Faba Bean, Canopy Management, HRZ South East (Bool Lagoon), South Australia
Faba Bean, Canopy Management, HRZ Eyre Peninsula (Yeelanna), South Australia
Faba Bean, Canopy Management, HRZ Mid North (Tarlee), South Australia

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Aim
To reduce lodging and necking whilst increasing podding and grain yield in faba bean by changing row spacing, plant density, plant growth regulators (PGR) and intercropping.

Treatments

Treatment	Plant density (plants/m^2)	Plant growth regulator
Standard plant number + standard row spacing	24	None applied
Reduced plant number + standard row spacing	18	None applied
Standard plant number + paired row[1]	24	None applied
Reduced plant number + paired row[1]	18	None applied
Standard plant number + early PGR	24	Ethephon 240 g/l applied at 1500 ml/ha mixed with the adjuvant BS1000[2] at 500 ml/l
Standard plant number + 0.5 kg/ha canola	24	None applied

[1]Every second row removed after plant emergence.
[2]It is not recommended to use an adjuvant with Ethephon.

Table 2. Trial site details

	Bool Lagoon	Yeelanna	Tarlee
Sowing date	17 May	28 May	21 May
Variety		PBA Samira	
Row spacing (cm)	21	25	23
Fertiliser (kg/ha)[1]	80	100	80

[1]MAP (9.2, 20.2, 0, 2.7) + Zn (2.5)

Results and interpretation
- Key messages: Incorporating canola as a companion plant did not increase grain yield at all sites in 2019. Plant growth regulator used to manipulate canopy structure increased grain yield. Further work is required to understand the effects on plant density, row arrangements, and companion species on canopy structure and grain yield production.

- Grain yield: The grain yields were not different between paired row arrangements and the standard row arrangement at Tarlee in 2019. Conversely, paired row arrangements produced lower grain yields compared to the standard row arrangements at Yeelanna and Bool Lagoon. Further work is required to understand this result. Interestingly, lower plant numbers at all sites did not result in a grain yield reduction compared to the standard plant number. An assessment of pods per plant at Tarlee demonstrated the plants compensated for the reduced plant number by producing more pods per plant. As seen in previous work on faba bean canopy management, the application of Ethephon did not influence grain yield. Further, Ethephon did decrease height of faba bean at maturity at Yeelanna.

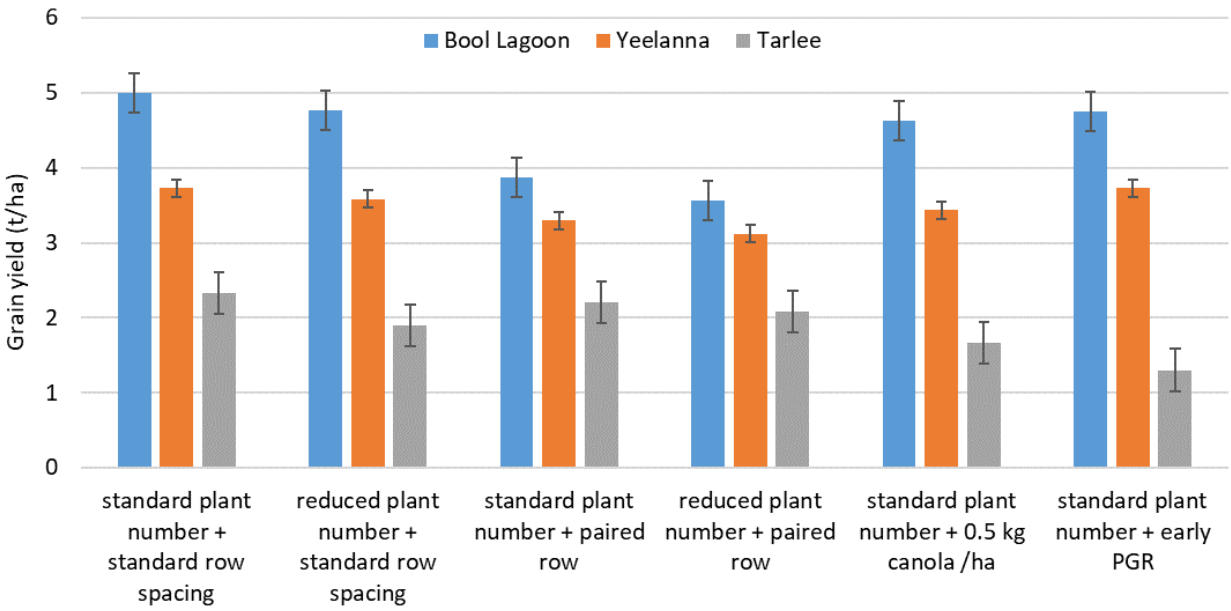

Figure 1. Grain yield of PBA Samira faba bean in response to canopy management treatments at Bool Lagoon, Yeelanna and Tarlee, 2019. Error bars represent least significant difference between treatments at each site (P<0.05).

Acknowledgements

The research undertaken as part of the GRDC-funded Southern Pulse Agronomy project is made possible by the significant contributions of growers through both trial cooperation and the support of the GRDC and the authors would like to thank them for their continued support. The continued assistance in trial management from SARDI Agronomy groups at Clare, Minnipa, Struan and Port Lincoln is gratefully acknowledged and appreciated. The authors would also like to gratefully acknowledge SARDI Plant Pathology and Soil Biology groups for their scientific input and assistance, as well as advisors and grower groups involved in the project.