

## LIFETIME WOOL. 1. PROJECT OVERVIEW

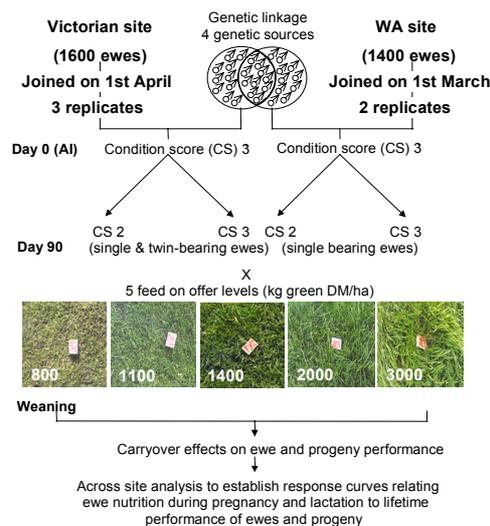
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‘Lifetime Wool’ is a national project funded by Australian Wool Innovation to develop profitable ewe management guidelines for woolgrowers across Australia. Most research on the effects of nutritional management of ewes has concentrated on the impacts on the dam herself, and lamb birth weights and survival. New opportunities for developing optimum ewe management systems, based on achieving liveweight and body condition score targets at critical stages of the reproductive cycle, have emerged from the acceptance that nutrition during pregnancy can also have substantial impacts on the lifetime performance of the progeny. There is evidence that progeny from better fed ewes will produce more wool and finer wool throughout their lives (Kelly *et al.* 1996). Other progeny traits, such as reproductive performance, body composition and susceptibility to disease and stress (Cronje 2003), are also influenced by maternal diet, but their importance has received little attention.

Optimal allocation of feed resources to breeding ewes is dependent on the identification of the critical windows during the reproductive cycle where nutritional manipulation can influence progeny lifetime performance, plus the levels of nutrition needed to induce such responses. Until recently, most studies of the impacts of nutrition on foetal growth and development tended to focus on late pregnancy. There is a clear need for dose-response experiments to determine the levels of ewe nutrition needed at different stages of the reproductive cycle to optimise both wool and meat production per hectare.



**Figure 1. Design of plot-scale experiments.**

The Lifetime Wool project has 4 distinct phases: 1) plot-scale research (2001-2003; Figure 1); 2) paddock-scale research and demonstration (2003-2005; Oldham *et al.* 2004); 3) whole-farm systems modelling (Young *et al.* 2004); and 4) extension and technology transfer (2004-2008). The plot scale research sites are located at Coleraine, Victoria (36°58'S, 141°17'E) and Kendenup, Western Australia (34°27'S, 117°35'E). Ewes at each site were fed to maintain or lose weight during early and mid-pregnancy, before grazing different levels of pasture during late pregnancy and lactation. This series of papers reports on preliminary data from the plot-scale research sites.

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