Southern NSW Drought Resilient Mixed Farming System Trials

Wagga Wagga Field Day, 18 September 2025

Project objective: improve whole-farm drought resilience of mixed-farming systems.

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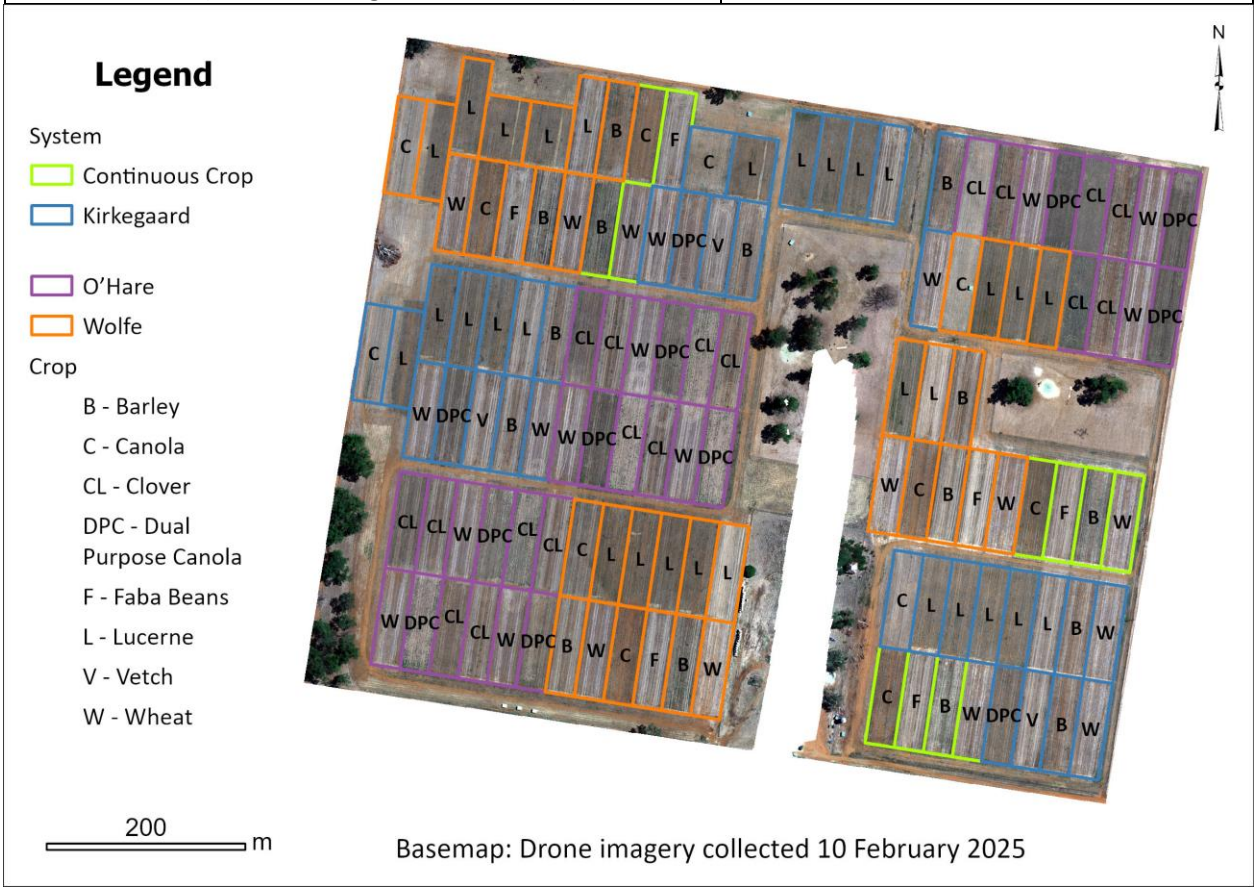

Basemap: Drone imagery collected 10 February 2025

This project received funding from the Australian Government's Future Drought Fund

Wagga Wagga Long-Term field experiment details:

Twelve self-contained farmlets have been established on Ashmont Farm, Wagga Wagga. Each "farmlet" consists of 12 (Systems 1-3) or 4 (System 4) sub-paddocks (0.2ha). The systems integrate all components of a mixed-farm enterprise (dedicated pasture and cropping phases integrated with self-contained flocks of Composite ewes. Ewes are joined in confinement during January/February. The experiment has 4 defined 'systems' treatments:

1. "Wolfe" - Traditional mixed farming

60% cropping: 40% pasture mix, incorporating a legume treatment (faba beans) within the cropping phase and opportunistic dual-purpose crops in conjunction with a 5-year lucerne/sub clover phase. This system focuses on crop/livestock production within dedicated phases.

