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A STUDY OF BIASES IN DAIRY
SIRE EVALUATION

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ABSTRACT

A total of 8,684 first-lactation records produced in the Auckland region in the dairying seasons 1966-67 to 1972-73, inclusive were assembled. Based on weighted and unweighted intra-sire regressions of progeny performance (deviation from within-herd and within-year contemporary average) on time, a series of estimates of the genetic trend in production for the period were obtained. Variable estimates, allied with large standard errors precluded reliable conclusions on the nature of the genetic trend.

By applying a mixed model solution method of sire-evaluation but only to a restricted sub-sample of the data (2,155 records), breeding values of 47 sires were estimated unbiased by genetic drift. The numbers of records involved were too few to allow a direct comparison of these estimates with estimates of the trend of the same sires obtained by the Farm Production Department of the N.Z. Dairy Board using its method of sire evaluation.

Based on variance component estimates obtained by application of Henderson's Method I, heritability of milk yield and milk solids was estimated to be 0.43 and 0.36 respectively. These estimates agree well with estimates reported elsewhere.

Additional estimates of the genetic trend were obtained by regressing the solutions for the fixed effects (sire-group-effects) of the sire evaluation model on time.

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