

Provision of an Edible Shelter did not Increase the Survival of Twin Lambs Born to Merino Ewes During Winter in Western Australia

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Alexander *et al* (1980) showed that the provision of grass wind-breaks for lambing Merino ewes increased the survival rate of single lambs by 10% and that of twin lambs by 32%. Merino ewes are reluctant to seek shelter prior to lambing (Lynch and Alexander 1980). Hence, a successful new system for increased survival of lambs must provide shelter that is cost effective and cannot be avoided by lambing ewes. Cereal crops (Saia oats) can be used by lambing Merino ewes as an edible shelter (Glover *et al* 2008; Oldham *et al* 2008). They provide a cost effective shelter that is unable to be avoided by lambing ewes. Dual purpose wheats are considered a viable option as edible shelters for lambing ewes. They can be grazed between tillering and stem elongation without adversely affecting yield (Grain and Graze 2008). This study tested the hypothesis that the survival rate of twin lambs born in a Wedgetail wheat crop will be higher than that of twin lambs born on an annual pasture.

Mixed age Merino ewes mated to South African Meat Merino rams were real-time ultrasound scanned on 05 May 2009 (day 90 of pregnancy) to determine litter size. On 23 June 2009 (day 140 of pregnancy), the twin-bearing ewes were randomly allocated to either an adjoining Wedgetail wheat crop (25 ha) or pasture paddock (15 ha) following stratification by condition score (mean condition score 2.4) and age. The Wedgetail wheat was approximately 16 ± 1.3 cm high and had a biomass of 1964 kg DM/ha and the pasture was 6 ± 1 cm high with a biomass of 1506 kg DM/ha. The wheat crop was stocked with 238 twin-bearing ewes (9.5 ewes/ha) and the pasture with 107 ewes (7 ewes/ha). Nine enclosure cages (0.81m^2) were placed along a W shaped transect in the Wedgetail wheat crop to exclude animal grazing. Temperature (min and max), rainfall and wind speed at 20 cm above ground were recorded every 30 minutes with an automated weather station. On 20 August 2009 the ewes and lambs were removed from the crop and pasture paddocks. The ewes were condition scored and wet and dried and the number of lambs in the crop and pasture paddocks was recorded. The yield and quality of the grazed and ungrazed Wedgetail wheat crop were determined at harvest on the 21 December 2009.

The total number of lambs born per ewe scanned pregnant was not significantly different ($P > 0.05$) for the crop and pasture treatments ($274/207 = 132\%$ cf. $126/93 = 135\%$ respectively). The level of mortality recorded for the twin lambs in this study is around the industry average of 30% (CM Oldham pers. comm.). It is likely that a combination of the relatively mild weather during lambing (mean daily min 5.9°C , max, 16.9°C and rainfall 3.2 mm) and the failure of the crop to reach the target height of 25 cm contributed to similar mortality rates in both of the treatments. There was also no difference in the condition score of the ewes between treatments at the completion of grazing (2.47 cf. 2.51 for crop and pasture respectively). The yield (3.9 t/ha cf. 4.6 t/ha), hectolitre weight (81.87 kg/100L cf. 74.93 kg/100L) etc were not significantly different for the grazed and ungrazed crop. Hence grazing did not have any detrimental affect on the yield or quality of the Wedgetail wheat crop.

The results from this study confirm those of Glover *et al.* 2008 and Oldham *et al.* 2008 which showed that provision of an edible shelter to twin-bearing ewes did not increase the survival of their lambs. However, the opportunity to run higher stocking rates on the crop increased the production of lamb per hectare (11 cf. 8.4) in comparison to pasture with no effect on crop quality or yield. It also provided the opportunity to defer annual pastures for a period of 4 weeks at the time of the year when pastures were establishing.

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