

MILK PRODUCTION OF F1 HEIFERS DERIVED FROM ANGUS AND HEREFORD COWS AND Sired BY ANGUS, HEREFORD, LIMOUSIN AND SIMMENTAL BULLS.

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Producers currently use BREEDPLAN to select sires with the most appropriate traits to meet their breeding objectives. Whilst emphasis is normally placed on carcass and growth rate traits for selection of sires for use in steer production systems, breed differences in milk production are valuable when selecting sires for producing replacement females and vealer production systems. Significant across-breed variation occurs in milk production (Sawyer *et al.* 1994), however there is little information on milk production of beef breeds under grazing conditions in Australia.

A total of 88 sires (22 from each of 4 different breeds; Angus (Ang), Hereford (Her), Limousin (Lim) and Simmental (Sim), were joined to Her and Ang cows, to provide data for use in Breedplan to produce across-breed estimated breeding values. A representative group of bulls within each breed were used by selecting similar numbers from each percentile band on 400-day growth rate EBVs. This paper reports milk production differences of 370 2-year old calving F1 female progeny born in 1998 and 1999 at Hamilton and Struan. Measurements were taken in early, mid and late lactation, using the weigh-suckle-weigh technique (Dawson *et al.* 1960).

Milk production was averaged over the 3 sampling periods and data was analysed using residual maximum likelihood (REML), with year, owner and mob being used as random effects, with dam breed, sire breed and average milking date (because it had a significant effect ($P=0.002$) on yield) as fixed effects. There was a significant effect of both dam breed ($P=0.004$; s.e. 0.18) and sire-breed ($P<0.001$; s.e. 0.25) (Figure 1) with the predicted mean yield being 4.3 and 4.9 kg/head/day for the Her and Ang dams respectively. The respective yield for the Ang, Her, Lim and Sim sires was 4.6, 4.0, 4.5 and 5.3 kg/head.day⁻¹

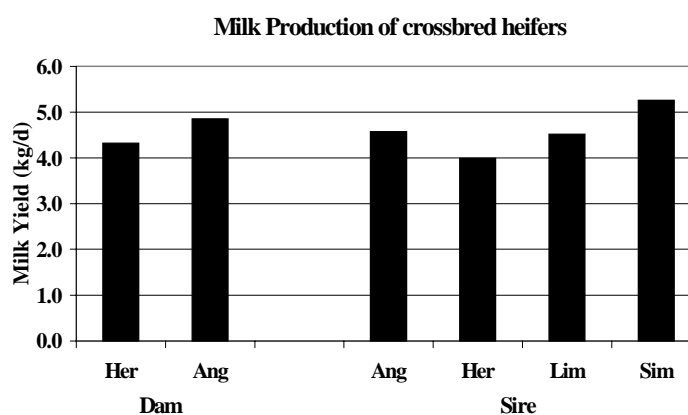


Figure 1. Dam and sire effects on milk production

The heifers from the Angus dams produced 0.5 kg more milk than those from the Hereford dams, their productivity being similar to that reported by Sawyer *et al.* (1994). Whilst lower than the other three sire breeds, the productivity of the Hereford-sired progeny was higher than that reported by Saul and Morgan (1994). The Simmental sired heifers produced significantly more milk than those from the other 3 sire breeds, being similar to that reported by Sawyer *et al.* (1994) for Simford heifers. Milk production is an economically important trait as it influences weaning weight (Sawyer *et al.* 1994). These results indicate that significant differences exist among the breeds studied, and that potential exists to increase milk production through the strategic use of crossbreeding programs.

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