The Bean Report

Your source for soybean & pulse crop agronomy & research

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This week....

- Soybean maturity
- Edible bean desiccation timing
- Wilting soybeans: case solved
- Measuring harvest losses
- Worst weed in edible beans
- Pea harvest nearly complete

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In Every Issue.... Crop Conditions

We are currently at 107 Days after Planting (DAP) from May 25 to September 9, and soybeans are maturing rapidly with the hot, dry conditions last week. There is a lot of variability in staging, not only from region to region but also within field. Moisture stress and salinity also contributed to early dry down.

In Central and Eastern Manitoba, earlier varieties have reached physiological maturity (R-7) and some are at full maturity (R-8 or 95% brown pod). 7-10 drying days are required once soybeans reach full maturity before harvesting. Soybeans can be harvested once seed moisture is below 20% (if air drying is available) but ideally, should be **as close to 12-13% as possible** to avoid drying and minimize cracking and shattering losses. Harvest of soybeans will likely begin between Sept 15 and 20.

When harvest is left beyond a week of full maturity, soybean field losses have been shown to increase linearly at a rate of 0.2% loss per day (Philbrook and Oplinger 1989). Careful monitoring of crop staging is important.

In Western Manitoba, many fields remain in the seed development stage and are still quite green, requiring 2-3 weeks before maturity. The average date of the first fall frost (0°C) is Sept 6 to 16 is these areas but the projected forecast includes a later than usual frost, which is good news for soybeans.

Severe weather last week has caused some hail damage to dry beans in Southern Manitoba, which will affect quality at harvest. Bruising to the pods and seeds may cause discolouration, which will increase pick, and/or bacterial infection, which will cause seed rot. Harvest of pinto, kidney, and light reds got underway this past weekend with good to excellent yields.

Photo Credit: Cameron Hildebrand

Soybean Maturity—A Visual Guide

Approximate time **+ 18 days** **+ 9 days** **+ 7 - 10** days to harvest

At R-6, full seed, plants will still be green: this stage is vulnerable to frost and subsequent yield loss

At R-7, physiological maturity, the membrane around the seed will be completely absorbed

At R-8, full maturity, 95% of pods will be brown, seeds will rattle in pod and all leaves will be dropped

Desiccation Timing in Dry Beans - A Visual Guide

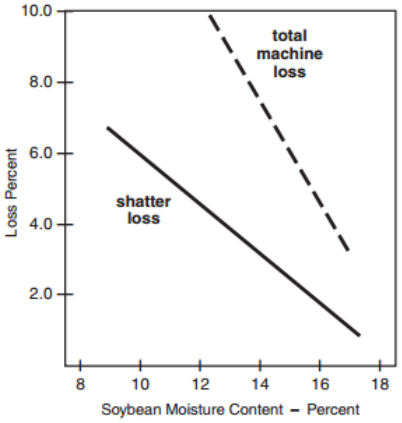
- Seed Moisture <30%
- 80-90% leaf drop
- 80% of pods yellow

Minimize Harvest Losses, Maximize Profit!

The rush of the harvest season often has us forgetting about details. One such detail is looking behind the combine to ensure proper combine settings, especially if this is your first time harvesting soybeans!

To determine your harvest loss: Count the number of pods per square foot behind the combine. A total of 4 seeds per square foot = 1 bu/ac. To figure out where the losses are coming from, keep the different types of losses in mind and make adjustments:

1. *Pre-harvest*: seeds that have dropped to the ground prior to harvest
2. *Gathering* or Header losses (account for 60-80% of total losses)
    i. Shatter: shelled beans/detached pods shattered by the header (possible cause: reel position, ground speed)
    ii. Stubble: pods remaining on stubble (possible cause: low pod set, header too high)
    iii. Stalk loss: pods remaining on stalks that were cut but not taken into the combine (possible fix: ↓ reel speed)
    iv. Lodged: beans remaining in pods attached to uncut stalks laying on ground due to wind, variety etc. (possible fix: ↑ reel speed)
3. *Threshing*: seeds that come out of the back of the combine (look at cylinder, concave and sieve settings)



Source: NDSU Soybean Production Field Guide

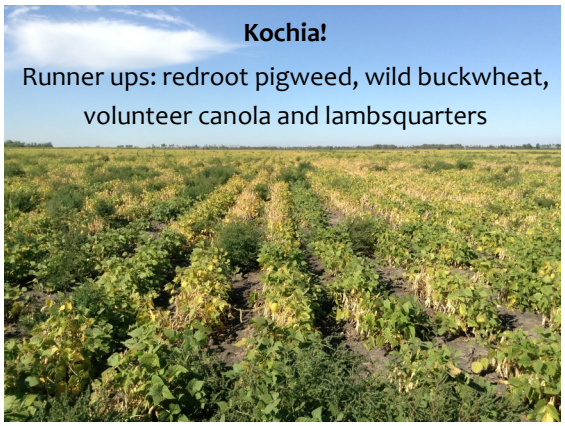
Information on proper combine settings and more details on how to measure harvest losses is available here

Wilting Soybeans: Case Solved

Did you know?
Soybeans require 1/3 to 1/4" water/day!

Patches of wilting soybeans were spreading across Western Manitoba in August. Diagnostic reports have come back from the lab with no disease pathogens detected, leading us to confirm environmental stress, including heat stress is to blame. Along with above average temperatures, some areas in Western Manitoba only received 17-80% of normal precipitation. Light textured soils also have lower water holding capacity, increasing risk of drought stress. Similar symptoms occurred in Wisconsin. Watch this video about the impact of drought stress on soybeans.

What is the Worst Weed in your Edible Beans?



Pea Harvest Update

"... good harvest progress being made in field peas. Pre-harvest desiccation, swathing and harvesting of field pea is now estimated at 75-90% complete with generally good quality and above average yields of between 40-60 bushels per acre being reported. There does continue to be reports of well below normal yields on some fields that have had a history of field peas and in particular fields which have had field peas in the last 2-3 years. It is becoming more apparent that in year's with above average precipitation (especially in June) that field peas should only be grown in a 1 in 4 or 1 in 5 year rotation in order to help minimize soil borne diseases levels."

- Elmer Kaskiw, MAFRI