PENGARUH PENAMBAHAN *MULTI-PURPOSE MICROBES* PADA PAKAN KOMPLIT FERMENTASI BERBASIS SILASE SORGUM (*Sorghum bicolor L. Moench*) TERHADAP KOMPOSISI KIMIA DAN KARAKTERISTIK FERMENTASI

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan aditif mikroba *multi-purpose* terhadap komposisi kimia dan karakteristik fermentasi dari pakan komplit fermentasi berbasis silase sorgum. Sebelumnya silase sorgum diperoleh dari PT Sawojajar, Ngawi dan telah diensilase selama 6 bulan. Mikroba *multi-purpose* yang digunakan merupakan produk komersil yang mengandung bakteri asam laktat, *yeast,* dan *bacillus* (Saus Burger Pakan; SBP). Pakan komplit terdiri dari 67,7% silase sorghum, 14,3% onggok, 8,1% bungkil kedelai, 7,3% pollard, dan 2,6% DDGS. Pakan komplit telah diformulasikan iso-nitrogen dan iso-energi (protein kasar 12% dan *total digestible nutrient* 65%). Pakan komplit difermentasi dalam mini silo kapasitas 20 kg selama 14 hari dengan perlakukan yang berbeda, yaitu tanpa penambahan *multi-purpose microbes* (CON) dan penambahan mikroba *multi-purpose* (TRT) sebanyak 0,5%. Setiap perlakuan menggunakan 4 silo sebagai replikasi. Hasil penelitian menujukkan bahwa perlakuan TRT menghasilkan kandungan bahan kering ($p=0,002$; 44,3% vs 47,1%) dan lemak kasar ($p<0,001$; 0,70% vs. 1,88%) yang lebih rendah namun kandungan protein kasar (0,014; 12,2% vs 10,9%) yang lebih tinggi dibandingkan dengan perlakuan CON. Sementara itu, kandungan bahan organik*, neutral detergent fiber*, *acid detergent fiber*, dan *non fiber carbohydrate* tidak dipengaruhi oleh penambahan mikroba *multi-purpose.* Karakeristik ferementasi, perlakuan TRT menghasilkan pH ($p=0,045$; 4,22 vs 4,29) yang lebih rendah namun kandungan ammonia ($p=0,044$; 18,2 vs 13,1) dan asam laktat ($p<0,001$; 2,70 vs 1,07) yang lebih tinggi dibandingkan dengan perlakuan CON. Perlakuan TRT menghasilkan aroma yang lebih asam dan tekstur yang lebih kering dibandingkan dengan perlakuan CON secara numerik. Penelitian menyimpulkan bahwa penambahan mikroba *multi-purpose* dapat meningkatkan kualitas fermentasi dan fisik pakan komplit fermentasi berbasis silase sorgum.

Kata kunci : Silase sorgum, pakan komplit fermentasi*, multi-purpose microbes.*

THE EFFECT OF ADDING MULTI-PURPOSE MICROBES IN COMPLETE FEED FERMENTATION BASED ON SORGHUM SILAGE (Sorghum bicolor L. Moench) ON CHEMICAL COMPOSITION AND FERMENTATION CHARACTERISTICS

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ABSTRACT

This study was aimed to determine the effect of the addition of multi-purpose microbial additives on the chemical composition and fermentation characteristics of sorghum silage-based fermented complete feed. Previously, sorghum silage was obtained from PT Sawojajar, Ngawi and had been refrigerated for 6 months. The multi-purpose microbes used are commercial products that contain lactic acid bacteria, yeast, and bacillus (Feed Burger Sauce; SBP). The complete feed consisted of 67.7% sorghum silage, 14.3% sorghum, 8.1% soybean meal, 7.3% pollard, and 2.6% DDGS. Complete feed has been formulated with iso-nitrogen and iso-energy (crude protein 12% and total digestible nutrients 65%). The complete feed is fermented in a mini silo with a capacity of 20 kg for 14 days with different treatments, namely without the addition of multi-purpose microbes (CON) and the addition of multi-purpose microbes (TRT) as much as 0.5%. Each treatment uses 4 silos as replication. The results showed that the TRT treatment resulted in lower dry matter content ($p=0.002$; 44.3% vs. 47.1%) and crude fat ($p<0.001$; 0.70% vs. 1.88%) but higher crude protein content (0.014; 12.2% vs. 10.9%) compared to the CON treatment. Meanwhile, the content of organic matter, neutral detergent fiber, acid detergent fiber, and non-fiber carbohydrate is not affected by the addition of multi-purpose microbes. In ferementation characteristics, TRT treatment resulted in a lower pH ($p=0.045$; 4.22 vs 4.29) but higher content of ammonia ($p=0.044$; 18.2 vs 13.1) and lactic acid ($p<0.001$; 2.70 vs 1.07) compared to the CON treatment. TRT treatment results in a more acidic aroma and a drier texture compared to the CON treatment numerically. The study concluded that the addition of multi-purpose microbes can improve the fermentation quality and physical quality of sorghum-based silage-based fermented complete feed.

Keyword : Sorghum silage, complete fermented feed, multi-purpose microbes