



Australian Government
Department of Agriculture,
Fisheries and Forestry



Future
Drought
Fund



REDESIGNING OF BROADACRE FARMING SYSTEMS

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Paddock-scale evaluation of dual-purpose wheat for grain yield and sheep live weight gain in SE Australia

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Background

- Winter feed gap
- Paddock scale evaluation of dual-purpose cropping and sheep live weight gain on a commercial farm.

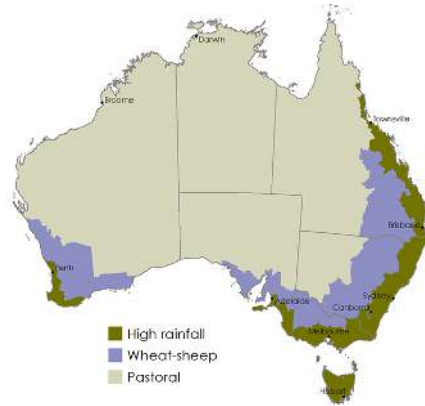


Fig: Wheat cropping and sheep-rearing regions
Source: ABARES 2024

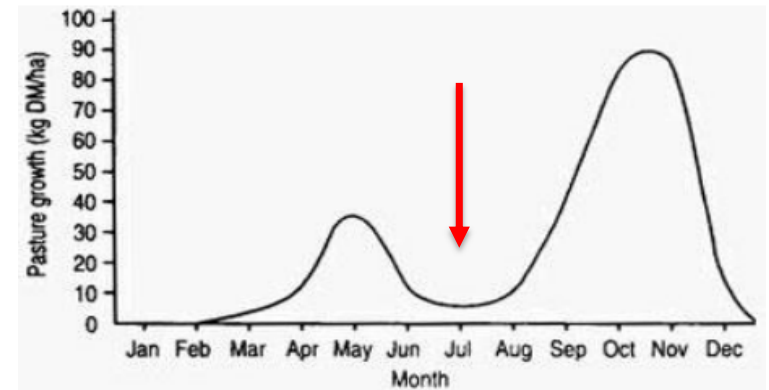
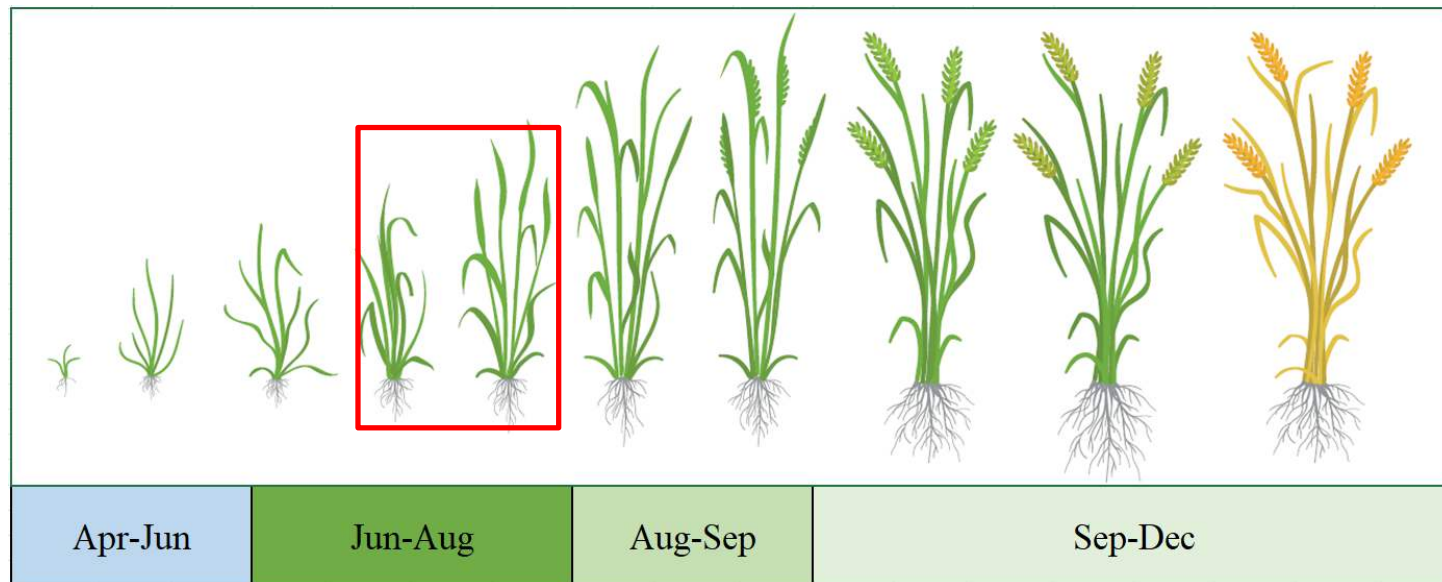


Fig: Typical pasture growth curve (Vic Agriculture 2018).





