PENGARUH PENAMBAHAN BAKTERI ASAM LAKTAT *Lactobacillus fermentum* TERHADAP KUALITAS DAN KANDUNGAN NUTRIEN *FERMENTED COMPLETE FEED*

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan bakteri asam laktat *Lactobacillus fermentum* terhadap kualitas fermentasi dan kandungan nutrien pakan komplit fermentasi. Penelitian ini dilakukan dengan membuat pakan komplit yang difermentasi dalam tong fermentor selama 21 hari. Proporsi hijauan dan konsentrat yang digunakan 65:35 dengan kadar air pakan komplit dibuat 50%. Terdapat dua perlakuan yaitu pakan komplit yang difermentasi tanpa penambahan inokulum dan penambahan inokulum *Lactobacillus fermentum* dengan konsentrasi 10^6 CFU/kg. Setiap perlakuan direplikasi sebanyak empat sehingga terdapat delapan sampel percobaan. Parameter penelitian yang diamati meliputi warna, aroma, tekstur, kontaminan jamur, nilai pH, nilai angka asam, kadar asam laktat, kadar amonia (NH_3), kadar glukosa, bahan kering (BK), bahan organik (BO), serat kasar (SK), protein kasar (PK), lemak kasar (LK), dan bobot yang hilang selama fermentasi. Data yang diperoleh dianalisis dengan analisis *independent sample t-test* dalam program SPSS 25. Hasil penelitian menunjukkan pakan komplit fermentasi memiliki karakteristik yang baik, antara lain berwarna hijau kecoklatan, beraroma asam, tekstur padat, dan tidak ada kontaminan jamur pada kedua perlakuan. Pakan komplit fermentasi dengan penambahan inokulum *Lactobacillus fermentum* memiliki kandungan serat kasar, kadar glukosa, dan ammonia yang lebih rendah ($P<0,05$) dibandingkan pakan komplit fermentasi tanpa inokulum, serta kadar asam laktat dan angka asam yang lebih tinggi ($P<0,05$). Penambahan inokulum *Lactobacillus fermentum* juga menyebabkan kehilangan nutrien BK, BO, dan PK lebih sedikit ($P<0,01$) dibandingkan perlakuan non inokulum. Penambahan inokulum *Lactobacillus fermentum* tidak memberikan pengaruh terhadap kehilangan SK dan LK total. Penambahan inokulum *Lactobacillus fermentum* pada fermentasi pakan komplit meningkatkan kualitas dan mengurangi kehilangan nutrien selama fermentasi.

Kata kunci : Pakan, Bakteri, *Lactobacillus fermentum*, Inokulum, Kualitas.

EFFECT OF ADDITION LACTIC ACID BACTERIA *Lactobacillus fermentum* ON THE QUALITY AND NUTRIENT CONTAINTMENT OF FERMENTED COMPLETE FEED

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ABSTRACT

This study aims to determine the effect of the addition of lactic acid bacteria *Lactobacillus fermentum* on fermentation quality and nutrient content of fermented complete feed. This study was conducted by making fermented complete feed in a fermentor for 21 days. The proportion of forage and concentrate used was 65:35 with moisture content was made 50%. There were two treatments in this study namely complete feed fermented without inoculation and inoculated with *Lactobacillus fermentum* inoculum at concentration of 10^6 CFU/kg. Each treatment was replicated by four so that there were eight experimental samples. The research parameters observed included color, aroma, texture, fungal contaminants, pH value, acid number value, lactic acid content, ammonia content (NH_3), glucose content, dry matter (DM), organic matter (OM), crude fiber (CF), crude protein (CP), extract ether (EE), and weight loss during fermentation. The data obtained were analyzed by independent sample t-test analysis in the SPSS 25 program. The results showed that fermented complete feed has good silage characteristics, including brownish green color, sour aroma, dense texture, and no fungal contaminants in both treatments. Fermented complete feed with the addition of *Lactobacillus fermentum* inoculum had crude fiber content, glucose content, and ammonia lower than ($P<0,05$) fermented complete feed without inoculum, as well as higher lactic acid content and acid number ($P<0.05$). The addition of *Lactobacillus fermentum* inoculum also caused less loss of DM, OM, and CP nutrients ($P<0,01$) compared to the non inoculum treatment. The addition of Lactobacillus fermentum inoculum had no effect on total CF and EE losses. The addition of *Lactobacillus fermentum* inoculum in complete feed fermentation improves quality and reduces nutrient losses during fermentation.

Keywords : Feed, Bacteria, *Lactobacillus fermentum*, Inoculum, Quality.