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CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

IDENTIFICATION OF LACTIC ACID BACTERIA IN ELEPHANT GRASS FRESH PLANT AND SILAGE (*Pennisetum purpureum* Schum)

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Tropical grass silages are characterized by high buffering power and low populations of lactic acid bacteria (LAB), which results in poorly conserved silages. The use of LAB strains as microbial inoculants, specific to the type of forage ensiled can improve the fermentative process. The aim of this work was to identify LAB in the elephant grass cv. Napier fresh plant and in its silage stored for different periods. A conventional chopper was used to chop the grass with its particle size regulated to 10 mm. The ensilage was conducted in experimental silos of PVC with a density of 636 kg m^{-3}. Silos were opened after 10, 30 and 45 days of storage, when samples were taken for isolation of LAB strains. A sample of the fresh grass was analyzed as well. Sequential 10-fold dilutions were prepared and 0.1 mL aliquots were spread on MRS agar medium and incubated at 37°C for 48 hours. Colonies were enumerated and characterized by their morphology. The isolates were purified in MRS agar and their purity was confirmed by Gram staining. According to their protein profile the isolates were identified and grouped by Maldi-Tof. The enumeration and identification of the morphotypes enabled the estimation of the population of each species during the storage periods. No LAB species was identified in the fresh Elephant grass. A total of 65 strains of LAB were isolated from the elephant grass silage and among the species identified were *Lactobacillus sakei*, *L. plantarum*, *L. brevis and Pediococcus pentosaceus*. After 10 days of storage the species *L. sakei*, *L. plantarum* e *P. pentosaceus* were found in a population of 7.25; 5.47 and 5.30 log CFU g^{-1} silage, respectively. *L. plantarum* was the only species found in the three storage periods and its population increased in the silage stored for 30 days (7.25 log CFU g^{-1} silage), remaining constant up to 45 days (7.2 log CFU g^{-1} silage). With 45 days of storage, *L. brevis* strains were also identified, present in a population of 6.44 log CFU g^{-1} silage. In the fresh elephant grass, the LAB population was below the detection limit (<2 log CFU g^{-1}). During ensiling of elephant grass it was observed a succession of four LAB species. *Lactobacillus plantarum* was the dominant species found with the highest population after 30 days of storage.

Keywords: Maldi-Tof, morphotypes, populations of lactic acid bacteria, tropical grass

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