

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

LACTOBACILLUS BUCHNERI DOES NOT IMPROVE AEROBIC STABILITY OF CORN SILAGE STORED FOR A SHORT PERIOD

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Corn silage is an important part of the diet of dairy cows, but during the feed-out phase it is liable to aerobic deterioration by spoilage microorganisms. Thus, our objective was to evaluate the effect of *Lactobacillus buchneri* on the aerobic stability of corn silages stored for 30 d. The whole-crop corn (hybrid Impacto Víptera; Syngenta[®]) was mechanically harvested at approximately 35% dry matter and with mean particle size of approximately 10 mm. The chopped corn was then untreated (with no inoculant) or treated with *L. buchneri* CNCM I-4323 at a concentration of 1×10^5 colony forming units (cfu) g⁻¹ (Lallemand Animal Nutrition[®]). Polyvinyl chloride tubes with 5 L capacity were used as mini-silos with three replicates per treatment, which remained closed for 30 d. To determine aerobic stability, a silage sample (approximately 1.5 kg) from each mini-silo was placed in a plastic bucket of 5 L capacity and kept at ambient temperature for 10 d. Data loggers were used to measure temperature of silage and ambient every half hour. The breakdown of aerobic stability was determined when the silage temperature increased 2°C or more relative to the ambient temperature. The sum of accumulated daily temperatures was calculated as the sum of the difference between the silage and ambient temperatures after 10 d (ADITE 10) of aerobic exposure. The heating rate was calculated as the maximum recorded temperature divided by the time required reaching the maximum temperature (TNMT). The experiment was conducted under a completely randomized design, and means were compared using the PDIFF option of the LSMEANS statement of SAS at $P < 0.05$. The aerobic stability of corn silage was unaffected ($P = 0.275$) by inoculation (untreated = 25.0 h; inoculated = 35.7 h). Similarly, the TNMT (untreated = 40.7 h; inoculated = 48.0 h) and heating rate (untreated = 0.249 °C h⁻¹; inoculated = 0.341 °C h⁻¹) of corn silage was unaffected by inoculation ($P \geq 0.25$). Inoculation tended ($P = 0.065$) to reduce aerobic deterioration (ADITE 10) of corn silage (untreated = 1495 °C; inoculated = 896 °C). *Lactobacillus buchneri* does not improve aerobic stability of corn silages stored for a short period, but it tended to reduce aerobic deterioration.

Keywords: aerobic deterioration, heterofermentative inoculant, silage inoculation

Acknowledgments: The authors thanks the Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) and Fundação de Amparo à Pesquisa do Estado de São Paulo (FAPESP) for the financial support.

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