

Pharadorn Sopawat 2014: Estimation of Genetic Parameters on Carcass Traits in Crossbred Cattle among Thai Native, Brahman and Charolais. Master of Science (Animal Science), Major Field: Animal Science, Department of Animal Science. Thesis Advisor: Assistant Professor Panwadee Sopannarath, Ph.D. 65 pages.

The objective of this study was to estimate genetic parameters on carcass traits in crossbred cattle among Thai Native, Brahman and Charolais from 672 records from years 2008 to 2013. It was found that effects of sex were not significant on all traits ($P>0.05$). Effects of pairs of permanent teeth were significant on marbling score, cattle with 2 and 3 pairs of permanent teeth have higher marbling score than cattle with primary teeth ($P<0.05$). Effects of contemporary group were significant on all traits ($P<0.01$). Variance components for single trait analyses were estimated by restricted maximum likelihood (REML) procedures with animal model. The estimates of phenotypic variance for final, hot carcass and cold carcass weights, dressing percentage of hot and cold carcass and marbling score were 1,485.40, 693.26, 662.99 kg², 3.85, 3.68 %² and 0.47 score², respectively. The estimates of heritability were 0.31, 0.31, 0.29, 0.04, 0.03 and 0.14, respectively. In sire group, Pearson's correlation coefficients between estimated breeding value (EBV) of final, hot carcass and cold carcass weights were significant (0.90 and 0.89, respectively), but the correlation between final weight and marbling score was not significant (0.02). The sires in the top 10% highest EBV for hot and cold carcass weights and for marbling score were 64.28% (9 heads) and 28.57% (4 heads) of the top 10% (14 heads) highest ranking sire based on final weight EBV. Selection base on final weight, hot carcass and cold carcass weights could be genetically improved in the same direction. However, the selection for improving both weight traits and marbling score trait should be considered simultaneously.

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