%
Enlist Duo	1.7 L	60%	100%	0%

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In the spring manage the young seedlings with tillage and effective herbicides. The chart below features herbicides that list burdock as being controlled. Mind you not all these herbicides are able to be used on IP soybeans.

Trade Name	Active Ingredient	Herbicide group	The crop the herbicide is used on
2,4-D (numerous formulations)	2,4-D	4	Cereal
MCPA (numerous formulations)	MCPA	4	Cereal
Glyphosate (numerous formulations	Glyphosate	9	Corn/soybean
Xtendimax, Engenia, Banvel II	dicamba	4	Corn/soybean
Estaprop Xt	dichlorprop/2,4-D	4	Cereal
Trophy	fluroxypyr + MCPA	4,4	Cereal
Simplicity	pyroxsulam	2	Cereal
Pixxaro	halauxifen/fluropxypr + MCPA	4,4,4	Cereal
Blackhawk	Pyraflufen-ethyl/2,4-D ester	4,14	Burndown before crop
Enlist Duo	2,4-D choline/glyphosate	4,9	Corn/soybean/burndown
Barricade M	tribenuron/thifensulfuron + fluroxypyr + MCPA	2,2,4,4	Cereal

https://fieldcropnews.com/2016/10/controlling-common-burdock/

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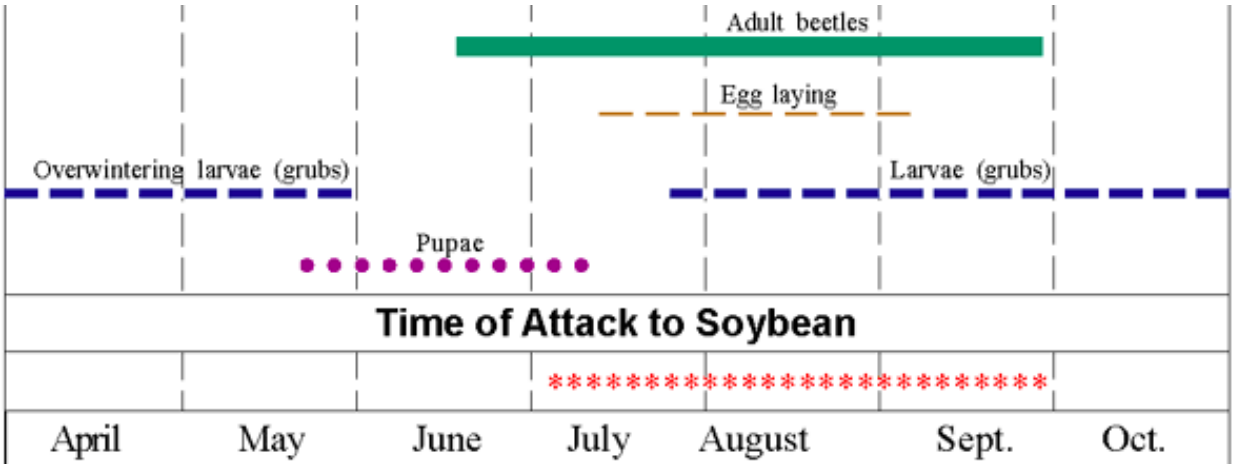
Japanese Beetle

The Japanese beetle is a pest that does damage to over 250 plant species. However, soybeans seem to be one of their favourites. The adult is 13mm long and a metallic green colour with coppery-bronze coloured wing covers. It has tufts of white hair around its abdomen.

Life cycle

The larvae overwinter deep down in the soil and grows till the following spring. The adult will emerge in the middle of summer and can be found from the end of June to September. Eggs are laid in the soil and hatch from July to August.