Experimental setup

- Winter wheat, sown in April 2023.
- Within the paddock, an experimental area was established for biomass samplings and grain yield
- Grazing commenced at $>1\text{t DM}$ biomass availability
- Sheep weight measurements (before and after 33 days of grazing followed by overnight fast)
- Performed economic analysis



Fig: Grazed wheat

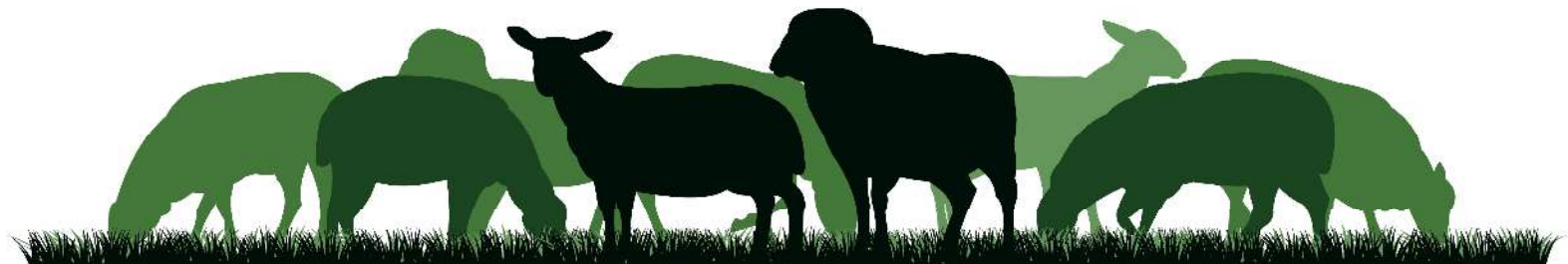


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Key results

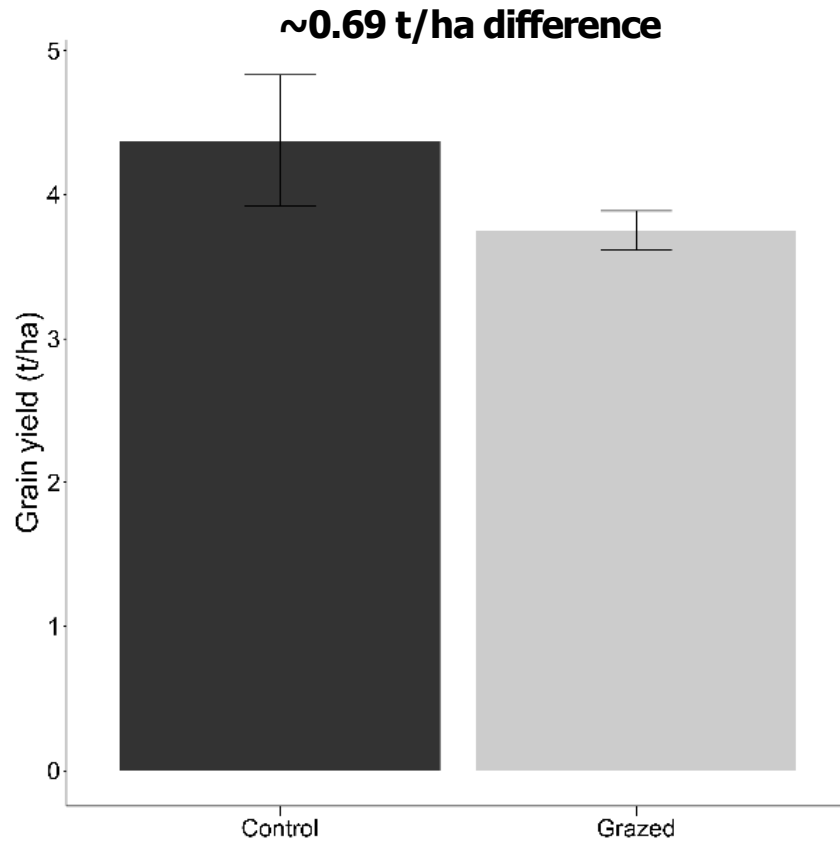


Fig: Effect of sheep grazing on the wheat grain yield.

