

OPTIMISING FEED SUPPLY, REPRODUCTIVE EFFICIENCY AND PROGENY GROWTH TO MEET MARKET SPECIFICATIONS. 5. ECONOMIC ANALYSIS OF AUTUMN AND WINTER CALVING

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Beef enterprises in the Mediterranean environment of southern Western Australia traditionally calve in the dry autumn with reliance on supplements until sufficient pasture is available after the opening rains. Changing calving time to align feed supply with feed requirements should reduce the need for supplementary feeding, and reduce the costs of producing calves. This paper reports the economic analysis of autumn and winter calving (Read *et al.* 2004; Tudor *et al.* 2004). Three scenarios were analysed: 1) a traditional autumn calving enterprise; 2) a winter calving enterprise with an equivalent stocking rate as in scenario 1; 3) a winter calving enterprise with a 10% increase in stocking rate.

Assumptions used in the economic analysis include: 1) a property of 1,170 ha with a stocking rate of 9.1 dse/ha, with all supplementary feed grown on the property; 2) autumn calving cows fed 5 kg/hd/day of pasture for 150 days, and winter calving cows fed 2 kg/hd/day for 90 days; 3) fodder production of 5 t/ha at a cost of \$100/t; 4) reduction in demand for supplementary feed in the winter herd increases the available area for grazing, and the number of cattle to maintain an equivalent stocking rate; 5) at weaning in January, autumn calves were approximately 80 kg heavier than winter calves; 6) heifer and steer calves are sold at values of 160 and 165 c/kg liveweight, respectively. There is some argument for the lighter younger winter calves receiving a premium price, however, this was not adopted here.

Table 1. Economic indicators associated with autumn and winter calving.

Key performance indicator	Autumn calves	Winter calves	Winter calves + 10% stocking rate
Enterprise operating profit	\$90,341	\$94,795	\$131,197
Operating profit per hectare	\$ 77.00	\$81.00	\$112
Herd cost per head ^A	\$121.26	\$60.45	\$60.45
Kilograms sold per hectare	280	254	279
Cost of production per kg sold	\$1.28	\$1.21	\$1.13

^A Variable costs directly related to the herd e.g. requisites, supplements and selling costs

Results from the economic model indicate that changing calving from autumn to winter at an equivalent stocking rate increased the operating profit of the enterprise by approximately 5%, and by approximately 45% when the stocking rate increased by 10%. This improvement in financial performance was primarily due to a reduction in the cost of production in the winter calving enterprises by around 5% (7 c/kg sold) in an equivalent stocking rate (scenario 2) and 12% (15 c/kg sold) with the increased stocking rate (scenario 3). In scenario 2, although revenue was reduced, the cost of production outweighed the reduction in income. Scenario 3 generated similar revenue and kilograms of beef sold/ha to the autumn calving enterprise (scenario 1), but with around a 12% reduction in cost of production, this type of enterprise was more profitable than a traditional autumn calving operation.

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