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MARK YOUR CALENDAR

Tuesday, August 23 - Pulse Tour in Morden

QUICK LINKS

- [Soybean Maturity Guide](#)
- [Pea Grade Determinant Tables](#)
- [Market Risks with Pulse Crops](#)



Figure 1. When seeds are 1/8" long in pods near the top of the canopy, soybeans are about 1 month from physiological maturity.

Crop Update and Scouting Activities

SOYBEANS are at the R4 (full pod) to R5 (early seed) growth stage with 10 to 14 trifoliolate leaves. Peak height and node number (or trifoliolate leaves) will be reached once soybeans reach R6 (full seed). Branches that occur off the main stem are your primary pod-bearing nodes; typically, we see 10-15 of these "trifoliolate nodes" on the main stem.

Phytophthora root rot continues to occur in soybean fields impacted by excess moisture, primarily in eastern Manitoba. It is more severe in fields planted to varieties with no genetic resistance and/or with a short soybean rotation. This root rot pathogen may continue to occur throughout August and may impact yield. Currently it is being found at incidence levels of 0-10%, (% of plants affected) which is higher than previous years. While scouting, be sure to open the canopy—due to stunting, affected plants are typically hidden by the healthy canopy. If found, review crop rotation and variety. Genetic resistance information can be found in the [Variety Evaluation Guide](#) on page 4 in the last column called "Notes".

Septoria brown spot, bacterial blight and downy mildew are all commonly occurring foliar leaf diseases but generally do not cause yield reduction. *Sclerotinia* (white mould) is starting to show up in low levels (<1% incidence) but may increase in the coming weeks. Soybean aphids continue to occur sporadically in eastern Manitoba but at very low levels. Continue to monitor throughout R5 (early seed). Aphids are typically found on pods and in new trifoliolate leaves at the top of the plant.

Soybean yield potential looks variable across the province; good to excellent in the majority of western and central Manitoba as well as the Interlake. In parts of eastern and southeastern Manitoba, some crops are rated as poor to good.

Fields affected by prolonged excess moisture are resulting in shorter soybean plants, fewer nodes (8-10 vs. 10-14) and lack of canopy closure, even in narrow row spacing. Ideally, canopy closure in soybeans should occur in July.

DRY BEANS have reached reproductive stage R6 (pods 4.5 inches long; seeds ¼ inch). Blossoms are still present at the top of the plant, but should be completed shortly as the season progresses. Bacterial blight is present in all fields at varying levels of severity. Fields hit by rain, wind and hail have greater infection due to leaf damage. Excess moisture made fungicide applications challenging. White mold can be found at low levels (<1% incidence) in the lower canopy of fields with full canopy closure. Initial disease ratings in the edible bean on-farm fungicide trials have shown higher incidence in untreated strips compared to treated strips with fungicide. Severity of white mold is expected to increase with dense, wet canopies and moderate temperatures. Hail damage and excess moisture is expected to reduce dry bean yield and quality in southern Manitoba.

PEAS have finished flowering, pod fill near the top of the canopy is well underway and the lower canopy leaves have begun to senesce. Harvest has begun in some of the earliest fields. Disease levels, in particular bacterial blight, are progressively intensifying up the canopy. Hail damage has recently been reported in peas and severely affected crops have been silaged. Lesser affected crops saw little defoliation or stem breakage, but damaged pods could result in down-graded quality or rot within the entire pod, affecting yield (see page 2 for discussion on pea grain quality specs).

Field Pea Harvest Considerations

Pea plants mature from the bottom to the top of the canopy. **When at physiological maturity**, the leaves will have largely senesced, the bottom 30% of pods are tan-coloured (seed does not dent with fingernail pressure), the middle 40% of pods are yellow-coloured, and the upper 30% of pods are turning yellow. Overall grain moisture at this point should be ~30%. At this time, both swathing or desiccation operations can take place without compromising grain quality or yield.

Straight-cutting

Most commercial yellow and green pea varieties are semi-leafless and therefore are well-suited to straight cutting because the tendrils knit together resulting in less lodging than traditional leafy varieties. Desiccation is recommended to reduce time from maturity to harvest. In addition to more rapid dry down and management of weed biomass, desiccation also reduces risk of losses in yield due to pod shatter and loss of seed quality due to potential exposure wet weather. Glyphosate or suflufenacil (Heat) are both registered and do not have any issues with Maximum Residue Limits (MRLs). Do not use glyphosate as a desiccant if you are planning to keep seed for use next year as seed viability will be reduced. If you choose to desiccate with diquat (Reglone) or carfentrazone (Aim, Cleanstart), check with your buyer; although these products are registered for use in peas, some export markets have issues with MRLs with these products. For a list of registered desiccants and MRLs, [click here](#).

Swathing

Swathing to facilitate crop dry down or a pick-up header is another harvest option, but swaths are susceptible to wind damage (pod shatter and movement) and late swathing can cause significant pod shatter. To reduce shattering, swath when humidity is high, in early morning or late afternoon.

