

Trade-offs: the value of lucerne to a wool enterprise in SE South Australia

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In south-east SA dryland lucerne is mainly grown to provide green feed for weaner sheep during summer as annual pastures decline in quality. Winter cleaning of lucerne pastures is used to control annual grasses and seed infestation of stock but this also reduces the supply of pasture in the following winter for lambing ewes.

A Merino medium wool producer near Keith in South Australia wanted to know: whether lucerne could improve the carrying capacity of the property, the most profitable area of his farm to sow to lucerne and the effect of winter cleaning lucerne. The decision support tool GrassGroTM (Moore et al, 1997 Agric. Syst. 55:535-582) was used to simulate a self-replacing Merino ewe flock at Willalooka from 1962 to 2000. Ewes lambed in late July and wether weaners were sold to the live export market. The proportion of lucerne pasture varied from 5-100% of the total grazed area over stocking rates from 3.5 –17.5 ewes/ha.

Lucerne increased the chance of wether weaners reaching heavy trade weights at sale in May from about 13% to 35%, depending on the area of the farm sown to lucerne. Winter cleaning further improved this probability to about 75%. However these benefits are not reflected in higher gross margins for the whole breeding enterprise because of a reduced pasture supply and increased supplementary feeding for ewes during winter. On well fertilised annual pastures, increasing the stocking rate from 5.5 ewes/ha to 11.5 ewes/ha increased average gross margins from \$120/ha to about \$200/ha (Fig. 1). At stocking rates of 5.5 and 9.5 ewes/ha there were only marginal differences between gross margins and downside risk for all lucerne areas, whether lucerne was grown with annual grass or as a pure stand (winter cleaned).

Stocking rate had a much more positive impact on gross margin than the area sown to lucerne. This exploratory analysis with GrassGro has caused us to question whether lucerne is of benefit for a Merino breeding flock in a region with unreliable summer rainfall.

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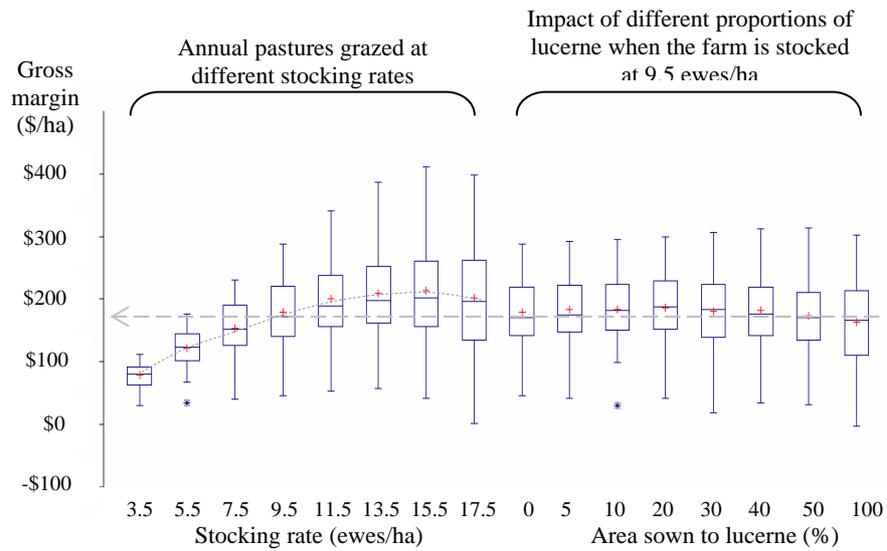


Figure 1. Distribution of gross margins from 1962-2000 for a Merino ewe enterprise at stocking rates between 3.5 – 17.5 ewes/ha on annual pasture and with variable areas of lucerne at a stocking rate of 9.5 ewes/ha. Lucerne pastures were not winter cleaned. The length of the box shows the middle 50% of the gross margin values. The horizontal line in the box is the median gross margin and the cross (+) is the average. The lines and symbols extend beyond the ends of the box as far as the minimum and maximum gross margins. To aid comparison a horizontal dotted line is drawn through the median for annual pasture stocked at 9.5 ewes/ha.