

2022 Snobelen Farms Yield Challenge Newsletter

Soybean Stand Assessment

With soybean planting underway, it is time to start thinking about soybean stand evaluations. Soybeans can emerge over a three (+) week time frame and still establish an excellent stand, so tracking stands over time is an important factor. Monitoring seed emergence and healthy plants, recording stand density improvements every three days or so will help determine course of action. Often doing nothing is the best solution when stands show constant progress.

Also, stand uniformity comes into play when assessing a stand. Thin knolls or patchy soybeans can be replanted just in the affected areas but consider the damage to the existing stand when calculating the replant plant density. As far as harvest goes, roughly every three days you are later replanting, maturity at harvest will be delayed by one day. Therefore, use the same variety, if possible.

It is also important to determine the reason for a reduced plant stand. Soil crusting, compaction, insect damage, herbicide injury, fertilizer injury, hail, excessive moisture/poor drainage, weed competition, seeding depth, and other reasons can help to determine the course of action to remediate the stand. It will go a long way to figuring out the replant rate, seed treatment (if any) and an overall expectation of the outcome. Research suggests plant stand in excess of 90,000 plants per acre on most soil types and 110,000 plants per acre on heavy soil types are sufficient to realize good results.

How to Take a Stand Count

Hula Hoop Method

1. Toss the hula hoop
2. Count the number of plants inside and multiply by the correct multiplication factor (based on the table below) to get an estimate of plants per acre

Hula hoop diameter (inches)	Multiplication factor
28	10,000
30	8,9000
32	7,800
34	6,900

Traditional Method

1. Measure out 1/1000th of an acre for your row width. See table below.
2. Count the live plants in the appropriately measured area
3. Repeat several times throughout the field (ensure areas are being randomly selected)
4. Take an average of the counts then multiply by 1000 to get you plant population/acre

Row width (inches)	Row length representing 1/1000acre
30	17 ft, 5 in
20	26 ft, 2in
15	34 ft, 10in
10	52 ft, 3in
7	74 ft, 9in

<https://crops.extension.iastate.edu/encyclopedia/stand-assessments-soybean>

WIREWORM

Wireworms only
have 6 legs



[https://crops.extension.iastate.edu/blog/erin-hodgson/are-you-seeing-millipedes-year:](https://crops.extension.iastate.edu/blog/erin-hodgson/are-you-seeing-millipedes-year)

The wireworm pictured on the left is commonly mistaken as the millipede pictured on the right. Information from the *Crop Guide to Early Season Pests*.

Identification

Hard cylindrical shaped body, copper in colour with a flat head. Range in size from 2-40mm, with 6 legs at the front of its body.

Scouting

Scouting should be done April to the end of June when the soil temperature reaches 10°C and again September to the middle of October.

Favourable Conditions

- Likes sandy and silty soils
- Fields rotating grass crops, canola or vegetables crops
- Fields that are following summer fallow or with the presence of grassy weeds
- More damage to soybeans when planting early in cool wet conditions because of slower emergence

Damage

- Roots and seeds will have perforations and tunnels
- Seedlings can be stunted, wilted yellow and death could occur
- Leaves may have small notches and purple-coloured tips
- Field may appear to have uneven plant height or stand gaps

Management

Preventive Control:

- Manage grassy weeds
- Increase planting rate by up to 10% to compensate potential losses in problem fields
- Plant into warm moist soil conditions to avoid delayed germination

Chemical Control:

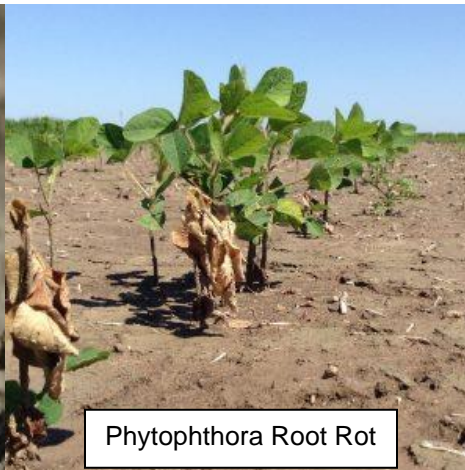
- Insecticide seed treatment, use when threshold of one wireworm per bait trap in reached or there is a history of them in the field

Seedling Diseases in Soybeans



Pythium Seedling Blight

<https://cropprotectionnetwork.org/encyclopedia/pythium-seedling-blight-and-root-rot-of-soybean>



Phytophthora Root Rot

<https://u.osu.edu/osusoybeandisease/sample-page/phytophthora-seedling-damping-off-and-root-rot/>



Fusarium Root Rot

<https://extension.umn.edu/pest-management/fusarium-root-rot-soybean>

Phytophthora Root Rot

This disease is caused by the oomycete *Phytophthora sojae*. Plants that have been affected will be alone or in patches. Stem rot can be seen with chocolate brown stem lesions. Infected seedlings stems are most often soft, and water soaked. The seedlings will be wilted or stunted. This disease occurs most in warm and wet environments but can be seen across other environments. Increased drainage in fields and seed treatments such as Vayantis IV can help manage *Phytophthora*. Fields that have previously had a problem should have resistant cultivars planted.

Pythium Seedling Blight

Many *Pythium* species can cause soybean seedling blight. Symptoms tend to look like *Phytophthora* in seedlings. The symptoms of *Pythium* Seedling Blight include rotten and mushy seeds or seedling, or seedlings can have poorly developed roots. This disease can occur across a range of temperatures, high soil moisture increases disease severity. Symptoms can be seen as most severe in poorly drained soils and areas with issues of flooding. Environmental conditions that promote quick stand establishment are ideal when it comes to management. Using a fungicidal seed treatment would be an effective management practice.

Fusarium Root Rot

There are several species of *Fusarium* that are associated with soybean root rot. If a soybean plant has *Fusarium* root rot the roots may appear a brown to black colour with some decay and vascular discoloration. The disease favours cool temperatures and wet soils, mostly in the early growing season. Well drained soils with minimal compaction can help limit infection by *Fusarium* species. A fungicidal seed treatment would aid in controlling *Fusarium* root rot.

Hot Topics from the May 24th Exeter/Mt. Forest Agribusiness Breakfast Meeting

Corn

- Most areas have 90-95% of corn planted
- Corkscrew problems have been seen in corn, sandy and cold conditions are the more common cause but could also be due to compaction issues
- Agronomists are noticing uneven emergence in corn fields
- Corn at the V4 stage with some seeds unmerged or at an early stage can be considered a weed

Soybeans

- Percentage of soybeans planted is ranging from 30- 60% in some areas
- Planting after May 24th can be worrisome when it comes to getting the crop established, there should be a good reason not to plant if the ground is in good condition
- Soybeans planted into clay soils can take 6 weeks to come up
- Soybeans that are not in the ground by this week will see yield loss

Winter Wheat



- The flag leaf has emerged in some areas
- The next week or two are critical when it comes to spraying for Fusarium head blight
- It is vital to clean your sprayer well and ensure the spray caps are clean
- Powdery mildew has been seen in some winter wheat fields, make sure you are checking your fields for signs of powdery mildew

Weeds

- A high presence of sow thistle and field bindweed being seen in corn fields
- There has been lots of rain to activate preemergence products

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 May 17-24	Crop Heat Units May 17-24	Cumulative Growing Degree Days	Cumulative Crop Heat Units
Brantford	371.7	115.1	748.9	254.2
Lucknow	349.7	94.4	743.3	250.2
Palmerston	341.1	82.8	707.1	221.0
Stratford	348.4	90.7	732.7	239.3
Tiverton	347.4	92.6	742.0	249.8