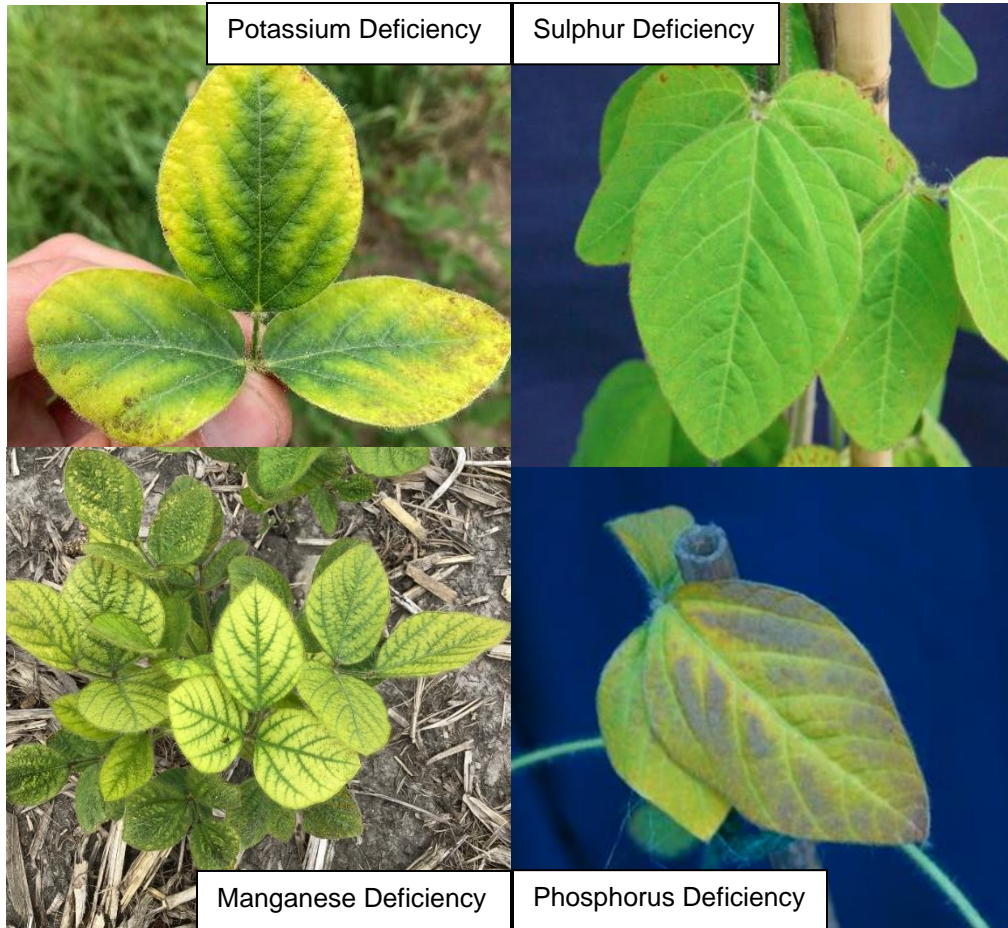




2022 Snobelen Farms Yield Challenge Newsletter

Soybean Deficiency Summary



Phosphorus deficiency: Soybeans with this deficiency will appear spindly with smaller leaflets and have stunted growth. Foliage will have a dark green to blueish tint.

Potassium deficiency: This deficiency can be recognized by the yellowing margins of the leaves

