

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

BARBOSA, P.F.; SOUSA, F.A. AND PAIOLI, F.S.

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.

