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

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Abstarc :

The (co)variance components of BW at weaning (WW) were estimatedfor a Colombian multibreed beef cattle population. A single-traitanimal model was used. The model included the fixed effect ofcontemporary group (sex, season, and year), and covariates includingage of calf at weaning, age of cow, individual and maternalheterozygosity proportions, and breed percentage. Direct genetic,maternal genetic, permanent environmental, and residual effectswere included as random effects. Direct, maternal, and totalheritabilities were 0.23 ± 0.047, 0.15 ± 0.041,and 0.19, respectively. The genetic correlation between directand maternal effects was –0.42 ± 0.131, indicatingthat there may be antagonism among genes for growth and genesfor maternal ability, which in turn suggests that improvingWW by direct and maternal EPD may be difficult. A greater valuefor the direct heterosis effect compared with the maternal heterosiseffect was found. Furthermore, the greater the proportion ofAngus, Romosinuano, and Blanco Orejinegro breeds, the less theWW.

Key Word :
beef cattle, genetic variable, heterozygosity

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