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*Summary only*

## GROWTH RATE SELECTION IN SOUTHDOWN SHEEP

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A sheep breeding improvement programme for New Zealand conditions must have limited objectives and be simple in operation for it to be effective. With this objective in mind Lincoln College initiated a Southdown breeding programme in 1957 in which all ram selection was on the basis of his measured growth rate. Later, progeny test information was used. The programme was designed to be practical and within the capabilities of the average sheep farmer.

Each year until 1967, all Southdown ewes in the flock were randomly mated according to age to the sires selected. All progeny were weighed at birth and weaning, and corrections were made for effects of birth rank and age of dam, prior to computing an index for growth rate. From these records the best sons from the best sires were kept.

From 1967 the problem of consanguinity encountered when randomly mating to Southdown ewes necessitated the using of 400 2-tooth Corriedale ewes for sire evaluation. Each sire was evaluated by mating to 30 of these ewes and so calculating the mean performance of his progeny.

The sire ranking orders obtained when testing with Corriedale ewes sometimes differed from that obtained when using Southdown ewes. As Southdowns are bred for crossing with other breeds for meat production the results obtained by testing with Corriedale (or other breed) ewes may have important applications. Where rams were compared in two seasons the ranking order was unchanged.

Sire selection was carried out for 14 years but the gains of this are difficult to determine as there was no control group. As management over this period has been reasonably constant an idea of progress can be gained by comparing growth performance in different years. In the first five years the mean growth rate of all progeny weaned in the stud was 0.21 kg (0.46 lb) liveweight gain per day. By the last five years this had increased to 0.24 kg (0.53 lb) liveweight gain per day. These results suggest that some progress has been made.