



2022 Snobelen Farms Yield Challenge Newsletter

Weed of the Week: Lamb's quarters



<https://blogs.cornell.edu/weedid/common-lambsquarters/>

Seedling

Young leaves are an egg like shape and covered in a white power. Often one of the first annual weeds to emerge in the spring. Sometimes the leaves undersurface appears red.

Mature Plant

First few leaves are opposite orientation, further up the plant the leaves become alternate. The stem is smooth with red ridges. Leaves are a broad triangular shape they are green to grayish due to white powder. Flowers are small, green and grouped together in a cluster on the main stem and upper branches. Seeds are small, black, flat and round.

Favourable Conditions

Found in majority of cultivated fields, not common in established forage crops or winter cereals.

Resistance

There is some resistant species to group 2 (ex. Pursuit & Classic) and triazine (ex. Metribuzin) herbicides.

Management

Night tillage or a rotary hoe when the plants is less than ¼ inch tall can help with control. Adding small grains to your crop rotation can also help with management. Tillage in the spring and a later planting date may help reduce populations. It is hard to control lamb's quarters with post-emergence herbicide

According to the Pest Manager app the best control for group 2 triazine-resistant lamb's quarter soybeans is:

Pre-emerge

Trade name	Control percentage
Broadstrike RC	90% control
Authority 480	90% control
Bifecta co-pack	90% control
Authority 480 + Boundary LQ	90% control

Post-emerge

Trade name	Control percentage
Basagran Forte	80% control
Cleansweep co-pack	80% control
Blazer Ultra	60% control

Summer Solstice and Soybeans

Soybeans are considered photoperiod sensitive as their flowering is triggered by daylength. Photoperiod is the time in each day where the plant receives light. Flowering in the soybeans is triggered by the days getting shorter. The days begin to get shorter after summer solstice. Summer solstice is Tuesday June 21st, this means that after next Tuesday your soybeans flowering can be initiated. In ideal growing conditions and in early planted soybeans it is possible to see flowering before summer solstice. Day length plays a big role on how fast soybeans grow and how fast they will go through their growth stages. There are other factors that contribute to its growth habits as well such as moisture, overall health and temperature.



www.omafra.gov.on.ca/english/crops/field/news/croptalk/2020/ct-0320a2.htm

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 June 7-14	Crop Heat Units June 7-14	Cumulative Growing Degree Days	Cumulative Crop Heat Units
Brantford	419.7	162.9	1898.5	688.7
Lucknow	401.7	143.2	1852.4	650.9
Palmerston	392.7	138.5	1787.6	598.4
Stratford	392.4	137.9	1817.5	619.9
Tiverton	401.4	143.3	1858.9	657.0

Checking the Nodules on Soybeans

Soybeans can produce around 70% of their required nitrogen through symbiotic relationship with the bacteria Rhizobium. These Rhizobium enter the soybean through the root hairs and form nodules. These nodules (shown in the picture below) is where nitrogen from the atmosphere can be converted into a form that can be used by the plant. Its important to check your soybeans nodules to ensure they are active, to do so follow the steps below.

- 5-10 plants should be assessed from at least 3 different areas throughout the field
- Carefully dig out the root system, soak the roots to remove the soil
- Nodules will be closer to the stem if the inoculant was applied on seed and further down the roots if placed in furrow
- Take a count of the nodules on each plant, if there are large variations between plants take a count on a few additional pants to improve accuracy
- Cut several nodules open to assess the colour, nodules that appear to be a reddish colour are actively fixing Nitrogen

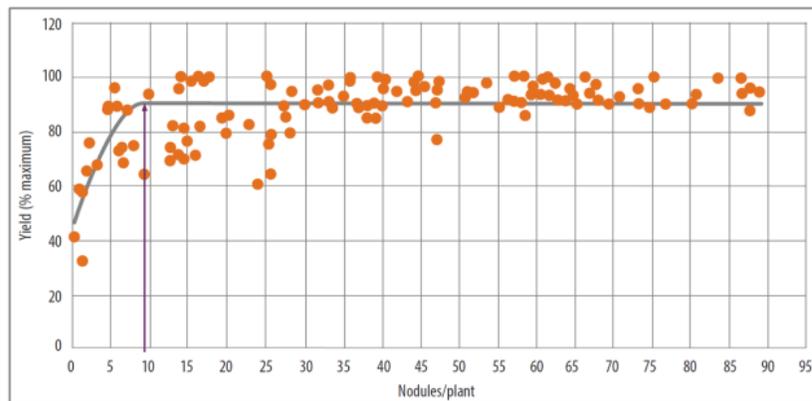


Figure 1. Relationship between number of nodules per soybean plant and relative yield (as a % of the maximum).

<https://manitobapulse.ca/2019/03/assessing-soybean-nodulation/>

The graph above comes from Manitoba Pulse Soybean Growers. Their study showed that plants need at least 10 nodules per soybean plant to 90% of its maximum yield potential.



Poor Nodulation

If there is poor nodulation in the soybeans, you may need to do a rescue nitrogen application. Poor nodulation can happen for several reasons such as weather conditions or not enough bacteria in the soil. If there have not been soybeans grown in the field for a number of years, the bacteria do not have a host to live off of to survive for the years in between soybeans. Another area is if soybeans have never been grown in the field before. Make sure you double inoculate your soybeans to ensure you have enough bacteria in the area surrounding the seed. Best practices would be to buy your beans pre-inoculated and then a package of cell-tech (peat or liquid) applied on the seed as well.

Seedcorn Maggot

As scouting continues, I am running into a lot of IP soybean fields being impacted by seedcorn maggot. As a result of the seedcorn maggot feeding, yields are taking a hit. Seed treatments such as Fortenza, Stress shield 600, Cruiser Maxx, and Cruiser 5 FS can be used to manage impacts from the seedcorn maggot. If Cruiser is available, it is recommended over Stress shield and Fortenza.



Here is a timely video from Real Agriculture about managing weed escapes in IP soybeans

<https://www.youtube.com/watch?v=Wl3k-a5jDhY>