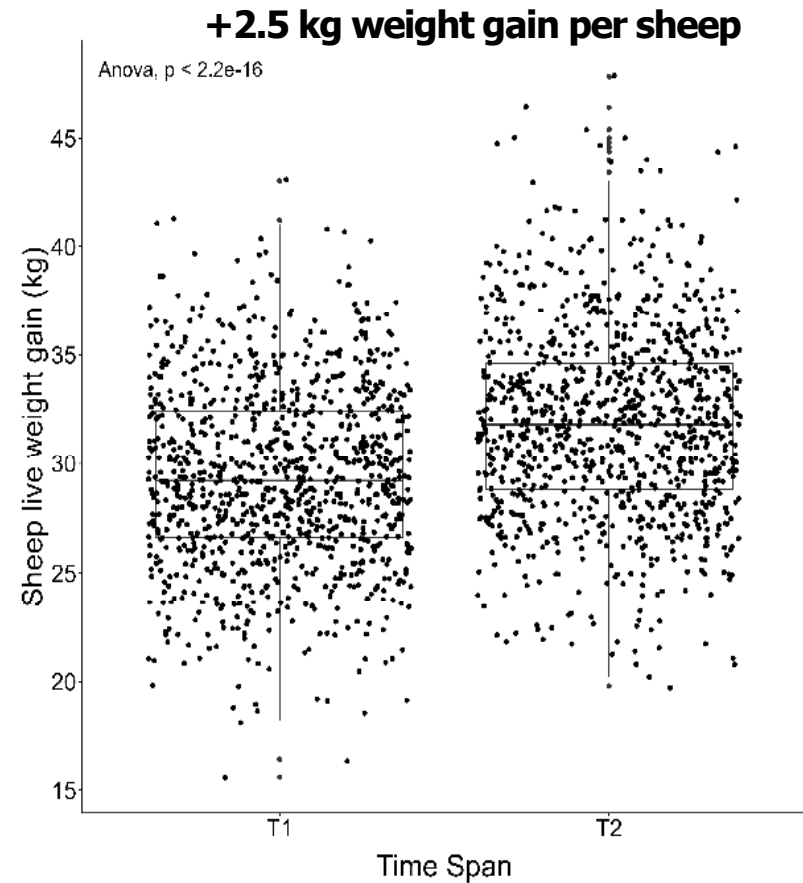
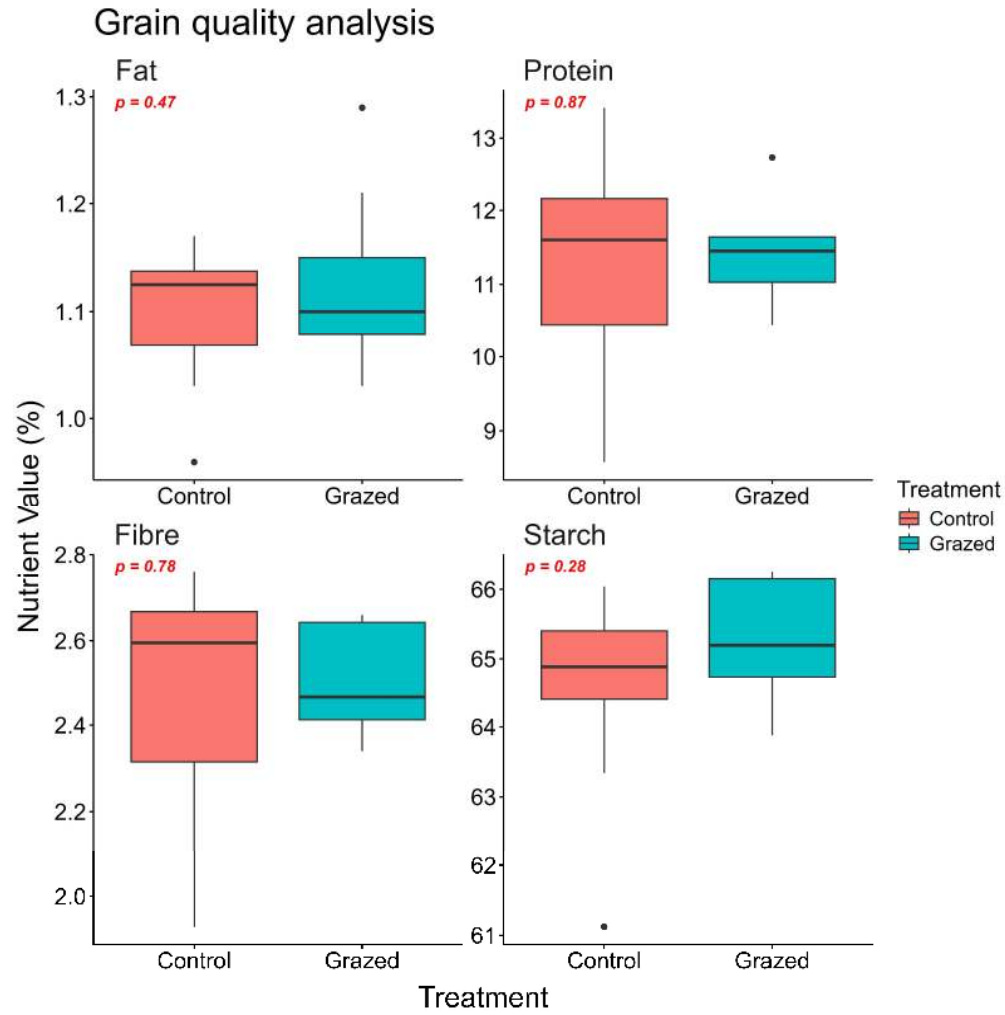
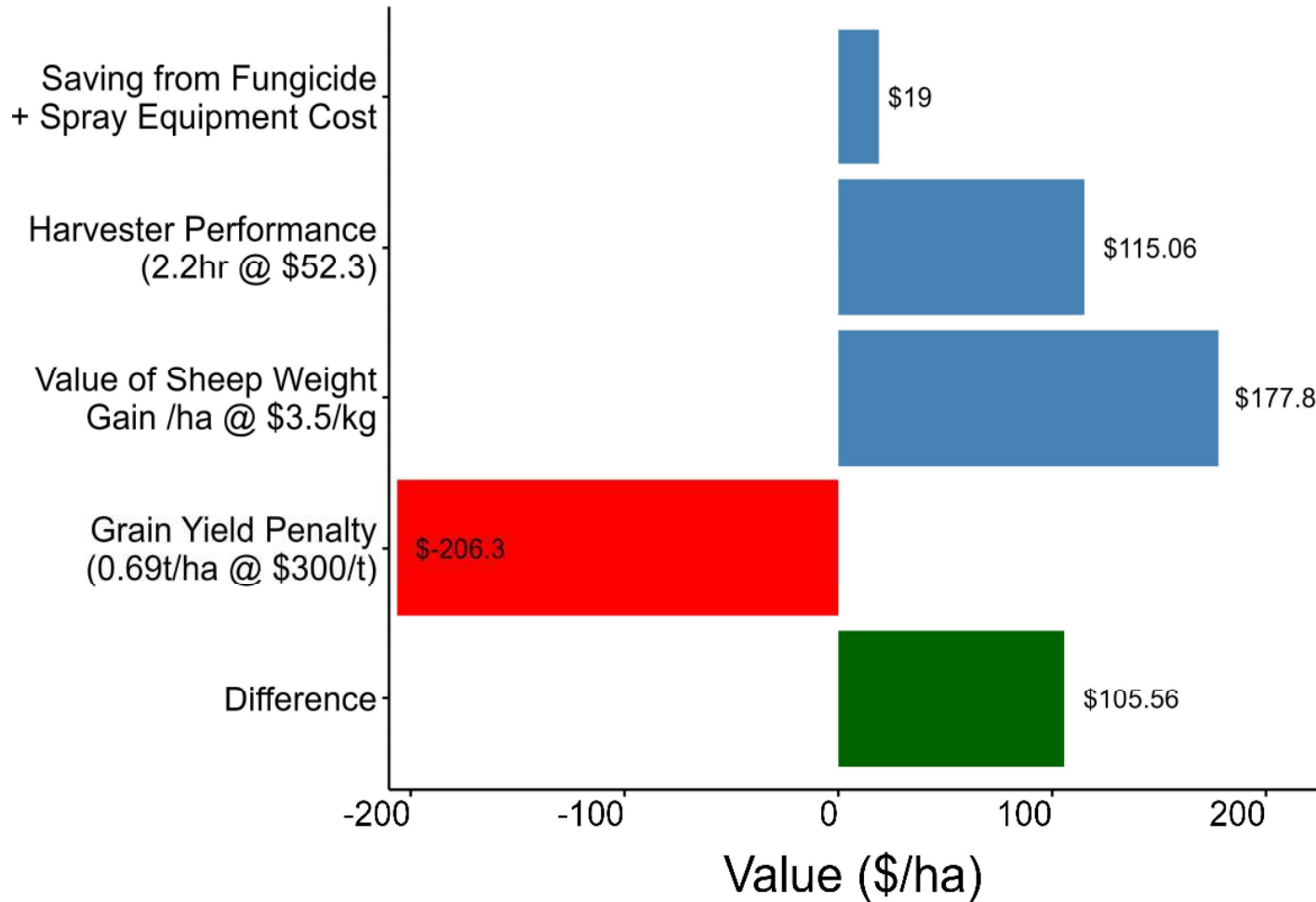


Fig: Live sheep weight gain before and after grazing.





Economic Analysis





Take home message

1. Winter feed gap is a key limitation for improving livestock productivity. Growing dual-purpose winter wheat in mixed farming systems provides supplementary grazing options with profitability and flexibility.
2. Farmers can generate income from livestock and grain. To avoid yield penalties, the stock must be removed from the dual-purpose wheat before the end of tillering/emergence of developing head from the soil.



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Thank you

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Redesigning Broadacre Farming Systems

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