III Encontro Científico de Produção Animal Sustentável
05 de outubro de 2012
Instituto de Zootecnia, Nova Odessa, SP
ISSN 1981-4100 (On-line)

TICK RESISTANCE AND HEAT TOLERANCE IN CATTLE. I. HAIR LENGTH AND COAT THICKNESS[1]

RESISTÊNCIA AO CARRAPATO E TOLERÂNCIA AO CALOR EM BOVINOS. I. COMPRIMENTO E ESPESSURA DO PELAME

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To be heat adapted and *Rhipicephalus (Boophilus) microplus* tick resistant are important characteristics for cattle in the Brazilian sustainable livestock, because this ectoparasite causes serious harm to the health of susceptible animals and, in the tropics, not heat adapted cattle have poor performance. Besides, the control of this tick is increasingly difficult due to drug resistance. Relationship between tick infestation and heat tolerance traits, as the hair length and coat thickness, are important because animals with long hair are easily identifiable, helping in the disposal of the least adapted cattle. In order to infer the relationship between tick infestation and fur characteristics, 6 Nellore and 4 Black and White Holstein steers, with about seven months old, underwent an artificial infestation (with 10,000 larvae on the Holstein, and 20,000 larvae on the Nellore) in 16/April/2011. In days 20, 23 and 24 post-infestation, the bigger 10 females ticks found throughout the body were weighed and their egg mass weighed 14 days later. Hair length, HL (collected with pliers specially adapted for this purpose, and measured the 10 longest hair) and the coat thickness, CT (measured with a metal ruler inserted perpendicular to the skin) were evaluated in the middle of the shoulder on 11/April (5 days before artificial tick infestation) and on 12/May (26 days after artificial tick infestation). The experimental design was a non-probability sample restricted to the 10 available animals. Data of HL and CT were analyzed using General linear models of the SPSS® statistical package (version 12.0) using breed and sampling day as independent variables. There were significant differences between the measurements obtained on April and May, respectively: HL Nellore: 9.53 ± 1.80 mm and 14.55 ± 1.77 mm; HL Holstein: 23.40 ± 9.29 and 34.05 ± 5.50 mm, $P < 0.001$; CT Nellore: 2.83 ± 0.41 mm and 3.16 ± 0.98 mm; CT Holstein: 5.00 ± 1.63 mm and 13.75 ± 4.78 mm, $P < 0.05$. High and significant correlations between HL and CT ($r = 0.873$ and 0.965, for Apr and May, respectively, $P < 0.01$, Pearson correlation), and a significant and positive correlation between the HL (May) and egg mass weight ($r = 0.634$, $P < 0.05$) were observed. It is concluded that the hair of both cattle, Holstein and Nellore, were still growing on April when they were collected for the first time, and cattle with longest hair had ticks with the biggest oviposition.

Key words: Holstein, Nellore, *Rhipicephalus microplus*.