

# Direct genetic, maternal genetic, and heterozygosity effects on weaning weight in a Colombian multibreed beef cattle population

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**Abstract :**

The (co)variance components of BW at weaning (WW) were estimated for a Colombian multibreed beef cattle population. A single-trait animal model was used. The model included the fixed effect of contemporary group (sex, season, and year), and covariates including age of calf at weaning, age of cow, individual and maternal heterozygosity proportions, and breed percentage. Direct genetic, maternal genetic, permanent environmental, and residual effects were included as random effects. Direct, maternal, and total heritabilities were  $0.23 \pm 0.047$ ,  $0.15 \pm 0.041$ , and  $0.19$ , respectively. The genetic correlation between direct and maternal effects was  $-0.42 \pm 0.131$ , indicating that there may be antagonism among genes for growth and genes for maternal ability, which in turn suggests that improving WW by direct and maternal EPD may be difficult. A greater value for the direct heterosis effect compared with the maternal heterosis effect was found. Furthermore, the greater the proportion of Angus, Romosinuano, and Blanco Orejinegro breeds, the less the WW.

**Key Word :**

beef cattle, genetic variable, heterozygosity

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