

**PENGARUH PENGGUNAAN KONSENTRAT TERFERMENTASI  
SEBAGAI SUMBER INOKULUM TERHADAP KECERNAAN  
*IN VITRO* PAKAN KOMPLET FERMENTASI  
BERBASIS BUNGKIL BIJI NYAMPLUNG  
(*Calophyllum inophyllum* L.)**

Engelica Queen Beauty Taufiq  
21/480843/PT/09011

**INTISARI**

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan konsentrat terfermentasi sebagai sumber inokulum pada pencernaan rumen pakan komplet fermentasi berbasis bungkil nyamplung (*Calophyllum inophyllum* L.). Sebelumnya, konsentrat berbasis bungkil nyamplung dipreparasi dengan metode yang berbeda, yaitu tanpa fermentasi (CON), dengan fermentasi untuk menghasilkan mikroba epifit (MEP), dan dengan fermentasi menggunakan mikroba *multi-purpose* (MMP). Konsentrat tersebut digunakan sebagai bahan penyusun sekaligus sumber inokulum dalam pembuatan pakan komplet fermentasi (PKF) yang diformulasikan memiliki kandungan protein kasar 10% dan *neutral detergent fiber* 65%. Pakan komplet fermentasi dilakukan selama 21 hari dan dikering pada suhu 55°C selama 72 jam. Selanjutnya, sebanyak 0,5 g sample diinkubasi dalam rumen *buffer* pada suhu 39°C selama 48 jam menggunakan metode *Tilley and Terry*. Pada inkubasi, setiap perlakuan menggunakan 24 botol inkubasi disertai dengan 4 blanko dan 4 standar. Analisis Kecernaan menggunakan metode *Tilley dan Terry* dan analisis pH menggunakan pH meter. Analisis produksi *volatile fatty acid* (VFA) dan metana (CH<sub>4</sub>) diukur menggunakan *gas chromatography-mass spectrometry* (GC-MS), dan analisis amonia (NH<sub>3</sub>) dilakukan dengan bantuan pembacaan alat *spectrofotometer*. Data hasil pengamatan dari masing-masing perlakuan dianalisis menggunakan analisis variansi (ANOVA) pola searah. Adapun uji lanjutan yaitu *Duncan Multiple Range Test* (DMRT) apabila ditemukan hasil yang signifikan (P<0,05). Hasil penelitian menunjukkan bahwa nilai Kecernaan Bahan Kering (KcBK), Kecernaan Bahan Organik (KcBO), pH, NH<sub>3</sub>, VFA total, dan CH<sub>4</sub> tidak berbeda nyata (P>0,05) antar tiap perlakuan. Berdasarkan penelitian ini dapat disimpulkan bahwa penggunaan konsentrat terfermentasi sebagai bahan penyusun PKF sekaligus sumber inokulum belum dapat memberikan pengaruh terhadap pencernaan dan karakteristik fermentasi di dalam rumen.

Kata kunci: Bungkil nyamplung, fermentasi, inokulum, *in vitro*, pencernaan, pakan komplet fermentasi.

**THE EFFECT OF FERMENTED CONCENTRATE AS INOCULUM SOURCE  
ON *IN VITRO* DIGESTIBILITY OF FERMENTED COMPLETE FEED  
USING TAMANU KERNEL CAKE  
(*Calophyllum inophyllum* L.)**

Engelica Queen Beauty Taufiq  
21/480843/PT/09011

**ABSTRACT**

This research aims to determine the effect of adding fermented concentrate as an inoculum source on the rumen digestibility of fermented complete feed based on tamanu kernel cake (*Calophyllum inophyllum* L.) press cake. Previously, nyamplung press cake-based concentrate was prepared using different methods, namely without fermentation (CON), with fermentation to produce epiphytic microbes (MEP), and with fermentation using multi-purpose microbes (MMP). The concentrate was used as a constituent material as well as an inoculum source in the production of fermented complete feed (FCF) formulated to have a crude protein content of 10% and *neutral detergent fiber* 65%. Fermented complete feed was processed for 21 days and dried at 55°C for 72 hours. Subsequently, 0.5 g of sample was incubated in rumen buffer at 39°C for 48 hours using the Tilley and Terry method. In the incubation, each treatment used 24 incubation bottles along with 4 blanks and 4 standards. Digestibility analysis was performed using the Tilley and Terry method, and pH analysis was conducted using pH meter. Analysis of volatile fatty acid (VFA) and methane (CH<sub>4</sub>) production was measured using gas chromatography-mass spectrometry (GC-MS), and ammonia (NH<sub>3</sub>) analysis was performed with the aid of a spectrophotometer. The observed data from each treatment were analyzed using one-way analysis of variance (ANOVA). Furthermore, a further test, namely the Duncan Multiple Range Test (DMRT), was conducted if significant results were found ( $P < 0,05$ ). The results showed that the *in vitro* digestibility of dry matter (IVDMD) and organic matter (IVDOM), pH, NH<sub>3</sub>, VFA, and CH<sub>4</sub> values did not differ significantly ( $P > 0,05$ ) among the treatments. Based on this study, it can be concluded that the use of fermented concentrate as a constituent material of FCF as well as an inoculum source has not been able to provide an effect on digestibility and fermentation characteristics in the rumen.

Keywords: Digestibility, fermentation, fermented complete feed inoculum, *in vitro*, tamanu kernel cake.