VGIP project 2B Cereals – Intercropping to exploit rainfall for profit project

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The 'Intercropping to exploit rainfall for profit' project is a three-year investment through the Victorian Grains Innovation Partnership; an initiative of the GRDC and Agriculture Victoria.

NORTH EAST SATELLITE SITES 2020 COMPANION CROPPING

For dryland cropping systems in the medium and high rainfall zones across southern Australia, production is primarily limited by efficient use of available water. While in most areas, yields are limited by insufficient rainfall, in the high rainfall zone yields are often limited by periods of excess rainfall. Over the last decade growers have made significant improvements in improving water use efficiency through better summer fallow management and optimal sowing of winter crops. Companion cropping may provide an alternative approach to increase production by reducing pests and diseases, increasing nitrogen fixation and utilising water more effectively. The evolution of farming systems that maximise the capture and conversion of rainfall to product over the whole year is an opportunity to increase farm profitability and stabilise year-to-year variation.

Aim

This project aims to make the most of growing season and total rainfall via a range of agronomic and rotation options (companion and double crops) to improve the efficiency of use of this water and exploiting out of season resources (e.g. spring and summer cropping). Overall the key project outcomes are expected to be:

- Better use solar radiation and water per unit of land by improving water management.
- Better use of total rainfall across years will raise profits and stabilise income for growers.
- If total rainfall was used more efficiently:
  - 15 percent increase in crop profit across 80 percent of the medium and high rainfall zones in the southern region of Australia
  - 20 percent increase in yield income stability.

Treatments sown

Field Pea 100%	Field Pea 75% Canola 25%	Field Pea 25% Canola 75%	Canola 100%	Companion 1 Mixes
Faba Beans 100%	Faba Beans 75% Wheat 25%	Faba Beans 25% Wheat 75%	Wheat 100%	Companion 2 Mixes
Faba Beans 100%	Faba Beans 75% Canola 25%	Faba Beans 25% Canola 75%	Canola 100%	Companion 3 Mixes
Barley 100%	Barley 75% Canola 25%	Barley 25% Canola 75%	Canola 100%	Companion 4 Mixes

Varieties sown

Crop	Cultivar	Target density (plants/m2)
Fields Peas	Butler	60
Canola	Hyola 580 CT (dual herbicide tolerance to triazines and imis)	60
Wheat	Sheriff CL (imi herbicide tolerant wheat with Trojan type maturity)	170
Faba bean	Bendoc (imi tolerant)	35
Barley	Spartacus (imi tolerant)	170

Burramine South site plan

* 2 strikes per plot; +N plots received 100 kg/ha Urea on 5th August 2020