

ABSTRACT

Genetic variability of Wagyu cattle estimated by statistical approaches

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The genetic evaluation of economically important traits utilizes estimates of genetic variability, which are represented by heritability. This review summarizes the published heritabilities of traits estimated in Wagyu cattle. Two different mean heritabilities, unweighted and weighted by standard errors, were calculated. In Japanese Black cattle, the average unweighted and weighted direct heritabilities of birth weight were 0.35 and 0.28, respectively, whereas the respective maternal heritabilities were 0.17 and 0.07. The mean unweighted heritability of calf market weight was estimated to be 0.30 in Japanese Black cattle. The mean unweighted heritability of daily gain during performance testing was 0.29 in Japanese Black and 0.40 in Japanese Shorthorn cattle. In Japanese Black cattle, the unweighted mean heritability was 0.48 for carcass weight, 0.46 for rib-eye area, 0.38 for rib thickness, 0.39 for subcutaneous fat thickness, and 0.55 for marbling. The mean weighted heritability of the calving interval was low, and estimated to be 0.05. In general, the heritabilities estimated in Wagyu cattle were similar to those estimated in other beef breeds.