

PENGARUH PENGGUNAAN PLASTIK *VACUUM* DAN *NON-VACUUM* SEBAGAI FERMENTOR TERHADAP KUALITAS PAKAN KOMPLIT FERMENTASI

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh kondisi *vacuum* dan *non-vacuum* pada fermentor plastik terhadap kualitas pakan komplit fermentasi. Percobaan dilakukan dengan dua perlakuan yaitu fermentor *vacuum* dan *non-vacuum*, yang masing-masing diulang empat kali. Setiap fermentor diisi dengan sekitar 20 kg pakan komplit dengan kadar air 60%. *Ensilase* pakan komplit dilakukan selama 21 hari. Perlakuan *vacuum* diperoleh dengan menghisap udara menggunakan *vacuum cleaner* hingga udara dalam fermentor plastik habis. Berat total setiap fermentor yang berisi pakan komplit ditimbang, dan sampel diambil sebelum dan sesudah fermentasi untuk analisis lebih lanjut. Data dianalisis dengan uji Independent Sample T-Test menggunakan program SPSS, Berdasarkan hasil penelitian, perlakuan *vacuum* dan *non-vacuum* tidak berpengaruh signifikan terhadap kandungan nutrisi, kehilangan nutrisi, dan karakteristik kualitas kimia. Kandungan nutrisi pakan komplit fermentasi, baik sebelum maupun sesudah fermentasi dalam fermentor *vacuum* dan *non-vacuum*, tidak menunjukkan perbedaan signifikan pada kandungan bahan kering (BK), bahan organik (BO), protein kasar (PK), lemak kasar (LK), dan serat kasar (SK). Kandungan nutrisi pakan komplit fermentasi yang dihasilkan BK 43,91%, BO 86,78%, PK 13,68%, LK 3,32%, dan SK 25,19%. Kehilangan nutrisi selama fermentasi juga tidak berbeda signifikan antara perlakuan *vacuum* dan *non-vacuum* pada parameter yang sama. Karakteristik fermentasi, termasuk angka asam, asam laktat, amonia, gula pereduksi, dan pH, juga tidak menunjukkan perbedaan signifikan. Akan tetapi, kandungan amonia dalam pakan komplit fermentasi dengan perlakuan *vacuum* cenderung lebih rendah dibandingkan dengan *non-vacuum* ($P=0,08$). Kesimpulan penelitian ini adalah bahwa penggunaan fermentor plastik *vacuum* dan *non-vacuum* dapat diterapkan karena menghasilkan kandungan nutrisi, kehilangan nutrisi, dan karakteristik fermentasi pakan komplit yang serupa.

Kata kunci : Pakan komplit fermentasi, Fermentor, kualitas kimia, karakteristik, anaerob, dan asam laktat

EFFECT OF USING VACUUM AND NON-VACUUM PLASTIC AS FERMENTATION FERMENTERS ON THE QUALITY OF FERMENTED COMPLETE FEED

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ABSTRACT

This study aims to determine the effect of vacuum and non-vacuum conditions in plastic fermenters on the quality of fermented complete feed. The experiment was conducted in two treatments, i.e. vacuum and non-vacuum, were each replicated four times. Each fermenter was filled with approximately 20 kg of complete feed with a 60% moisture content. Silage of the complete feed was conducted over 21 days. The vacuum treatment was achieved by extracting air using a vacuum cleaner until the air in the plastic fermenter was depleted. The total weight of each fermenter containing the complete feed was measured, and data were analyzed with Independent Sample T-Test analysis performed using SPSS software. Based on the research results, vacuum and non-vacuum treatments did not significantly affect nutrient content, nutrient loss, or chemical quality characteristics. The nutrient content of the fermented complete feed, both before and after fermentation in vacuum and non-vacuum fermenters, showed no significant differences in dry matter (DM), organic matter (OM), crude protein (CP), crude fat (CF), and crude fiber (CF). The nutrient content of the resulting fermented complete feed was 43,91% DM, 86,78%, OM 13,68% CP, 3,32% crude fat, and 25,19% crude fiber. Nutrient losses during fermentation also did not differ significantly between vacuum and non-vacuum treatments for the same parameters. Fermentation characteristics, including acid number, lactic acid, ammonia, reducing sugars, and pH, also showed no significant differences. However, the ammonia content in the fermented complete feed with the vacuum treatment tended to be lower compared to the non-vacuum treatment ($P=0,08$). The conclusion of this study is that the use of vacuum and non-vacuum plastic fermenters can be applied, as they produce similar nutrient content, nutrient loss, and fermentation characteristics in complete feed.

Key words: Fermented complete feed, fermenter, chemical quality, characteristics, anaerobic, and lactic acid