

## **PENGARUH INOKULASI BAKTERI *Lactobacillus fermentum* TERHADAP KUALITAS FERMENTASI HAYLAGE RUMPUT BLEMBEM (*Ischaemum sp.*)**

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### **INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan bakteri asam laktat heterofermentatif (*L. fermentum*) strain BN21 terhadap kualitas kimia, karakteristik fermentasi, dan fisik *haylage* rumput blembem (*Ischaemum sp.*). Rumput blembem dipanen pada umur 45 hari, kemudian dikeringkan di dalam rumah dome selama 5 hari hingga kandungan airnya mencapai 40%, kemudian dicacah dengan ukuran 3 - 5 cm sebanyak 40 kg. Seluruh rumput blembem yang telah dicacah kemudian diberi penambahan air sebanyak 8 kg untuk mencapai kandungan air sekitar 50%. Rumput blembem yang telah diberi penambahan air dibagi menjadi dua perlakuan, yaitu kontrol (CTR) dan *L. fermentum* pada  $1 \times 10^5$  cfu/g (LFE). *Haylage* dengan masing-masing perlakuan menggunakan 4 ulangan, dimana masing-masing ulangan ditampung dalam mini-silo berupa ember sebanyak 5 kg dan difermentasi selama 28 hari. Setelah silo dibuka, *haylage* disampling sebanyak 200 g untuk analisis laboratorium. Hasil dari penelitian ini menunjukkan bahwa perlakuan LFE menghasilkan kandungan bahan organik ( $P < 0,05$ ; 95,4% vs. 94,6%) dan *acid detergent fiber* ( $P < 0,05$ ; 40,9% vs. 38,3%) lebih rendah daripada perlakuan CTR pada *haylage*. Sementara itu komposisi kimia lainnya tidak dipengaruhi oleh penambahan inokulan. Pada karakteristik fermentasi, penambahan inokulan tidak berpengaruh pada pH, amonia, dan asam laktat dari *haylage*. Pada penampakan fisik, penambahan *L. fermentum* tidak dapat meningkatkan kualitas fisik pada *haylage*. Pada penelitian ini menyimpulkan bahwa penggunaan *L. fermentum* belum mampu mengurangi kehilangan nutrisi, belum mampu meningkatkan kualitas kimia fermentasi, dan belum mampu meningkatkan kualitas fisik *haylage*.

**Kata kunci:** Fermentasi, *Haylage*, *Ischaemum sp.*, *L. fermentum*

## THE EFFECT OF *Lactobacillus fermentum* BACTERIA INOCULATION ON THE FERMENTATION QUALITY OF HAYLAGE OF BLEMBEM GRASS (*Ischaemum* sp.)

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### ABSTRACT

This research aims to determine the effect of using heterofermentative (*L. fermentum*) strain BN21 on the chemical compositions, fermentation characteristics and physical properties of haylage of blembem grass (*Ischaemum* sp.). Blembem grass was harvested at the age of 45 days, dried in the dome for 5 days, and then chopped into 3 - 5 cm pieces for 40 kg. All chopped grass was applied with the additional 8 kg of water to reach a water content of around 50%. Blembem grass was divided into two treatments, consisting of control (CTR) and *L. fermentum* at  $1 \times 10^5$  cfu/g (LFE). Haylage with each treatment was used 4 replications, where each replication was accommodated in a mini-silo in the form of a 5 kg bucket and fermented for 28 days. After the silo was opened, 200 g of haylage was sampled for laboratory analysis. The results of this study showed that LFE treatment produced lower organic matter content ( $P < 0.05$ ; 95.4% vs. 94.6%) and acid detergent fiber ( $P < 0.05$ ; 40.9% vs. 38.3%) than CTR treatment in haylage. Meanwhile, other chemical compositions were not affected by addition of inoculant in terms of fermentation characteristics, the addition of inoculant has no effect on the pH, ammonia, and lactic acid of haylage. In physical appearance, the addition of *L. fermentum* was able to reduce the texture of haylage slimy. This research concluded that, the use of *L. fermentum* as an additive was not able to improve the chemical and fermentation quality, but was not able to improve the texture of haylage.

**Keywords:** Fermentation, Haylage, *Ischaemum* sp., *L. fermentum*