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## RELATIONSHIPS BETWEEN MILK YIELD, MILK CONSUMPTION AND LAMB GROWTH IN ROMNEY, DORSET AND CROSSBRED SHEEP

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The milk production by ewes and water turnovers of their lambs during the first 5½ weeks of lactation were measured using the oxytocin-hand milking and tritiated water techniques. A total of 37 Romney, Dorset and reciprocal cross two-tooth ewes rearing single lambs sired by Suffolk or Southdown rams were involved.

Dorset ewes yielded 58% more milk than Romneys and reared lambs with 21% greater water turnovers and 21% heavier liveweights. Crossbred dams and their lambs performed intermediate between the two parent breeds. Suffolk-sired lambs had 5% greater turnovers and 5% heavier liveweights than Southdown-sired lambs although their dams yielded similar amounts of milk.

Regression analysis showed no significant sire or dam breed slope differences for the relationships between milk yield or water turnover and lamb liveweights at 5½ weeks. Water turnover provided a slightly better estimate of final lamb liveweight ( $r^2=0.76$ ) than milk yield ( $r^2 = 0.62$ ).

The relationship between water turnover and milk yield varied between dam breeds according to the levels of milk production. The results suggested that higher yielding Dorset and Dorset × Romney ewes produced milk in excess of single lamb requirements for a longer period than the other dam breeds. The milk intakes of Suffolk-sired lambs more closely approached the limit set by the milk producing capacity of Romney and Romney × Dorset ewes than did those of Southdown-sired lambs.

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