- Pasture/crop sequence: L-L-L-L-L-C-W-B-F-C-W-B.
- 5 ewes per farmlet; 5.3 ewes per ha lucerne
- There was no dual-purpose wheat sown in 2025

2. "Kirkegaard" - High intensity mixed farming "Kirkegaard/CSU"

60% cropping: 40% pasture mix with increased focus on inclusion of multiple dual-purpose crops and vetch within the cropping phase in conjunction with a 5-year lucerne phase. This system has increased focus on livestock production and carries a higher whole farm stocking rate.

- Pasture/crop sequence: L-L-L-L-L-C-W-B-V-DPC-W-B
- 7 ewes per farm; 7.3 ewes per ha lucerne
- Vetch-mix (V) included vetch, oats and arrowleaf clover
- Dual-purpose canola sown in March 2025
- No dual-purpose wheat in 2025

3. **"O'Hare" - Ley farming**

50% cropping, 50% annual pasture with a self-regenerating ley pasture phase.

- Pasture/crop sequence: Cl-Cl-C-W
- 7 ewes per farm; 6.1 ewes per ha pasture
- dual-purpose canola sown in March 2025
- No dual-purpose wheat in 2025

4. **Continuous cropping**

This system is 100% cropping, with no dedicated pasture phase or livestock production.

- Crop sequence: F-C-W-B-F/V-C-W-B

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Table 1: 2025 Crop Details

Crop Type	Variety	Sowing Date	Grazing management
Wheat	Ironbark	June 2	No grazing
Barley	Neo CL	June 5	No grazing
Clover	Bartolo & Zulu Max	March 21	Rotationally grazed from June 18
Vetch mixture	Timok Vetch, Zulu II Arrowleaf Clover, Yarran Oats	May 29	Grazed from Aug 22–Sept 11 (17 days)
Faba Beans	PBA Samira	June 1	No grazing
Canola	Trident TT	May 21	No grazing
Dual-Purpose Canola	Captain CL	March 22	6 plots grazed 13 Aug–16 Sep (av. 18 days)
Lucerne & Sub-clover	Stamina GT6, Coolamon & Forbes	Sep 19 (2024) Sep 19, 2025	Second year plots rotationally grazed from the March 8. First year plots grazed early August to reduce biomass and weed pressure for re-sowing

