PENGARUH BAKTERI ASAM LAKTAT HOMO DAN HETERO FERMENTATIF TERHADAP KUALITAS KIMIA, FERMENTASI, DAN FISIK SILASE RUMPUT BLEMBEM (*Ischaemum* sp.)

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan bakteri asam laktat (BAL) homofermentatif (*Lactobacillus plantarum* strain FNCC 020) dan heterofermenttaif (*Lactobacillus fermentum* strain BN21*)* terhadap komposisi kimia, karakteristik fermentasi, dan penampakan fisik pada silase berbasis rumput blembem (*Ischaemum* sp.). Rumput blembem dipanen pada umur 45 hari kemudian dikeringkan selama 1 hari (bahan kering 39,25%). Rumput dicacah ukuran 3 - 5 cm kemudian difermentasi dalam *mini* silo (5 kg) selama 28 hari dengan 4 ulangan menggunakan inokulum berbeda, yaitu tanpa inokulum (CON), *L. plantarum* strain FNCC020 1 x 10^5 cfu/g (LP), dan *L. fermentum* strain BN21 1 x 10^5 cfu/g (LF). Hasil komposisi kimia menunjukan bahwa silase LP dan LF menghasilkan kandungan bahan kering (P=0,010; 39,5% dan 41,5% vs. 37,3%) dan bahan organik (P=0,001; 96,6% dan 96,1% vs. 94,1%) yang tinggi dibandingkan dengan silase CON. Sementara itu, penambahan inokulum tidak berpengaruh terhadap variabel kimia lainnya. Pada karakteristik fermentasi, penambahan inokulum juga tidak berpengaruh terhadap pH, amonia, dan asam laktat. Secara umum, penampakan fisik baik warna, aroma, dan tekstur dari ketiga silase tersebut berada dalam kisaran normal. Penelitian ini menyimpulkan bahwa penambahan BAL baik homofermentatif maupun heterofermentatif tidak berpengaruh secara umum terhadap komposisi kimia, karakteristik fermentasi, dan penampakan fisik dari silase berbasis rumput blembem. Berdasarkan penelitian yang dilakukan, penambahan inokulum tidak direkomendasikan dalam pembuatan silase rumput blembem.

Kata kunci: *Ischaemum* sp., *Lactobacillus fermentum, Lactobacillus plantarum,* silase

EFFECT OF HOMO AND HETERO FERMENTATIVE LACTIC ACID BACTERIA ON THE CHEMICAL, FERMENTATION, AND PHYSICAL QUALITY OF BLEMBEM GRASS SILAGE (*Ischaemum* sp.)

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ABSTRACT

This study aimed to determine the effect of the use of homofermentative lactic acid bacteria (LAB) (*Lactobacillus plantarum* strain FNCC 020) and heterofermentative (*Lactobacillus fermentum* strain BN21) on the chemical composition, fermentation characteristics, and physical appearance of silage based on blembem grass (*Ischaemum* sp.). Blembem grass was harvested at the age of 45 days then dried for 1 day (dry matter 39.25%). The grass was chopped to size 3 - 5 cm then fermented on mini silo (5 kg) for 28 days with 4 replications using different inoculum, namely without inoculum (CON), *L. plantarum* strain FNCC 020 1 x 10^5 cfu/g (LP), and *L. fermentum* strain BN21 1 x 10^5 cfu/g (LF). The chemical composition results showed that LP and LF silage produced high dry matter content (P=0.010 39.5% and 41.5% vs. 37.3%) and organic matter (P=0.001; 96.6% and 96.1% vs. 94.1%) compared to CON silage. Meanwhile, the addition of inoculum did not affect other chemical variables. In terms of fermentation characteristics, the addition of inoculum also did not affect pH, ammonia, and lactic acid. In general, the physical appearance of the colour, aroma, and texture of the three silages were within the normal range. This study concluded that the addition of LAB, both homofermentative and heterofermentative, did not generally affect the chemical composition, fermentation characteristics, and physical appearance of silage using blembem grass. Based on the research conducted, the addition of inoculum is not recommended in making blembem grass silage.

Keywords: *Ischaemum* sp., *Lactobacillus fermentum, Lactobacillus plantarum*, silage