

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

MACROMINERALS REQUIREMENTS FOR CROSSBRED HOLSTEIN × GYR DAIRY HEIFERS

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The minerals nutrition are important to healthy maintenance and livestock production. In the sense, there are few date minerals requirement of Holstein × Gyr crossbred in literature. Therefore, the aim study was to evaluate the requirements macrominerals, calcium (Ca), phosphorus (P), magnesium (Mg), sodium (Na) and potassium (K). This study was conducted at the Federal University of Viçosa. Twenty-two crossbred heifers Holstein × Gyr with average body weight of 102 ± 3.4 kg of average age of 3.5 months were used. Four animals were assigned to the reference group being slaughtered at the beginning of the experiment to determine the initial empty body weight and the initial macrominerals content in the body. Eighteen heifers were distributed according to the completely randomized design, being: low gain (LG = 0.1 kg), medium gain (MG = 0.5 kg) and high gain (HG = 1.0 kg). The animals received a single diet during the experimental period of 84 days, which was formulated to meet the nutritional requirements of AG treatment animals. For the other LG and MG treatments, the amount of diet provided was adjusted according to the energy demand for weight gain of the BG and MG treatments, respectively. The roughage: concentrate ratio of 60:40 based on dry matter. The net minerals requirements of maintenance were considered as the intercept of the regression between mineral retained (MR) and intake mineral (IM) $MR = \beta_0 + \beta_1 \times MI$ [1]. The retention coefficient was considered as coefficient of inclination of equation [1] " β_1 ". The net requirements gain were estimated through the regression the mineral composition (Y) body in function of the empty body weight (EBW): $Y = \beta_0 \times EBW^{\beta_1}$ [2]. From the parameters of the equation [2], the net requirements were estimated deriving the equation [2], according to model: $Lg = BWG \times (\beta_0 \times \beta_1 \times EBW^{\beta_1 - 1})$. The net requirements of minerals for maintenance (mg EBW^{-1}) and retention coefficient (%) were: 59.68, 10.83, 1.21, 5.28, 1.8 and 58.16, 65.21, 7.23, 91.84 and 4.1% Ca, P, Mg, Na and K respectively. The equations for estimating the net requirements of minerals for gain were in (g day^{-1}): wherein EBW gain (EBWG): $Ca = EBWG \times (40.84 \times EBW^{0.2173})$; $P = EBWG \times (26.626 \times EBW^{-0.3573})$; $Mg = EBWG \times (0.369 \times EBW^{-0.0469})$; $K = EBWG \times (0.746 \times EBW^{0.0902})$; $Na = EBWG \times (0.75 \times EBW^{0.0585})$. The estimates obtained is this study can contribute to increasing data minerals requirement to crossbred Holstein × Gyr.

Keywords: gain, maintenance, minerals

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