

FILIFORM PAPILLA OF EUROPEAN AND ZEBU CATTLE'S TONGUE

PAPILA FILIFORME DA LÍNGUA DE BOVINOS TAURINOS E ZEBUÍNOS

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The tongue is the principal tool to animals do self-cleaning, mainly for ruminants. Grooming behavior is responsible for cleaning ectoparasites in cattle, especially ticks. The cattle tick *Rhipicephalus microplus* is one of the most harmful, resulting in great damages to the Brazilian livestock. It is well known that Zebu breeds are resistant and European breeds are susceptible to this tick. The importance of self-grooming in reducing the cattle tick infestation is well-known, but not the role of the tongue morphology in the process. The tongue has four types of papillae being the filiform papilla the responsible for the self-cleaning. The aim of this work was to know and to compare the filiform papilla from 8 Nelore (Zebu), and 8 Holstein and 2 Brown-Swiss (European) cattle. A biopsy was taken off from 18 steers' tongues (about two-year-olds), through an 8 mm diameter punch, in the central anterior third part, at a distance of 3 cm from the tip. The animals were previously anaesthetized with 2% xylazine hydrochloride, and lidocaine hydrochloride 2.0 g. After the tissue removal, the local lesions received an ointment of triamcinolone acetonide, 1.0 mg/g. The biopsies were submitted to fixation and dehydration (required for studies in Scanning Electron Microscope) at the NAP/MEPA-ESALQ-USP Laboratory. The papillae measuring were performed with the aid of a measurement tool between two points with the Software Scanning Electron Microscope Zeiss LEO 435 VP. We also calculated the number of filiform papillae per cm², and performed a statistical analysis using the SPSSP® (VERSION 12.0) in a completely randomized design. The oneway analysis of variance was done to detect significant breed (European x Zebu) differences in the mean length and width base of the filiform papillae, the distances between bases and apices of the papilla and the number of filiform papillae per cm². The results showed that Nelore breed has longer papillae, and has more papillae per cm² than the European cattle, so the spacements between the papillae are smaller, but the base width is similar (Table 1). This morphology should give greater roughness to the Nelore tongue and consequently more effectiveness in taking off the tick larva during the self-cleaning, and could be one of the explanations for the Zebu tick resistance.

Table 1. Morphology of filiform papilla from European and Nelore cattle. Means (standard error) and P values for length, base width, spacing between bases, spacing between apices and number of papillae per cm²

Breed	Length (mm)	Base width (mm)	Spacing between bases (mm)	Spacing between apices (mm)	Number of papillae per cm ²
Nelore	2.275 (0.029)	0.625 (0.011)	0.457 (0.014)	0.974 (0.025)	25.22 (1.92)
European	1.789 (0.027)	0.620 (0.009)	0.652 (0.016)	1.326 (0.027)	20.90 (0.74)
P>F	<0.0001	0.722	<0.0001	<0.0001	<0.05

Keywords: filiform papilla, tick, tongue.

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