A STUDY OF REGIONAL DIFFERENCES IN WITHIN-FLOCK SOURCES OF VARIATION IN SHEEPLAN RECORDS OF PRODUCTION TRAITS FOR COOPWORTH SHEEP

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ABSTRACT

Performance records on 219,000 ewes and 231,000 lambs from 48 Coopworth flocks were obtained from Sheeplan files. The flocks were divided into 5 climatologically similar regions: Northland; north of Taupo excluding Northland; remainder of the North Island; the South Island north of Palmerston, excluding the West Coast; the South Island south of Palmerston. Flock records were edited in an effort to remove recording errors.

Within-flock environmental estimates were obtained using ordinary least squares procedures for continuous characters or iterative weighted least squares for binomial characters. The within-flock estimates were weighted by the inverse of their standard error's and weighted means of the regional and national fixed effects were obtained. Paternal half-sib heritability estimates were obtained for each flock.

There were few significant differences in the environmental estimates between regions.

The traits examined (with the average of the heritability estimates) were: weaning weight (0.17); ram autumn liveweight (0.24); ewe autumn liveweight (0.26); ram winter liveweight (0.26); ewe winter liveweight (0.31); ram spring liveweight (0.29); ewe spring liveweight (0.34); ram hogget fleece weight (0.29); ewe hogget fleece weight (0.33); survival of all lambs (0.04); single lamb survival (0.05) and multiple lamb survival (0.05); proportion of a ewe's lambs surviving (0.04); number of lambs born to a ewe present at mating (0.12); number of lambs weaned per ewe lambing (0.07); given a ewe lambed, did she bear multiples (0.14); weight of lamb weaned per ewe rearing lambs (0.10). Selection and non-random mating may have biased the estimates.

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