

Local farmers improve on harvest grain losses in 2022

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For the last two harvests, 2021/22 and 2022/23, Stirlings to Coast Farmers has participated in a Grower Group Alliance (GGA) led, GRDC investment that aimed to determine the current level of grain losses through the harvest process, inclusive of both front and machine losses. This project utilised the Bushel Plus system, and focused on reducing losses in the field by manipulating header settings. The project was developed after a study by Planfarm found that 90 million dollars' worth of canola is lost in the harvest process each year in Western Australia.

THE PROCESS

To measure header front losses, trays are placed under the divider, feeder house, and offset of the feeder house. The header then drives over the trays, capturing the losses. The material captured is cleaned and grains are separated from the residue. The weight of the losses from each tray are weighed separately and the total for front losses is then calculated using a formula (Figure 1).

Machine losses are measured by using two trays, one dropped under the centre of the machine, off the back axis of the feeder house (Figure 2) and the other dropped within the residue spread zone typically just outside the wheel. One tray is dropped to the left and one to the right side of the machine to account for wind/preferential spread (Figure 3).

The academic consensus on acceptable harvest losses varies widely depending on which institution has conducted the research, and when the research was conducted. However, 3% machine losses for cereals, and 1% for canola are widely accepted as a good result, with losses on pulses ranging from 5-20% depending on variety.

RESULTS

In the 2022/23 harvest, SCF measured 12 participating crops, covering cereals, pulses, and oilseeds, and all of varying yields and varieties.

While the 2021 Albany Port Zone (APZ) harvest loss results were only slightly higher than the optimum range, harvest loss percentages for 2022 were even lower again. In 2021, waterlogging reduced grain yields, and the grain lost compared to the grain hitting the bin resulted in a higher percentage lost. In comparison, in 2022, crops were heavier and yields were

higher (even record-breaking!). In these instances, it is easier to minimize on percentage lost due to more grain hitting the bin compared to grain lost.

In regard to the 2022 losses, crop lodging and grain quality may have reflected the machine losses. Front losses could have been impacted by the gap between maturity and time of harvest, the overall brittleness of the straw and crop lodging. Also, with the higher commodity prices and higher input prices in 2022, it is possible that growers spent more time in setting up their machinery and getting the process right to be able to maximise on every grain coming through the header, taking advantage of each commodity's pricing.



Figure 1. Measuring front losses with the Bushel Plus system.



Figure 2. Placing the tray on the axis.

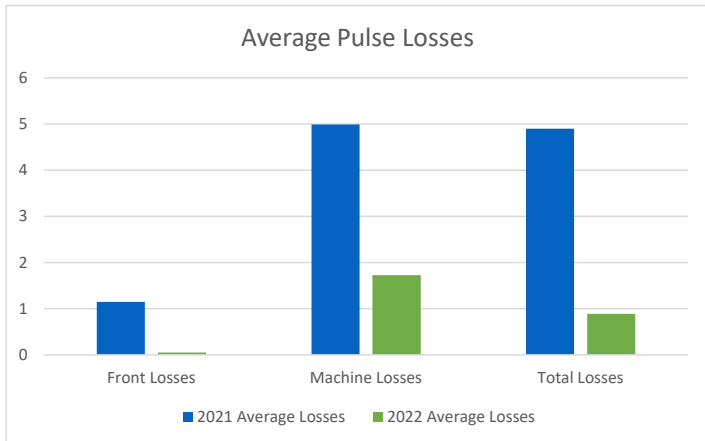
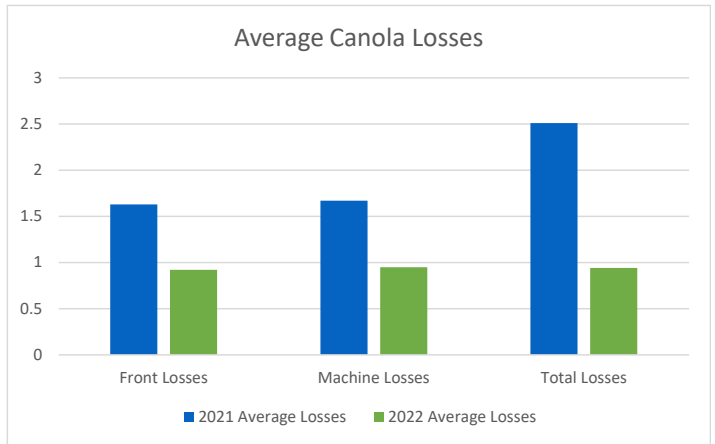
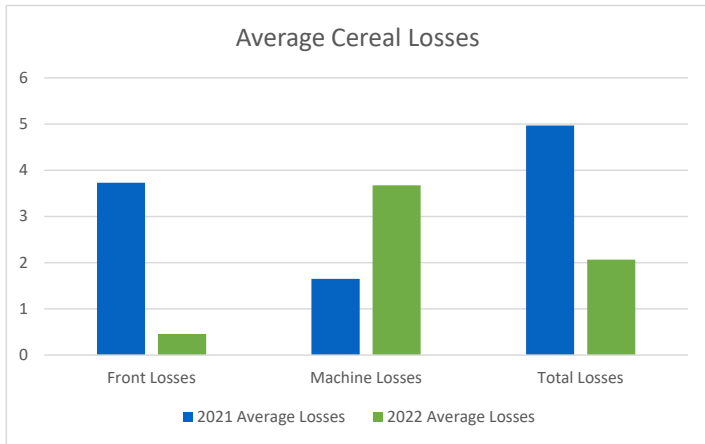


Figure 3. Average harvest losses for canola, cereal and pulse crops for the 2021 & 2022 seasons.

Figure 4. Placing losses through the Bushell Plus system

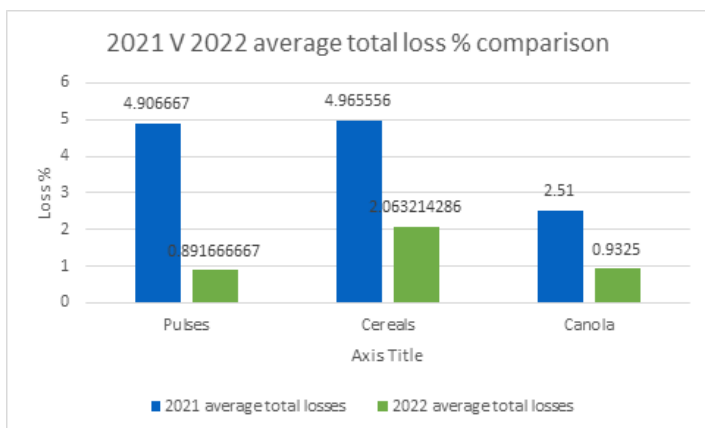


Figure 5. Total average loss % comparison between 2021 & 2022.

CONCLUSION

It is positive to see a continuing improvement with harvest losses in the region, although seasonal factors will continue to potentially play a part in each years' results. Ongoing extension and engagement with growers about the importance of measuring and minimising harvest losses will continue to drive improvement within the Great Southern area and although the project has finished, equipment to measure harvest losses will be made available to SCF members going forwards.