

EFFECT OF THE INCLUSION OF THE COVARIANCE BETWEEN DIRECT AND MATERNAL EFFECTS ON GENETIC PARAMETERS OF PRE-WEANING WEIGHT GAINS

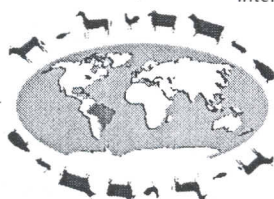
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The objective of this work was to evaluate the effect of the covariance between direct and maternal effects on genetic parameters for average daily weight gain from birth to weaning (GBW). The (co)variance components were obtained using the Restricted Maximum Likelihood. Two models were utilized: model 1 included the direct and maternal genetic effects and permanent environmental effects as well as the fixed effects of the contemporary group and age of dam at calving, assuming the covariance between direct and maternal effect; model 2 included the same effect of model 1, but the covariance between direct and maternal effects was considered zero. The direct and maternal heritabilities estimates for GBW were 0.61 and 0.16 for model 1 and 0.44 and 0.03 for model 2, respectively. The covariance between direct and maternal effects was -0.64 for model 1. The inclusion of the covariance between genetic and maternal effect showed be considered to obtain heritabilities estimates without bias.

RELATIONSHIPS AMONG GROWTH CURVE PARAMETERS AND MILK YIELD PER DAY OF CALVING INTERVAL IN HOLSTEIN-FRIESIAN COWS

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Estimates of growth curve parameters are important for decision-making in breeding and management programs of dairy cattle. In Brazil little is known about the relationships among the growth curve parameters and efficiency of production in dairy cattle, especially for measures such as milk yield per day of calving interval. The objective of this study was to evaluate the relationships among weight at maturity (A) and maturing rate (k) and milk yield per day of calving interval of 629 lactation records of Holstein-Friesian cows raised on an intensive dairy cattle production system at Embrapa - Southeast Cattle Center, São Carlos, São Paulo state, Brazil. The von Bertalanffy non-linear growth model was utilized for obtaining the estimates of A and k. Data were analyzed utilizing the General Linear Models (GLM) procedure of the Statistical Analysis System (SAS) package, through a mathematical model including the fixed effects of year and season of birth, genetic group, calving order and type, drying-off reason and the linear and quadratic effects of lactation length, weight at maturity and maturing rate. There were observed significant effects of year and season of birth, calving order and type, drying-off reason and linear and quadratic effects of both lactation length and maturing rate. The regression equation of maturing rate on milk yield per day of calving interval ($Y = -15.36 + 140.12(k) - 614.05(k^2)$) indicated that the optimum maturing rate of Holstein-Friesian cows that maximizes milk yield per day of calving interval would be equal to 0.1141 kg/kg of live weight/month.



EVALUATION OF CARCASS CHARACTERISTICS USING ULTRASOUND ON NELLORE YEARLING BULLS IN PASTURE OF BRACHIARIA BRIZANTHA CV. MARANDU SUBMITTED TO DIFFERENT OFFERS OF FODDER

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The efficiency of animal growth is influenced by factors that modify the corporal composition. The objective of this study was to evaluate the characteristics of carcass measured by ultrasound (US) of Nelore steers in pasture of Brachiaria brizantha cv. Marandu, submitted to grazing intensities represented by four forage allowance (FA) (5, 10, 15 and 20% (kg DM/100 kg BW/day) in rotational stocking, during 4 grazing cycles. Sixty four animals with average initial weight of 238,50 kg with 15 months average were evaluated each approximately 70 days. The ribeye area (REA) and fat thickness (FAT) were evaluated by US in three periods. REA and FAT had showed linear growth in function of body weight ($p < 0,01$). In initial evaluation it was not observed significant difference between treatments for REA and FAT. Fifteen and 20% FA had presented greater means for REA (51,1 cm²) and FAT (0,9 mm) respectively ($p < 0,05$). In intermediate and final evaluations, treatments 15 and 20% were better comparing with others ($p < 0,01$). The trend of 15 and 20% FA to be superior in intermediate and final evaluation could be explained by the greater dry matter intake, better performance and consequently, greater corporal development of the animals.

ASSOCIATION POLYMORPHISM CSFM50 WITH WEIGHT GAIN IN HEREFORD BEEF CATTLE

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Molecular markers for production traits in cattle have been intensively investigated to use in marker-assisted selection program (MAS). In beef cattle, the microsatellite CSFM50 (located in the chromosome 2 (BTA2)) polymorphism had been correlated with weight gain from weaning to maturity. The Hereford herd corresponds to 4% of the total beef cattle herd in Rio Grande do Sul state. The objective of this study was to determine the influence of microsatellite CSFM50 polymorphism on birth weight (BW), weaning weight (WW) and yearling weight (YW) in a Hereford beef cattle herd. 270 animals, born in 2001, from a commercial herd in the south region of Rio Grande do Sul were genotyped. The DNA was extracted from white blood cells. Genotype identification was done by PCR followed by resolution in A.L.F. DNA Sequencer™. Genotype effects for BW, WW and YW were studied by a model with fixed effects of genotypes, sire, month of birth, sex, nutrition treatment by least squares method. Linear and quadratic effects of age of dam were included as covariable only for BW and WW. There were no influence of CSFM50 on BW and YW ($P > 0.1$), but significant effects were observed on WW ($P = 0.03$), with positive effects associated to 180/184 genotype. The analysis of the results suggest that 180bp allele can be associated with highest WW and 176bp can be associated with lower WW at this Hereford herd. Further investigation should be conducted to identify the QTL responsible for this variation.