Reducing Harvest Losses in Soybeans (Year 2)

Objectives:

It is estimated that 80% of soybean harvest losses occur at the header. This project aims to quantify how header type and harvest speed can affect header losses. This is the second year of research in this area.

Set-up:

- Five ground speeds (2, 3, 4, 5, and 6 mph)
- Four 35' headers: Draper with a wind system (DA), draper with no wind system (DN), auger with a wind system (AA), auger with no wind system (AN)
- Four replications
- Forty loss-samples per plot
- Eighty field-scale plots

Trial Set-up:

Location: East Selkirk
Variety: Dekalb B005-52
Samples taken: 3,196
1 bu/ac loss: 4 seeds/ft^2
Average lowest pod height: 3.34"
Pre-harvest Samples: 0.23 bu/ac, and 3.40 plants/ft^2 (148,104 plants/ac)

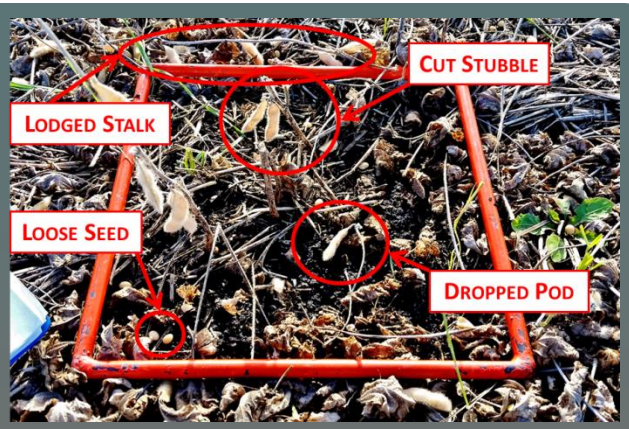


Figure 1. Examples of loss types. Overall losses were represented by the total number of seeds in one square foot

Results:

Speed

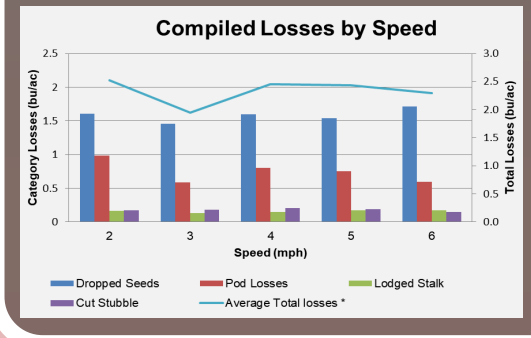
Ground speed did not have a significant effect on losses, except for a slight reduction in losses at 3 mph. This is in contrast to the 2017 trial in which increased losses were seen at speeds of 5 mph.

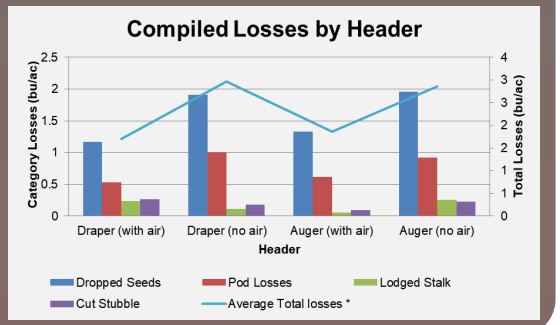
Header

There was no significant difference in the performance of the draper and auger header. Both can be used successfully for soybean harvest.

Wind System

A wind system reduced total losses by an average of 38%, or 1.1 bu/ac, for both headers (43% on a draper header and 35% for an auger header). This is in agreement with the 2017 study.





Discussion:

Previous studies have shown increasing losses with increasing speed. Dry conditions in 2018 may have contributed to more shattering and less variation in losses between speeds. Though it is possible to increase ground speed without incurring more losses, it is highly recommended to perform regular checks to ensure minimal losses, as conditions can change. A wind system is a reliable method of significantly reducing total losses (38%-55% reduction).

Thanks to our industry supporter for providing our wind system!

CRARY HARVESTING EQUIPMENT