

**PENGARUH VARIETAS SORGUM (*Sorghum Bicolor* (L.) Moench)
LEVEL PROTEIN, DAN LAMA PEMERAMAN *COMPLETE FEED*
FERMENTASI TERHADAP KECERNAAN
SECARA *IN VITRO***

INTISARI

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Penelitian ini bertujuan untuk mengetahui pengaruh varietas, level protein, dan lama pemeraman hijauan sorgum pada pembuatan *complete feed* (pakan lengkap) fermentasi terhadap komposisi kimia, kecernaan, dan karakteristik fermentasi rumen secara *in vitro*. Dengan rancangan acak lengkap pola faktorial 2 x 2 x 2, dua varietas hijauan sorgum yaitu BMR dan Super-2 digunakan untuk membuat pakan lengkap dengan 2 level protein yang berbeda yaitu 8 dan 11%, kemudian difermentasi dengan lama pemeraman yang berbeda yaitu 3 dan 7 hari. Masing-masing perlakuan dengan ulangan 3 kali. Sampel *complete feed* fermentasi dianalisis komposisi kimia meliputi kandungan bahan kering (BK), bahan organik (BO), serat kasar (SK), dan protein kasar (PK), serta kecernaan meliputi bahan kering (KcBK), bahan organik (KcBO), dan protein kasar (KcPK), dan karakteristik fermentasi rumen meliputi derajat keasaman (pH) rumen, produksi *volatyl fatty acid* (VFA), amonia (NH₃), dan sintesis protein mikrobial rumen secara *in vitro*. Data penelitian dianalisis variansi menurut rancangan acak lengkap pola faktorial dan perbedaan diantara perlakuan diuji dengan *Duncan's multiple range test*. Hasil penelitian menunjukkan bahwa *Complete feed* fermentasi sorgum varietas BMR memiliki nilai komposisi kimia, nilai kecernaan, dan produk fermentasi rumen yang lebih baik ($P < 0,05$) dibandingkan dengan varietas super-2. *Complete feed* fermentasi level PK 11% memiliki nilai komposisi kimia, nilai kecernaan, dan produk fermentasi rumen lebih baik ($P < 0,05$) dibandingkan dengan level PK 8%. Lama pemeraman selama 3 hari *complete feed* fermentasi memiliki nilai komposisi kimia, kecernaan, dan produk fermentasi rumen lebih baik ($P < 0,05$) dibandingkan dengan lama pemeraman 7 hari. Hasil analisis variansi menunjukkan bahwa ($P < 0,05$) pada perlakuan varietas sorgum, level PK, dan lama pemeraman terhadap kandungan bahan kering, bahan organik, pH rumen, dan produksi *volatyl fatty acid* (VFA) dengan menunjukkan hasil terbaik pada perlakuan varietas BMR, level PK 11%, dan lama pemeraman fermentasi selama 3 hari. Sebaiknya *complete feed* dibuat menggunakan hijauan sorgum varietas BMR dengan level PK 11% dan lama pemeraman fermentasi 3 hari.

(Kata kunci : Varietas sorgum, level protein kasar, lama pemeraman, *complete feed* fermentasi, kecernaan *in vitro*)

THE EFFECT OF SORGHUM (*Sorghum Bicolor* (L.) Moench) VARIETIES, PROTEIN LEVELS, AND RIPPERING DURATION OF FERMENTED COMPLETE FEED ON IN VITRO DIGESTIBILITY

ABSTRACT

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This study was carried out to determine the effect of sorghum varieties, protein, and rippering duration on chemical composition and in vitro digestibility, of fermented complete feed on completely randomized design of 2 x 2 x 2 factorial patterns. Two varieties sorghum forage namely BMR and Super-2 were used to make complete feeds contained 2 levels of crude protein (CP) (8 and 11%), and complete feed was fermented for 3 and 7 days, each treatment was in 3 replications. Fermented complete feed were sampled for chemical composition analysis of dry matter (DM), organic matter (OM), crude fiber (CF), crude protein (CP) contents, dry matter, organic matter, and crude protein *in vitro* digestibility, and rumen fermentation indicator including rumen acidity (pH), volatile fatty acid production (VFA), ammonia (NH₃), and microbial protein synthesis. The data were analysed with analysis of variant according to factorial pattern and continued with Duncan's multiple range test. The results showed that there were significant interactions ($P < 0.05$) in the treatment of sorghum varieties, protein levels, and rippering duration of the dry matter, organic matter, rumen pH, and the production of volatile fatty acids (VFA). The result showed that fermented complete feed BMR variety had better chemical composition, digestibility values, and rumen fermentation indicator ($P < 0.05$) than super-2 variety. Fermented complete feed at 11% CP level has better chemical composition, digestibility values, and rumen fermentation indicator ($P < 0.05$) than 8% CP level. The rippering duration of fermented complete feed on 3 days had better chemical composition, digestibility values, and rumen fermentation indicator ($P < 0.05$) than 7 days duration of rippering. There was a significant interaction ($P < 0.05$) in the treatment of sorghum varieties, CP levels, and rippering duration on dry matter content, organic matter, rumen pH, and volatile fatty acid (VFA) production. Best treatment combination was BMR variety, 11% CP level, and 3 days of rippering duration. It is better if fermented complete feed was made with sorghum with BMR variety, 11% CP level, and 3 days of rippering duration.

(Keywords : Sorghum varieties, protein levels, rippering duration, fermented complete feed, *in vitro* digestibility).