# MUSCLING AND CUT-WEIGHTS OF HEAVYWEIGHT FIRST- AND SECOND-CROSS FEEDLOT-FINISHED LAMBS

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The shift to heavier slaughter weight of Australian lamb is driven partly by the improved processing efficiency achieved with heavier carcasses, and partly by the need for larger portion weights to allow greater flexibility in presenting new retail cuts. In particular, muscularity and muscle size is of increasing importance in providing portions that meet the strict weight demand of the food-service sector. A study was conducted to evaluate the practicality of producing lamb carcasses over 22 kg with 8-20 mm of fat at the 12th rib, for the food service market (Shands *et al.* 2002). A subset of lambs carcasses was assessed for muscularity and conformation and boned-out into commercial cuts to establish the effect of sire and maternal genotype on these traits.

Conformation of carcasses from cryptorchid lambs (n = 44) was assessed on a numeric scale (1-5) corresponding to the EUROP score, with 1 being excellent. Carcasses were also assessed for muscularity (1-5) by making a subjective assessment of carcass conformation and adjusting the conformation score for the extent to which muscle rather than fat contributed to conformation. Weight of the short-loin, 8-rib rack and chump (cap-on), were determined on 42 carcasses.

At a standardised carcass weight (28 kg), first-cross lambs had a superior muscle score than did second-cross lambs (Table 1). Sire-type also significantly affected muscle score and conformation. Despite these effects of dam and sire-type on the visual appraisal of the carcass, there was no significant effect of sire-type or dam-type on the eye muscle depth (Shands *et al.* 2002), or weight of short-loin or chump in the carcass (Table 1). There was a significant sire-type x dam-type interaction for the weight of 8 rib rack, such as that for Texel (T) and Coolalee (C) sired lambs, rack weight was higher in lambs born to first-cross ewes (839 v 981 g T; 995 v 893 C), while for Dorset sired lambs, rack weight was heavier in lambs born to Merino ewes (914 v 814 g).

**Table 1. Least squares means ± s.e. of conformation and muscle score for cryptorchid lambs (n = 44) and for cut weights from all lambs at 24, 28 and 32 kg carcass weight (n = 42)**

| | Conformation | Muscle Score | Weight (g) short loin | Weight (g) 8-rib rack | Weight (g) chump on |
|---|---|---|---|---|---|
| 2nd X | 2.2 ± 0.1 | 2.3 ± 0.1 | 442 ± 15 | 882 ± 15 | 453 ± 14 |
| 1st X | 2.6 ± 0.2 | 3.0 ± 0.2 | 424 ± 22 | 930 ± 21 | 478 ± 20 |
| | * | * | ns | P = 0.06 | ns |
| Texel | 1.7 ± 0.2 | 2.2 ± 0.2 | 425 ± 24 | 910 ± 23 | 491 ± 22 |
| Dorset | 2.8 ± 0.1 | 2.8 ± 0.1 | 445 ± 17 | 864 ± 16 | 447 ± 16 |
| Coolalee | 2.8 ± 0.2 | 2.9 ± 0.3 | 429 ± 27 | 944 ± 26 | 459 ± 25 |
| | ** | ** | ns | * | ns |
| 24 kg | 2.8 ± 0.2 | 3.3 ± 0.3 | 376 ± 26 | 752 ± 25 | 371 ± 23 |
| 28 kg | 2.4 ± 0.1 | 2.6 ± 0.1 | 433 ± 13 | 906 ± 13 | 466 ± 12 |
| 32 kg | 2.1 ± 0.2 | 2.0 ± 0.2 | 491 ± 24 | 1060 ± 23 | 560 ± 22 |

While conformation and muscle score were significantly better for 2nd cross than 1st cross lambs, differences in carcass conformation and muscling were not associated with significant changes in eyemuscle area (Shands *et al.* 2001) or commercial cut weight. This supports the findings of Hopkins *et al.* (1998) that visual conformation scores are not consistent indicators of the commercial merit of carcasses, despite being a significant consideration in wholesale and retail valuation of lamb (Hopkins *et al.* 1996). It is suggested that benefits of valuing carcass conformation may be associated with changes in the shape of cut rather than weight of cut.

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HOPKINS, D.L. and FOGARTY, N. (1998). *Meat Sci.* **49**, 459-75.
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