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IMMUNOLOGICAL PARAMETERS AND RESIDUAL FEED INTAKE OF NELLORE HEIFERS [1]

PARÂMETROS IMUNOLÓGICOS E CONSUMO ALIMENTAR RESIDUAL DE NOVILHAS NELORE

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The residual feed intake (RFI) is a parameter used in the identification of animals with respect to more efficient feed utilization. However, physiological basis are still unknown, however, the interrelationships between nutrition an immunity of the animal can contribute to the investigation of biological phenomena relevant to the RFI, since the defense system to oxidative effects caused by free radicals, is formed by acid polyunsaturated fatty acids, water soluble substances and enzymes, which derive mainly from the use of nutrients in the diet. The objective of this study was to evaluate the immunological parameters of Nellore heifers classified according to RFI. It were evaluated 176 heifers (born between 2008 and 2010), Traditional Nellore herd from Instituto de Zootecnia - Sertãozinho/SP, forming three groups of evaluation, submitted to test post weaning feed efficiency and classified into high (> mean + 0.5 SD, n= 55), medium (± 0.5 SD, n= 65) and low RFI (< mean – 0.5 SD, n= 56). The diet was formulated based on *Brachiaria decumbens* hay, corn, cottonseed meal and mineral mixture (45:55, forage: concentrate). The weight of the animals were performed in fasting blood samples collected by venipuncture vein, using tubes of 10 ml type *vacuntainer* with EDTA anticoagulant. In the clinical laboratory, we measured the values of leukocytes (LEU); Targeted (SEG) and lymphocytes (LIN). The experimental design was a randomized block design using PROC GLM of SAS, considering the fixed effects of year and the age covariate in the statistical model and the averages compared by Tukey test at 5% probability. There was no significant difference (P>0,005) between variables leukocyte (LEU, SEG and LIN) and class of RFI (table 1), indicating that there is no distinction between animals more efficient (low RFI) and less efficient (high RFI), for inflammatory and immune responses to oxidative effects. Therefore the variables measured leukocytes not explain the differences between Nellore heifers classified according to the RFI.

Table 1. Immunological parameters in the different class of RFI of Nellore heifers

Variables	Class of RFI			*P*
	Low	Medium	High	
Nº of animals	56	65	55	---
LEU	14.15 ± 0.34 a	13.63 ± 0.32 a	14.29 ± 0.35 a	0.34
SEG	30.75 ± 0.71 a	28.82 ± 0.66 a	30.55 ± 0.74 a	0.15
LIN	63.71 ± 0.74 a	65.46 ± 0.69 a	63.75 ± 0.78 a	0.14

Means ± standard error; *P*= significance level; LEU= Leukocytes; SEG= Targeted; LIN= Lymphocytes
Means followed by same letter in rows do not differ significantly by Tukey-Kramer a 5% de probability

Key words: blood, leukocytes, efficiency, cattle