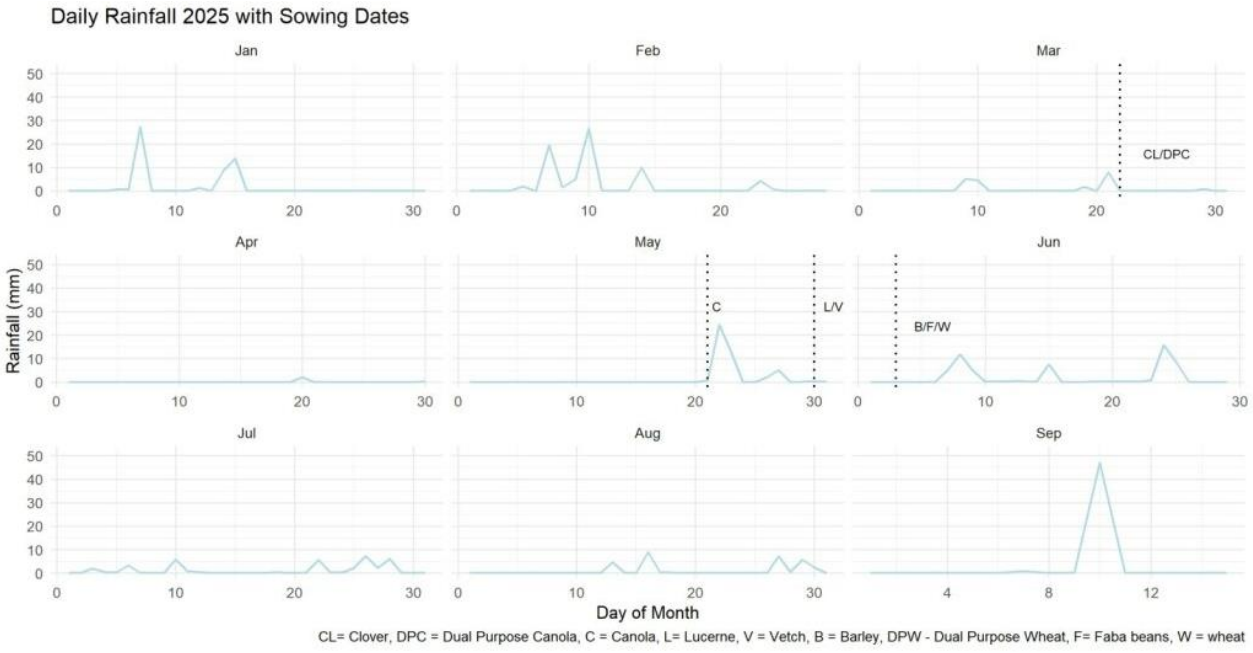

Figure 1. Daily rainfall and sowing dates 2025

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Table 2: Average ewe weights (kg) per farming system in 2025.

	Wolfe	O'Hare	Kirkegaard
Pre-joining	84	80	82
Post-joining	88	80	81
Pre-lambing	87	87	86
Lamb Marking	65	67	68
Weaning	76	75	76

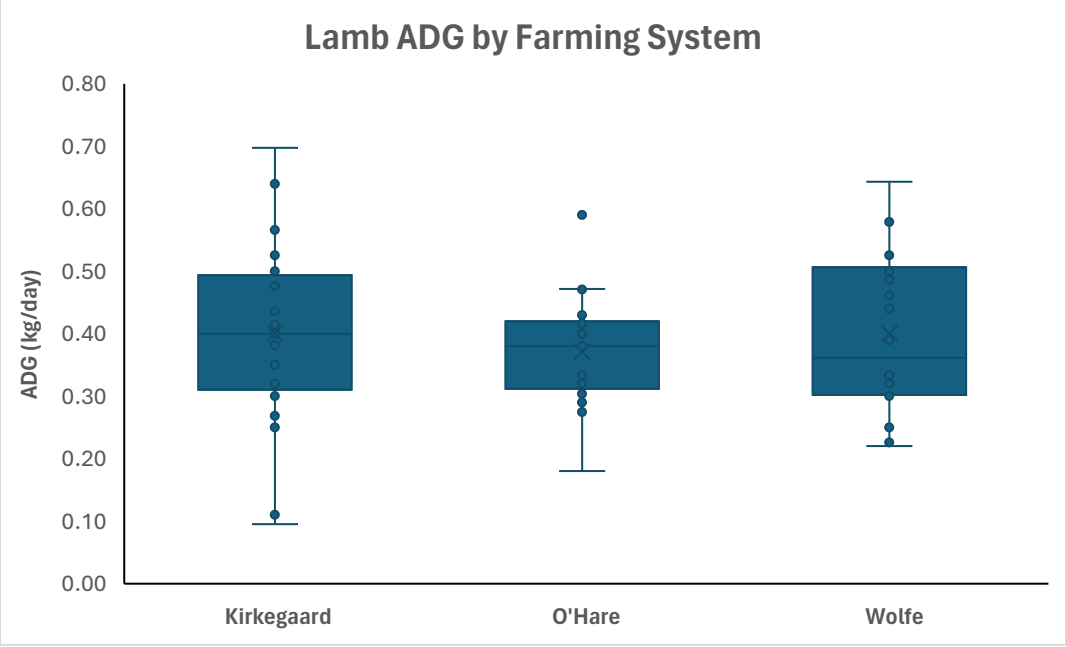

Figure 2: Average daily gain (kg/day) of lambs between lamb marking and weaning (50 days). Lambs averaged 12kg at lamb marking and 30kg at weaning; no difference in average weight between systems

Table 3: Average feeding cost ($) per head per farming system for joining and lambing periods

	Wolfe	O'Hare	Kirkegaard
Joining Period[A]	$9.10	$12.10	$12.10
Lambing Period[B]	$24.40	$26.80	$27.20

[A] 43 days (i.e. 6 weeks) confinement feeding. Doesn't include adaptation to grain in early January
[B] 86 days feeding for Wolfe and Kirkegaard.

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