Combining

Harvest when seed moisture is 14-20% but aim for higher to reduce seed cracking/peeling and reduce shatter loss. Vine lifters and pick-up reels can aid in harvesting lodged crops.

Keep grain grading in mind

Your harvest operations and weather during harvest can affect seed quality which is important for marketing your pea crop. For peas, a few grading factors to keep in mind this harvest are:

- Crack seed coats and splits: These occur when seed is too dry and/or cylinder or rotor speeds are too high. Harvesting at 18-20% seed moisture can reduce seed damage. In addition, run combine augers at low speeds and at full capacity.
- Shrivelled seed: Seed appears dimpled and shrunken, likely due to plant senescence while seed was immature. Carefully timed swathing/desiccation will avoid this issue.
- Colour: Earth tag in peas is a greater issue than in other crops due to the nature of harvest and the texture of the seed coat (which retains dirt) but can be minimized with minimizing green and wet plant material passing through the combine. If you are finding earth tag on the seed, check for soil sticking to the flighting on your combine augers.
- Other colours: When seed of other market classes are identified. Use of certified seed can ensure varietal purity.
- Other damage: Seed may be discoloured, especially in the case of damaged pods (i.e. from hail) where the bacteria *Erwinia Rhapontici* can stain peas pink. These infected seeds may also be classified under “other colours”.
- Bleaching: A grading factor only in green peas, bleaching is caused by excessive moisture (rainfall or humidity) at crop maturity, causing a yellow colour on the cotyledons. Desiccation and prompt harvest can reduce your risk of seed bleaching.

For specific levels within each grade, see **Table 1** below or [click here](#) for full pea grade determinant tables.

Table 1. Primary and export grade determinants table for quality of Peas, Canada, other than Green Source: [Grains Canada](#)

Grade Name	Colour	Other colours (%)	Cracked seed coats including splits (%)	Damage (%)					
				Heated	Insect damage	Other damage	Shrivelled	Splits	Total Damage
No. 1	Good natural colour	1.0	5	Nil	1.0	3	3	1	3
No. 2	Fair colour	2.0	9.5	0.05	1.5	5	5	2.5	5
Extra No. 3	Fair colour	2.0	13	0.05	1.5	5	5	5	8.5
No. 3	Off-colour	3.0	15	0.2	4	10	7	5	10

Potential Pests in Dry Beans

Dry Bean Rust

Rust disease pathogens are very specific to crop type; the rust that affects dry bean is caused by the pathogen *Uromyces appendiculatus*. Fortunately, varieties currently grown have an effective resistance gene to the most common races of this pathogen and therefore rust has not been a major problem in Manitoba dry beans. However, since 2010 a new race has been present throughout North Dakota and has the potential to cause an epidemic in the future. For this reason, rust is a disease that agronomists and farmers should be aware of when scouting edible bean fields. It is unlikely that high levels are present in Manitoba, however, it is something to be pay attention to and if found, make notes for future years. This year, it has been found in several fields in North Dakota. If found, please contact MPSG (bean rust was last observed in Manitoba in August 2014).

Unlike rust pathogens that affect cereals, dry bean rust can overwinter here and therefore if found we may see increasing levels in the future if conditions remain favourable and the new race spreads. Favorable conditions for rust are warm, moist conditions. For more information on scouting, disease life cycle and management, [click here](#) for excellent information from NDSU.



Figure 2. Rust pustules appear on upper and lower leaf surface and the dusty, brown spores are easily rubbed off.

Western Bean Cutworm

Last year, pod feeding was evident in dry bean fields in Central Manitoba that led to seed quality issues and yield loss. The culprit for the pod and seed damage was not officially confirmed, however the evidence was consistent with damage from western bean cutworm, an insect pest that has not yet been verified in Manitoba. The habitat for Western Bean Cutworm is primarily in the western U.S. but has expanded northeast across the Midwest into North Dakota and is also in Ontario. Scouting for feeding damage on leaves, pods and seed should take place in dry bean fields. Only feeding damage will be visible because this insect only feeds at night, burying itself in soil during the day.

Adult moths fly in from the south and are attracted to corn prior to full tassel, after which they will move to edible beans. In dry beans, monitor for leaf feeding, pod and seed damage as well as egg masses laid by the adult moths. You should also monitor neighbouring corn fields for egg masses and larvae feeding in ears (keep in mind corn earworm and European corn borer are also larvae feeding in corn). If you suspect WBC, please contact MPSG or MAFRD for verification as this would be a new pest to Manitoba.

For identification pictures and more information, [click here](#).



Figure 3. Pod feeding by Western Bean Cutworm. Larvae penetrate pods and feed on the seeds. Bacterial blight can cause similar pod lesions.

Photo: cornell.edu

Soybean Reference Material (Click image to download)