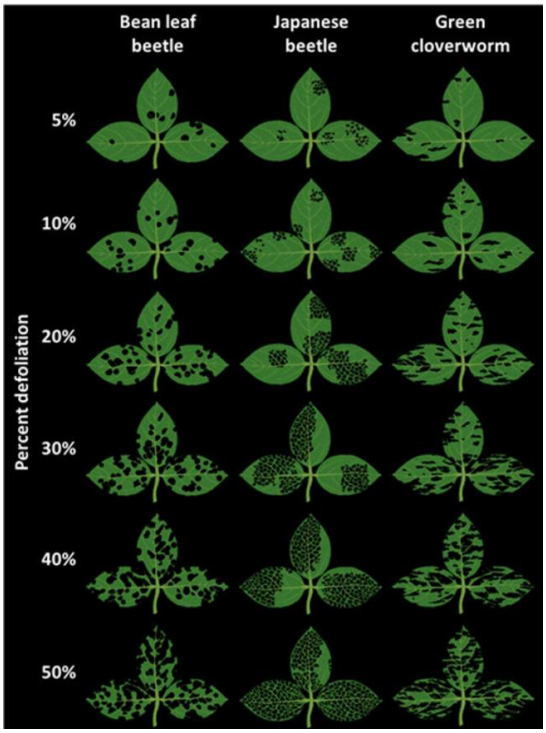
Damage

This pest skeletonizes soybeans. It eats away the tissue between the larger veins of the soybean leaf and leaves a lace like appearance on the leaves.

Economic Threshold

Observe 10 different plants from throughout the field and determine the percent defoliation. On each plant take a leaf from the top, middle and bottom third of the plant. Use the defoliation chart below to determine the average defoliation across the leaves. Then determine the average across all 10 plants sampled.

If the plant is in a vegetative growth stage treat with an insecticide if adults are present and defoliation is at 30%. If the plants are in the flowering to pod fill stage treat if there are present adults and defoliation is at 20%.



Management

According to OMAFRA Pub. 812 the best management for adult Japanese beetles when they reach threshold is a foliar application of Concept (imidacloprid + deltamethrin) at a rate of 131-263 mL/acre

https://extension.entm.purdue.edu/fieldcropsipm/insects/soybean-japanese-beetle.php
https://extension.umn.edu/soybean-pest-management/japanese-beetle-soybean

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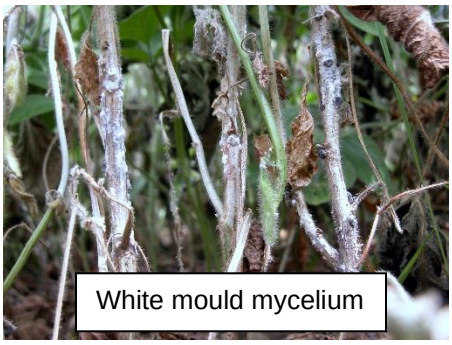
White Mould

White mould can cause extensive yield loss in soybeans and is a devastating disease. Yield loss from this disease is dependent on the inoculum amount of a field and weather during flowering. It is possible for the overwintering bodies to be present in the field if the field had a problem in the previous year. If there is cooler, wet, humid weather the spores will infect the flowering soybean plants. If you have all three conditions: a flowering field, cool wet weather, and over wintering bodies in your soil you are at risk of a severe infection.


Apothecia germinating from sclerotia


White mould mycelium


Soybean seed with white mould sclerotia

To reduce the infection, you must fight it. Growers who use multiple strategies find they are able to limit yield reduction. If your field has Sclerotinia (over wintering bodies) it can die naturally if left on the soil surface. This means you should not till your field after harvest. No-till soybean fields are at less risk. Expanding your rotation between susceptible crops is another effective way to reduce the inoculum amount.

You can find soybean varieties that are less susceptible to white mould. With continued breeding more and more resistant traits are being included. Companies provide white mould ratings. For example, Snobelen Farms OAC Strive and OAC Wallace are food grade soybean varieties with above average white mould ratings. Very early planted soybeans may finish flowering before August showers reducing their white mould risk. Keeping the canopy and soil dry during infection period is critical to limit plant to plant transmission. If you have a history of white mould planting in 30inch rows would be a good practice.