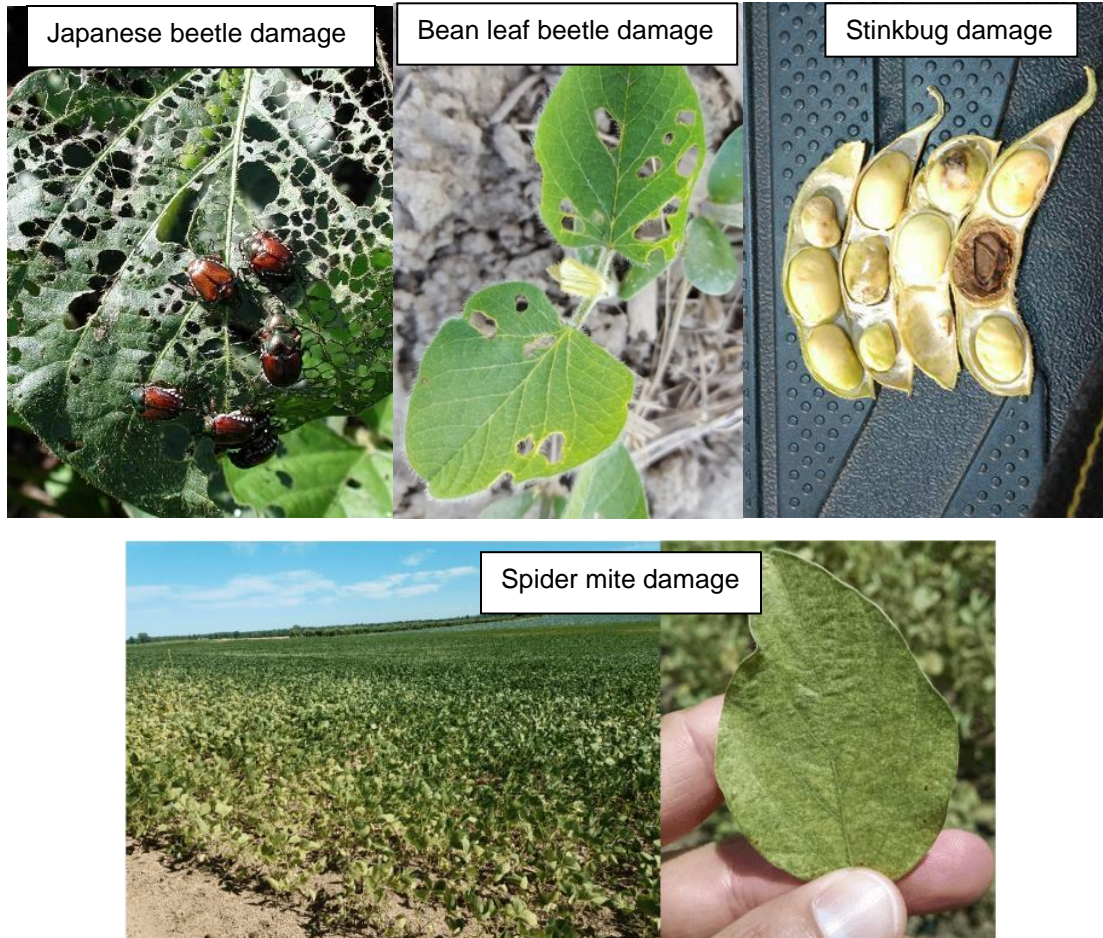
Sulfur deficiency: If sulphur is deficient the upper leaves will turn a yellowish green colour. If the deficiency is very severe all the plant leaves could become yellow.

Manganese deficiency: Beans will have a yellowing look with prominent green veins.

<https://www.yara.us/crop-nutrition/soybean/nutrient-deficiencies/sulfur-deficiency-soybean/>

<https://www.yaracanada.ca/crop-nutrition/soybean/nutrient-deficiencies/phosphorus-deficiency-soybean/>

Insect Damage Summary



Bean Leaf Beetles: The overwintering generation will leave circular holes between the main leaves. The first generation will also leave circular holes on leaves as well as on soybean pods. When they feed on the pods, they leave only a thin film over the seed.

Japanese Beetle: 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.

Stinkbug: Damage from adult and nymph stink bugs is mainly done to the pods and seeds of the soybean plant. They pierce the plant and release digestive enzymes and suck out the predigested plant fluids. Their feeding leaves no scarring and damage is only obvious come harvest time.

Spider mites: 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.

