VARIATION AMONG MATERNAL SIRES FOR LAMB AND WOOL GROSS MARGIN PERFORMANCE OF THEIR CROSSBRED DAUGHTERS

N.M. Fogarty[1], V. Ingham[1], L. McLeod[1], G. Gaunt[2] and L. Cummins[3]
[1]NSW Department of Primary Industries, The Australian Sheep Industry CRC, Orange, NSW 2800
[2]Department of Primary Industries, Primary Industries Research Victoria, Rutherglen, Vic. 3685
[3]Department of Primary Industries, Primary Industries Research Victoria, Hamilton, Vic. 3300

SUMMARY
The Maternal Sire Central Progeny Test evaluated 91 maternal sires from several breeds at 3 sites over 3 years with genetic links. The 2846 1stX ewe progeny were joined to terminal sire rams for 3 years and their 8878 2ndX progeny slaughtered. The annual $ gross margin for individual ewes comprised income from lamb carcases, with carcase discounts, lamb skins and ewe wool production and the costs for management of ewes and lambs and marketing. There was a range of $19 gross margin/ewe/year among sire breeds of the 1stX ewes, with a range of over $40 gross margin/ewe/year within the 18 Border Leicester sire groups, and considerable overlap of the sire breeds. Lamb turnoff rate was the major profit driver with lamb growth rate and carcase fat levels also contributing. There was some variation in ranking of sire breeds (and sires) with the production system and environment.
Keywords: ewe performance, lambing rate, growth rate, carcase fat, Border Leicester

INTRODUCTION
Productivity of the ewe flock has a major impact on lamb enterprise profitability and stocking rate. Income is from the sale of lambs (determined by number produced, carcase weight and fat level), skins and ewe wool (weight and fibre diameter). Potential productivity of the ewes for these traits is determined by their genetic merit. The current low sheep population in Australia with high demand for sheep meat is a further imperative to lift productivity of ewe flocks. Crossbreeding is used effectively to maximise heterosis among commercial flocks of crossbred ewes that predominate in the specialist lamb sector. Genetic improvement can further raise the productivity of crossbred flocks with a wide range of genotypes and genetic technology now available to achieve more rapid genetic improvement. The Maternal Sire Central Progeny Test (MCPT) has evaluated sires from several maternal breeds for the performance of their 1stX (slaughter wethers and breeding ewes) and 2ndX progeny (Fogarty *et al.* 2001). The between breed and sire within breed variation in gross margin performance for the lamb production of the 1stX daughters of the sires in MCPT is presented.

MATERIALS AND METHODS
MCPT design. Maternal sires were entered by breeders and mated generally to Merino ewes to produce 1stX progeny. The 1stX wethers were slaughtered and the 1stX ewes retained and mated to terminal sire rams to produce 2ndX slaughter lambs. Lamb production (lambing rate, 2ndX lamb growth and carcase) and wool production (fleece weight and fibre diameter) from the 1stX ewe daughters were measured over 3 years. A total of 91 maternal sires, including 3 link sires, were mated at 3 sites over 3 years (Cowra, NSW and Hamilton, Vic, Feb/Mar 1997-1999; Struan, SA, Jan 1998-2000), with 1stX ewes born at Struan, evaluated at Rutherglen, Vic. The matings aimed to produce >25 1stX ewes per sire. The sires were from the Border Leicester (BL), East Friesian (EF), Finnsheep