

Benefiting from dual-purpose crops

Producer case study: Ben Webb, Kojonup WA

Key findings over the years

- Implementing dual-purpose cropping practices into Ben's farming system increased his whole-farm profit by 15%.
- Dual-purpose cropping practices enabled Ben to utilise his lower lying country more productively.
- Dual-purpose cropping practices reduced supplementary feeding throughout autumn on Ben's property.

Producer Demonstration Site Background

In Western Australia's Great Southern region, where mixed farming enterprises are prevalent, the integration of dual-purpose crops has emerged as a promising strategy to enhance profitability. Dual purpose crops are grazed by livestock early in the season, left to recover and then harvested as normal at the end of the growing season. Grazing crops offer a unique opportunity to address the autumn feed gap through grazing, thereby reducing reliance on costly supplementary feeding and improving livestock productivity.

Southern Dirt Inc, a grower group based in Kojonup, WA, secured funding through MLA's Producer Demonstration Site (PDS) program to explore the potential benefits of dual-purpose crops for producers in their mixed farming enterprises. This initiative aims to demonstrate how integrating these crops can optimise farm operations, potentially reducing costs associated with supplementary feeding while enhancing overall productivity and profitability. This project is poised to provide valuable insights and data that can inform decision-making among local producers, supporting sustainable agricultural practices in the region.

A deep dive into on farm practice

Producer Ben Webb whose property is located 40km West of Kojonup, in Qualeup, has been an active participant in the program facilitated by Southern Dirt over three consecutive seasons - 2021, 2022 and 2023.

Ben and his family run a mixed enterprise consisting of 2,300 arable hectares, 1,450ha sown cereal, 50ha sown hay and runs 10,000 head of Merinos. Duplex loam over clay with a varying content of gravel make up the soil composition.

Participation in the program has allowed Ben to gain greater knowledge of strategic grazing methods to assist in the commonly experienced feed deficit during autumn. Through the project Ben has found dual-purpose crops are a cost-effective means of bridging the autumn feed gap.

"The profit that is gained from reduced supplementary feeding outweighs the yield penalty, in my experience."

Ben also found that dual-purpose crops were most valuable on frost prone areas of the property because the yield penalty tended to be lower. Additionally, if there was a weed issue, he could manage it by pulling the paddock out of the cropping rotation in the following year. Ben avoided crop grazing on his productive continuous cropping paddocks because he didn't want to risk any problems.

Webb's Economic Results

The key results from an economic analysis of dual-purpose cropping on Webb's farm are provided below. This analysis was conducted using an advanced whole-farm economic model that evaluates the impact on supplementary feeding costs, the value of deferred pastures, the ability to meet liveweight targets, and the effect of grazing on crop production.

On Webb's farm, crop grazing takes place on low-lying areas, with a maximum area of 80 hectares. The farm consists of 40% pasture and has a stocking rate of 13.8 DSE/ha (without crop grazing Webb expected to reduce stocking rate by 1 DSE/ha). Based on three years of trials, the average yield penalty from crop grazing was 6%.

The results show that grazing around 500kg/ha of crop in July increased whole-farm profit of the model farm by almost \$38,000 per annum which represents around a 15% increase (Table 1).

The increase in profit was brought about by increasing stock numbers, whilst holding crop and pasture areas constant. Furthermore, there was a slight reduction in supplementary feeding required to carry the sheep through autumn.

Table 1: Impact of dual-purpose cropping on farm profitability.

Change in farm profit (\$)	\$38,000
Change in gross margin (\$/ha)	\$19/ha
Change in gross margin (\$/WgHa)	\$46/WgHa

Table 2: Impact of dual-purpose cropping on supplementary feeding.

	Without crop grazing	With crop grazing
Stocking rate (DSE/WgHa)	12.8	13.8
Supplement fed (kg/DSE)	58	53

A wrap on Dual Purpose Crops

Overall, grazing small quantities of crops for short periods in mid-winter may substantially improve farm profitability.

To get the maximum benefits from crop grazing, small changes to the whole farm strategy such as increasing stocking rate are required. Furthermore, farmers can derive benefits from crop grazing by selecting appropriate paddocks to graze such as frost prone areas.

For further information: Sheridan Kowald, Southern Dirt Inc **M** 0455581729 **E** eo@southerndirt.com.au

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