

Pasture improvement using fodder cropping for weed control ensures good returns

Case Study

Richard and Kerry Ogilvie moved from South Australia in 2013, when they purchased Te-Angie and Forest Lodge, near Ebor on the northern tablelands of NSW. Together with their son Michael and his partner Claire they run a Hereford stud, commercial Herefords, a composite prime lamb flock and trade cattle and lambs on 4,050 ha.

The soils across the properties are mixture of grey loams, light trap and basalt. The average annual rainfall is 1,000 mm.

The properties had historically been used for grazing fine wool Merinos with limited applications of superphosphate. The average stocking rate was 5 dse/ha.

Richard believed he could substantially improve the productivity of the property through a program of pasture improvement and associated application of fertiliser, using his cropping skills gained from farming in South Australia.

As part of the MLA funded Producer Demonstration Site program, we monitored the productivity and returns from a 120ha paddock through three phases of pasture improvement.

Phase 1 - The paddock was sprayed with Roundup, Cutless and insecticide in October 2020 and sown with millet in November 2020. The millet was grazed with trade cattle until the autumn of 2021.

Phase 2 – The paddock was sprayed out in autumn 2021 and sown with Bennett's Wheat. The wheat was grazed with cows and calves, ewes and lambs and trade cattle until spring 2021.

Phase 3 – The paddock was sprayed out again in spring 2021 and fallowed until January 2022 when it was sown with a mix of Tower Fescue, Prairie Grass, Holdfast Phalaris, Howlong Cocksfoot, chicory, plantain and red clover at a rate of 16 kg/ha. This sowing was brought forward as a consequence of the wet conditions in the summer of 2021/22 and concerns about trafficability in the autumn. From March 2022 the paddock was stocked with heifers.

The returns from each phase of pasture improvement, detailed in Table 1, are based on actual weight gains of trade cattle and agistment rates applied for grazing by breeding cows and ewes. No allowance has been made for changes in livestock inventory value during the period of grazing.

Summary	Gross Margin/ha/year	Return on investment
Millet phase	\$390	126%
Wheat phase	-\$21	-7%
Permanent pasture - 5 years	\$558	317%
Permanent pasture - 10 years	\$558	436%
Permanent pasture - 15 years	\$558	499%

The millet phase of grazing produced 23,683 kg of liveweight gain at an average cost of \$1.88 per kg of liveweight gain. The weight gain was valued between \$4.20 and \$5.20/kg liveweight at the point of sale. The gross margin was \$390/ha and the return on investment in the millet phase 126%.

The wheat phase was disappointing, conditions were wet and crop growth disappointing. Agistment rates were applied to cows and calves and ewes and lambs grazing the paddock. Actual liveweight gain for trade cattle was valued at \$5/kg. The wheat phase made a small loss of \$21/ha but allowed for additional weed control. In future Richard will use Triticale rather than winter wheat as he believes it will handle the cold wet conditions better.

The permanent pasture was sown in January 2022 and has been grazed since March. The stocking rate of the paddock is conservatively estimated to have increased from 5 dse/ha to 14 dse/ha on a year-round basis. Using an average gross margin value of \$62/dse, the value of the additional 9 dse/ha carrying capacity is \$558/ha/year after allowing for maintenance applications of fertiliser. The returns in the first year pay for the pasture improvement costs. The return on investment increases the longer the period until the pasture has to be renovated. Even with a 5-year lifespan the return on investment is \$317%.

The Northern Pastures Group will continue to monitor the performance of this paddock to confirm the estimated improvement in carrying capacity and returns.

Richard has identified additional benefits from pasture improvement. Calf weaning weights from improved pastures are up to 100 kg higher than calves from unimproved paddocks. Similarly, cows weaning calves off improved pastures are significantly heavier. The pasture improvement program at Te-Angie is also contributing to the capital value of the farms.

