

2022 Snobelen Farms Yield Challenge Newsletter

Weed of the Week: Velvetleaf



<https://ipm.missouri.edu/cropPest/2015/5/Weed-of-the-Month-Velvetleaf/>

Mature Plant

The leaves are large at 5-7 inches and the petiole is about as long as the leaf. The leaves resemble a heart and are angled toward the ground. The plant can grow up to 7 feet tall. The stem is upright and hairy and branches towards the top. The leaf axils have orange-yellowish flowers that are around an inch wide. These flowers appear between July and August. The fruit is a cup like disc with 10-15 pointy tipped sections, these sections each have 3-9 brown seeds. Velvetleaf propagates through its seeds.

Management

The rotary hoe can help with management if done when the plants seedlings are just emerging. Larger seedlings can be cut off with shallow cultivation. Delaying fall tillage in fields with high populations of velvet leaf can leave the seed vulnerable to desiccation and predation. Soybeans sowed in a no-till rye cover crop can help with suppression of the weed.

<https://blogs.cornell.edu/weedid/velvetleaf/>

According to the pest manager app the best pre-emergence and post-emergence control for velvetleaf in IP soybeans is as follows

Pre-emergence:

Tradename	Percent Control
Commenza	90%
Conquest LQ co-pack	90%
Freestyle co-pack	90%

Post-emergence

Tradename	Percent Control
Basagran Forte	90%
Cleansweep co-pack (Pursuit +Basagran Forte)	90%
FirstRate + non-ionic surfactant + 28% UAN	90%

Desiccating Soybeans



Desiccation along with early planting can assist in an earlier harvest and increase efficiency. Desiccation has been used to help with problems during soybean harvest like high weed populations or green stems. It helps with dry down of both weeds and the crop. Desiccation is also helpful as it provides weed control benefits for the following year. It is important that the appropriate product is selected for the targeted weed species.

Preharvest herbicides do not speed up how fast soybeans mature or make the seed dry faster. However, they do speed up harvest time by 1-3 days as the remaining green leaves will drop

faster and the green matter will dry up. Desiccation can help improve crop quality as harvest timing becomes more predictable.



It is important not to spray too early as there could be yield loss and the chemical can enter the seed. The ideal time to spray is when 90% of the pods have changed colour and no longer contain green. Generally, 80% of leaves will have dropped at this point. A good way to tell if the beans are ready is if the white membrane seen in the image above is no longer attached to the seed and there is a rattling sound when the pod is shaken. If there are large patches of soybean plants that are still green spraying will need to wait.

Glyphosate is the preferred product when it comes to controlling perennial weeds. It will provide effective control of Canada thistle, perennial sow thistle, field bindweed and dandelions. Glyphosate will be effective on annual weeds but will not work as quickly as other products such as Eragon LQ, Reglone, and Aim. Glyphosate is often tank mixed to provide better control. If perennial weeds are the main target tank mixing is not recommended. If grasses are a problem in your field glyphosate is the better option. There are certain scenarios where desiccation should be done, for instance if your field has nightshade present a tank mix of Eragon LQ, glyphosate and Merge would be a good management choice. There is a 7-day pre harvest interval for glyphosate, Eragon LQ 3 days, Reglone is 5-7 days, Aim is 3 days. It is important to keep in mind that environmental conditions can affect the pre harvest herbicide.

<https://fieldcropnews.com/2020/09/using-pre-harvest-herbicides-in-soybeans/>

Brown Stem Rot

Brown stem rot is a common disease in soybeans in Ontario. It is thought that the shorter rotations between soybeans and corn have led to the buildup of the pathogen. Brown stem rot is caused by *Cadophora Gregata*, a soilborne fungus. It survives in the soil and on residue. The soybean roots are affected in the spring and the infection moves up to the stem during the vegetative and reproductive stages. The fungus plugs up the stem and stops the movement of essential water and nutrients.



Symptoms

Symptoms will become visible later in the growing season. When looking for brown stem rot scout your field during the full pod stage of development. Cut the soybean stems lengthwise and look for brown discoloration of the pith. Discoloration may initially be found at the nodes but as the plant matures it will continue through the stem. Roots will be rotted; the exterior stem will appear healthy. The leaves have symptoms similar to sudden death syndrome. There will be yellowing and eventually browning between the veins.

Brown stem rot (BSR) vs sudden death syndrome (SDS) vs stem canker signs and symptoms

Plant Part	BSR	Stem Canker	SDS
Roots	Healthy	Healthy	Rotted roots
Exterior stem	Healthy	Dark, reddish-brown, sunken cankers at the lower nodes	Healthy
Interior stem	Brown pith (center)	Slight browning at the nodes to stems that are completely turned brown	The internal stem is white and healthy
Leaves	No symptoms or a yellowing between the veins	A general yellowing of leaves, sometimes browning between the veins. A "shepherd's crook" may form at the top of the plant.	Yellowing and eventually browning between the veins like BSR

Management

Crop rotations, resistant varieties and residue management are all effective ways to manage brown stem rot. In fields with a history of brown stem rot a minimum of two years between soybean crops will help reduce the pathogens population. Soybeans are the only host of brown stem rot. Since the pathogen survives on crop residues it is important to make sure they decompose. Foliar fungicides have no impact on brown stem rot and seed treatments will only provide protection for so long.

<https://soybeanresearchinfo.com/soybean-disease/brown-stem-rot/>



Maintaining Natural Enemies of Insect Pests



Beneficial Insects can help keep insect pests under control, so it is important to maintain their populations. Providing food, water and shelter to these beneficials can encourage them to stay in the cropping area. The adult lacewing requires a source of pollen, nectar, or honeydew, this will make them more likely to lay eggs in the crop. The larvae will then hatch and feed on pests such as aphids.

A large majority of insecticides kill both the pest and beneficial insects. Ensure you are only treating when necessary and based on economic injury thresholds. It is helpful to

know the economic thresholds for the different soybean stages and insects. If you can, choose an insecticide that works on your targeted pest instead of a broad range. Ensure you have properly identified the insect pest and have not misidentified a beneficial insect. Spray at times that will cause the least amount of injury to beneficials. There are fungal diseases that affect insect pests, aphid populations can be quickly decreased by fungal disease. To ensure you are not eliminating these beneficial fungal diseases only spray fungicides when it is necessary. Do your best to ensure you are not unnecessarily harming these beneficial as they can provide great control for insect pests

<https://soybeanresearchinfo.com/soybean-pest/conserving-natural-enemies/>

<https://www.planetnatural.com/ladybug-ladybeetle/>



Volunteer Corn in IP Soybeans

At this point in time there is no chemical control that can be done to get rid of volunteer corn in the field. If you have a high population of volunteer corn in your IP field, it might be a matter of manually removing it. Make sure you are keeping an eye out for corn plants when you are combining.



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 August 9-16	Crop Heat Units August 9-16	Cumulative Growing Degree Days	Cumulative Crop Heat Units
Brantford	441.5	175.2	6050.3	2389.6
Lucknow	427.6	167.7	5936.5	2318.6
Palmerston	417.6	161.0	5752.9	2200.0
Stratford	415.4	159.7	5772.8	2215.7
Tiverton	428.2	168.9	5934.5	2322.4