Foliar fungicides have also been relied on as a best management practice. They can bring up to 12bu/ac when there are 1 to 2 passes applied during flowering with white mould conditions. Fungicides only supress and will not control major infections. Using fungicides as well as other practices listed can be great ways to deal with white mould.

https://fieldcropnews.com/2021/03/white-mould-in-soybeans-can-be-controlled/
https://cropprotectionnetwork.org/resources/articles/diseases/white-mold-of-soybean

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 12-19	Crop Heat Units July 12-19	Cumulative Growing Degree Days	Cumulative Crop Heat Units
Brantford	468.7	194.3	4198.0	1619.7
Lucknow	454.3	182.9	4088.4	1542.5
Palmerston	442.6	178.6	3956.7	1453.2
Stratford	446.9	182.4	4024.8	1503.3
Tiverton	455.0	184.3	4093.5	1549.4

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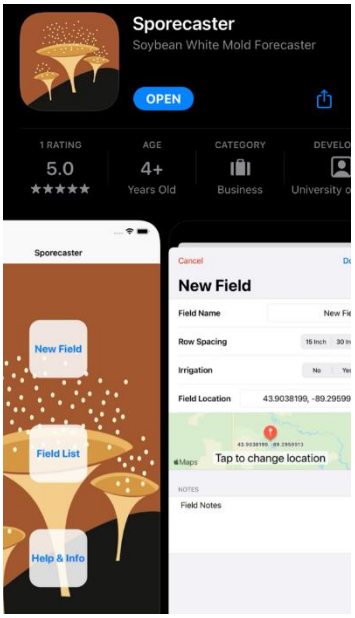
Useful Apps for the fungicide season

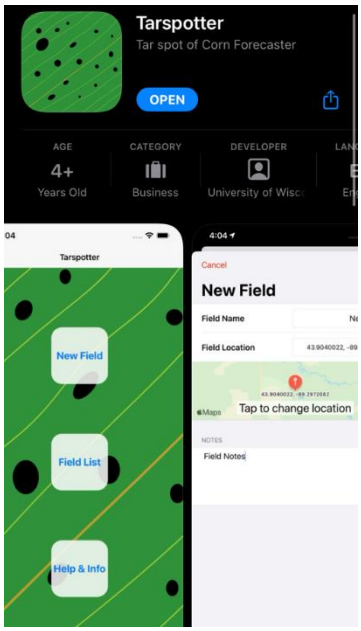
Sporecaster



"The purpose of Sporecaster is to assist farmers in making management decisions for white mold in soybean. The best time to manage White mold is during flowering (R1 and R2 growth stages) when apothecia (small, mushroom-like structures) are present on the soil surface. Apothecia release spores which infect senescing soybean flowers, leading to the development of white mold. University research has indicated that the appearance of apothecia can be predicted using several variables including weather and amount of soybean row closure in a field. Based on this research, models have been developed to forecast the risk of apothecia being present in a soybean field. Farmers can easily input site-specific information about their soybean field into this app, which combines this information with the research-based models to predict the best timing for white mold treatment or if treatment is even needed at the time.

Sporecaster uses GPS coordinates to determine if past local weather has been favorable for the development of apothecia during soybean flowering in a field. Models in the app use 30-day averages of maximum temperature, relative humidity, and maximum wind speed to predict favorable conditions for most soybean growing regions. Based on these predictions and crop phenology, a site-specific risk prediction is generated for three scenarios (non-irrigated soybeans, soybeans planted on 15" row-spacing and irrigated, or soybeans planted on 30" row-spacing and irrigated)."

Tarspotter



"The purpose of Tarspotter is to assist farmers in making management decisions for tar spot in corn. The best time to manage tar spot is during V8 to R4 growth stage. Tar spot fungal spores which infect corn, leading to the development of tar spot. University research has indicated that the appearance of Tar spot fungus can be predicted using several variables including weather. Based on this research, models have been developed to forecast the risk of Tar spot fungus being present in a corn field. Farmers can easily input site-specific information about their corn field into this app, which combines this information with the research-based models to predict the best timing for tar spot treatment. Tarspotter uses GPS coordinates to determine if weather has been favorable for the development of Tar spot fungus during corn flowering in a specific field. Models in the app use real-time weather to predict favorable conditions for most corn growing regions. Based on these predictions and crop phenology, a site-specific risk prediction is generated."

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