

Effect of bacteria inoculants on corn silage quality

ABSTRACT

The objective of this study was to evaluate the effects of bacterial inoculants on fermentation rate and quality of corn silage. There are five lactic acid bacteria (LAB) isolated from corn silage; *Lactobacillus buchneri*, *L. hilgardii*, *L. kefir*, *L. oris* and *L. rhamnosus* which were applied at $\sim 10^7$ - 10^8 cfu/g of fresh corn forage. The inoculated chopped corn forage was stored in approximately 12 kg-capacity polyester containers for 14, 21 and 28 days. The temperature, pH, nutrient composition and aerobic stability was determined. Inoculation LAB improved the fermentation characteristics, increased nutrient digestibility and improved aerobic stability of corn silages. The bacterial inoculants did not significantly ($P > 0.05$) decreased pH values of the corn silages. Addition of bacterial inoculants to corn silages increased its crude protein content significantly ($P < 0.05$) with time. However, adding bacterial inoculants also significantly ($P < 0.05$) decreased the neutral detergent fiber content with time. After 21 days, the process of fermentation appeared to be complete for all treatments. Among the five lactic acid bacteria used, *L. buchneri* was identified as the best inoculants for ensiling of corn forage.

Keyword: Inoculants, Corn forage, Fermentation, Lactic acid bacteria, Silage