

BODY WEIGHT GAIN IN GIR DAIRY CALVES SUBMITTED TO DIFFERENT NUTRITIONAL AND WELFARE TREATMENTS

GANHO DE PESO CORPORAL EM BEZERROS GIR LEITEIRO, SUBMETIDOS A DIFERENTES TRATAMENTOS ALIMENTARES E DE BEM-ESTAR ANIMAL

Rayanne Casabona Castanheira*¹, Márcia Ingrid de Paiva¹, Gabriella Freire Adão², Herbert Valério Filho², Edilane Aparecida da Silva², Márcia Saladini Vieira Salles³, Lenira El Faro Zadra¹

¹Instituto de Zootecnia, Sertãozinho, SP, Brazil;

²Empresa de Pesquisa Agropecuária de Minas Gerais, Uberaba, MG, Brazil;

³Instituto de Zootecnia, Ribeirão Preto, SP, Brazil.

*Corresponding author: rayanne.zootecnia@gmail.com

Abstract

This study evaluated different dietary (conventional and optimized feeding) and welfare (conventional and tactile stimulation/brushing) treatments on body weight gain in Gir dairy calves from birth to 140 days old. The experiment was carried out from October 2021 to April 2022 at the experimental farm of Empresa de Pesquisa Agropecuária de Minas Gerais, Uberaba, MG, with 40 calves born from IVF, in October (GN1) and December (GN2), distributed among the treatments by order of birth, in a 2 x 2 factorial arrangement (food management x animal welfare), with the following treatments: conventional feeding and conventional welfare management (MC+BC); conventional feeding and optimized welfare management (MC+BO); optimized feeding and conventional welfare management (MO+BC); and optimized feeding and optimized welfare management (MO+BO). From birth to 90 days of age, all calves were taken to the milking parlor in the morning and in the afternoon, and a teat/quarter was reserved for suckling for both feeding treatments. However, for optimized management (MO), the calves received an additional amount of daily milk (4 L) until 60 days and from day 61 to 90 day (2 L), offered in bottles. At 90 days of age, the calves were weaned. The calves of the optimized welfare (BO) treatment received tactile stimulation from birth to 60 days of age. Tactile stimulation consisted of massages performed by the handler on the animal's entire body, in the morning and in the afternoon, for 1 minute. The body weights of the animals were measured using a digital scale, at 0 (PN), 30, 60, 90, 120 and 140 days of age, always in the morning before offering milk or solid feed. Analysis of variance for birth weight (PN) and weight gain from 30 to 140 days of age (GP30, GP60, GP90, GP120 and GP140) were performed using linear models, including treatment, birth group (GN) class effects and the interaction between these effects. The estimated means were compared using the Tukey test at the 5% level. There was no significant interaction effect of all analyzed traits. For PN and GP30, there was no statistical difference of treatment and GN effects ($P > 0.05$). The estimated means for PN were 26.8 ± 0.89 Kg; 25.8 ± 0.85 Kg; 26.4 ± 0.89 Kg; 25.3 ± 0.93 Kg, for the treatments MC+BC, MC+BO, MO+BC and MO+BO, respectively. There was no effect of GN for the traits GP60, GP90, GP120 and GP140, but there was a treatment effect. The estimated averages for GP60 were 480 ± 0.03 g, 440 ± 0.03 g, 350 ± 0.03 g and 350 ± 0.03 g, while for GP90 they were 500 ± 0.03 g, 480 ± 0.03 g, 420 ± 0.03 g and 380 ± 0.03 g, for GP120 they were 530 ± 0.02 g, 520 ± 0.02 g, 480 ± 0.02 g and 420 ± 0.02 g, and for GP140 they were 540 ± 0.02 g, 530 ± 0.02 g, 520 ± 0.02 g and 430 ± 0.02 g, respectively, for the treatments MO + BO, MO + BC, MC + BC and MC + BO. The tactile stimulation did not influence the body weight gain of the calves, as already observed by other authors. Ease of handling and behavioral traits were not analyzed in the present study. The optimized feeding provided greater gains during the suckling period and after the calves were weaned. Since animals of the Gir breed have slow growth and the breeding phase is an important period for the milk production system, studies elucidating the consumption of breast milk, as well as the consumption of dry matter in this period are necessary to understand the potential of animal body development. We concluded that the optimized feeding management provided better body weight gains of the animals and suggest they be adopted by farmers.

Keywords:

Milk Production. Nutrition. Performance.

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