<https://soybeanresearchinfo.com/soybean-pest/japanese-beetle/>, <https://maizex.com/news/blog/bean-leaf-beetle-soybeans-why-should-we-worry>, <https://www.mississippi-crops.com/2013/09/14/managing-late-season-stink-bugs-in-mississippi-soybean/>, <https://blogs.cornell.edu/ccfieldcropnews/2020/07/16/drought-stressed-soybeans-keep-an-eye-out-for-spider-mites/>



Let's take a look at OMAFRA's checklist for high yielding soybeans



The purpose of Snobelen Farms Yield Challenge is to understand *the recipe for success*. What practices contribute to these bigger, better yields in IP soybeans. In 2008 The Ontario Soybean Growers began a yield competition. OMAFRA looked at these results and with additional research curated a checklist for high yielding soybeans. When the 2022 Snobelen Farms Soybean Yield Challenge is done, we hope to create our own checklist for high yielding soybeans. This information can assist other growers and educate on what practices make for these bigger yields. In order to be eligible for the prize you must complete our production practices form. This form will help us understand what practices contributed to your yield.

- 1. Good Rotation**
 - For the best yield potential, soybeans should be grown in 1 of 4 years
 - The corn, soybean, wheat rotation can provide 98% yield potential
 - Avg yield gain bu/ac: 4.2
- 2. High Yielding Full Season Varieties**
 - Check out some soybean variety trials to find out what varieties are achieving higher yields and where the perform best
www.gosoy.ca is a good site for finding trial information
 - Avg yield gain bu/ac: 1-8
- 3. Early Planting**
 - Planting in early May compared to late May can provide better yields
 - Avg yield gain bu/ac: 3.8
- 4. Narrow Rows at the Right Seeding Rate**
 - 194,000 seeds/acre in 7.5-inch rows & 177,000 seeds/acre in 15-inch rows
 - Avg yield gain bu/ac: 3.5
- 5. Seed Treatments**
 - Seed treatments can give positive results if there is cool wet weather after planting or if disease and insects are present
 - Beneficial when planting early
 - Avg yield gain bu/ac: 1.9
- 6. Inoculants**
 - Higher responses in sandy soils with low pH or field has not had soybeans planted in at least 5 years
- 7. Timely Weed Control**
 - Always use a burn-down in no-till
 - Avg yield gain bu/ac: 1-2
- 8. Foliar Insect and Disease Control**
 - Controlling pests at threshold
 - Avg yield gain bu/ac: 1-5
- 9. Fertilizer and manure**
 - P and K applied by soil test
 - Manure can provide yield gain even with adequate soil tests
 - Avg yield gain bu/ac: 1-6
- 10. Appropriate Tillage**
 - If there is compaction tillage will provide yield response, If soil is good, there will be little yield response
 - Avg yield gain bu/ac: 1.8

This checklist is by Horst Bohner from OMAFRA and can be found on field crop news. For more information use the link: <https://fieldcropnews.com/2011/06/checklist-for-high-yielding-soybeans/>

Frogeye Leaf Spot

Frog eye leaf spot is caused by *Cercospora sojina*, a fungus. Infections occur when weather is warm and humid with frequent rain. If the weather conditions listed continue infection can spread from the leaves to pods, stem and even seeds. Like Bacterial leaf blight the pathogen survives on soybean residue or on the seed. Frog leaf spot symptoms are tan to grey circles on the leaves with a dark purple margin. They most often are ¼ inch in diameter. If disease pressure is high spots can also be found on stems, pods and seed. Pod lesions are slightly sunken and a red-brown colour.



Management

The spores from frog eye leaf spot can be carried by the wind or rain causing rapid spread. Younger leaves are more susceptible than fully expanded leaves. The disease can be managed with varieties that have Rcs 3 source resistance. If there is a history of frogeye leaf spot in the field burying residues and crop rotations are important. If the residue cannot be buried it is important to rotate out of soybeans for at least two years. If there are symptoms of frogeye leaf spot on soybeans before R3 fungicide applications can be helpful. There currently are no set thresholds for frog eye leaf spot and how well the fungicide works will depend on weather.

<https://soybeanresearchinfo.com/soybean-disease/frogeye-leaf-spot/>



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 16-23	Crop Heat Units August 16-23	Cumulative Growing Degree Days	Cumulative Crop Heat Units
Brantford	466.5	193.7	6516.8	2583.3
Lucknow	461.1	194.8	6397.6	2513.4
Palmerston	446.5	185.7	6199.4	2385.7
Stratford	439.9	180.0	6212.7	2395.7
Tiverton	459.9	194.8	6394.4	2517.2

