

3- Everyone wants something for nothing: Is there any hope for cover crops or double-cropping in Minnesota?

- We conducted a controlled field experiment at St. Paul.
- Samples were processed and data analysis is in an advanced stage.
- We were able to estimate the potential yield and biomass for soybean in different cropping systems.
- We were able to estimate the impact of maturity and inter row spacing on soybean yield in different cropping systems .
- We are starting with the calibration and validation of the crop simulation models in order to extend these results to other field conditions.

We have made significant progress in our data analysis (Fig 1), particularly in understanding the impact of different cropping systems under controlled conditions. Our analysis has revealed a strong effect of these systems on different variables. Building on this foundation, we are now ready to conduct on-farm experiments to assess the potential limiting factors at the farm level. This will allow us to gain deeper insights into the practical implications of our findings and to refine our recommendations for crop intensification strategies. However, we still have analysis to do, and we anticipate that further insights will emerge as we continue our investigations.

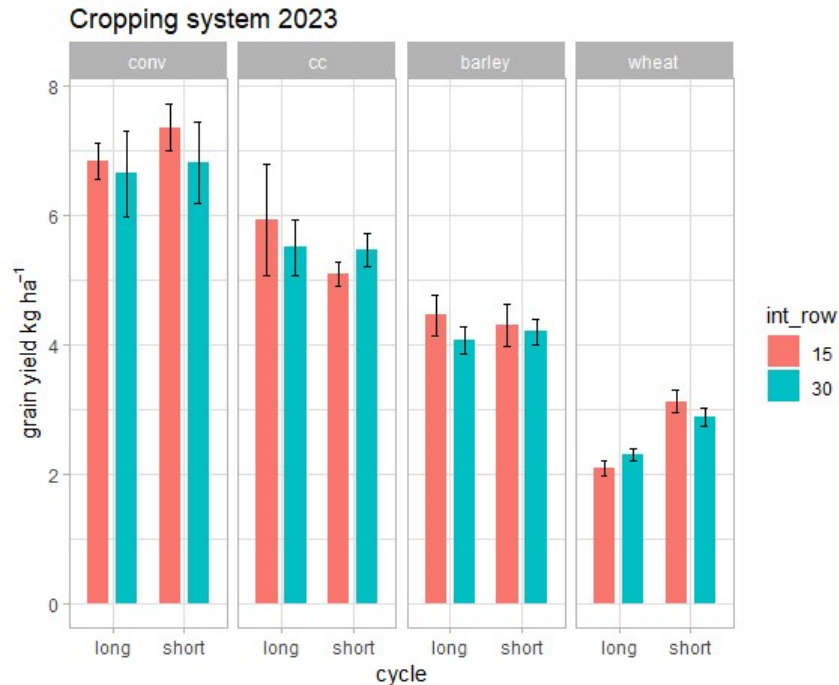


Figure 1: Soybean yield under four different cropping systems in Minnesota. Conventional (conv), cover crop (CC), barley double cropping (barley) and winter wheat double cropping (wheat), for a long and a short variety, and under two inter row spacing (15 inches (red) and 30 inches (green))