

**KOMPOSISI KIMIA, PROFIL ASAM LEMAK, DAN KECERNAAN
DALAM RUMEN BUNGKIL NYAMPLUNG
(*Calophyllum inophyllum* L.) DARI
BERBAGAI LOKASI PRODUKSI**

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INTISARI

Penelitian ini bertujuan untuk mengetahui komposisi kimia, profil asam lemak, dan kecernaan dalam rumen bungkil nyamplung yang berasal dari 4 lokasi produksi yaitu dari Purworejo, Bantul, Cilacap, dan Sleman. Masing-masing lokasi produsen, diambil sampel (10 kg) sebanyak 3 kali pada periode produksi yang berbeda. Setiap sampel bungkil nyamplung dengan asal yang berbeda dianalisis proksimat, profil asam lemak menggunakan *Gas Chromatography-Mass Spectrometry* (GC-MS), dan uji kecernaan secara *in vitro* dengan metode *Tilley and Terry*. Analisis statistik yang digunakan adalah *One Way ANOVA* yang diuji lanjutan *Tukey/HSD (Honestly Significant Differences)*. Hasil penelitian menunjukkan bahwa kandungan bahan kering (BK) tidak berbeda secara signifikan antar lokasi. Kandungan bahan organik (BO) L2 berbeda nyata dengan L4, L1, dan L3 ($P \leq 0,001$; 88,55% vs 93,55%; 94,14%; dan 94,48%). Kandungan protein kasar (PK) L2 berbeda nyata dengan L3 dan L4 ($P \leq 0,002$; 13,19% vs 20,10%; 23,10%). Kandungan lemak kasar (LK) L2 berbeda nyata dengan L3, L1, dan L4 ($P \leq 0,001$; 19,55% vs 8,73% vs 4,61% dan 4,34%). Kandungan serat kasar (SK) L1 berbeda nyata dengan L2, L3, dan L4 ($P \leq 0,001$; 26,98% vs 19,17% vs 14,80% dan 8,69%). Kandungan *saturated fatty acid* (SFA) L4 berbeda nyata dengan L1, dan L2 ($P \leq 0,011$; 25,55% vs 29,16% dan 29,77%). Kandungan *monounsaturated fatty acid* (MUFA) L2 berbeda nyata dengan L4, L1, dan L3 ($P \leq 0,001$; 49,52% vs 41,69%; 40,73%; dan 39,87%). Kandungan *polyunsaturated fatty acid* (PUFA) L2 berbeda dengan L1, L4, dan L3 ($P \leq 0,001$; 20,71% vs 30,12%; 32,42%; dan 33,28%). Kecernaan bahan kering (KcBK) L4 berbeda nyata L3, L1, dan L2 ($P \leq 0,001$; 73,65% vs 59,12% vs 45,90% dan 44,36%). Kecernaan bahan organik (KcBO) L4 berbeda nyata dengan L3, L2, dan L1 ($P \leq 0,001$; 75,03% vs 61,25% vs 48,50% dan 46,94%). Penelitian ini menunjukkan perbedaan lokasi produksi dengan metode yang berbeda menghasilkan variasi komposisi kimia, profil asam lemak, dan kecernaan dalam rumen.

Kata kunci: bungkil nyamplung, analisis proksimat, profil asam lemak, kecernaan dalam rumen

CHEMICAL COMPOSITION, FATTY ACID PROFILE, AND RUMEN DIGESTIBILITY OF NYAMPLUNG (*Calophyllum inophyllum* L.) KERNEL CAKE FROM VARIOUS PRODUCTION SITES

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ABSTRACT

This study aimed to determine the chemical composition, fatty acid content, and rumen digestibility of *Calophyllum inophyllum* kernel cake (nyamplung cake) originating from four production sites: Purworejo, Bantul, Cilacap, and Sleman. From each production site, 10 kg of samples were collected three times during different production periods. Each nyamplung cake sample was analyzed for proximate composition, fatty acid profile using Gas Chromatography-Mass Spectrometry (GC-MS), and in vitro digestibility using the Tilley and Terry method. The statistical analysis used was one-way ANOVA followed by Tukey's Honestly Significant Difference (HSD) test. The results showed that dry matter (DM) content did not differ significantly among the locations. Organic matter (OM) content in L2 was significantly different from L4, L1, and L3 ($P \leq 0.001$; 88.55% vs 93.55%, 94.14%, and 94.48%). Crude protein (CP) content in L2 was significantly different from L3 and L4 ($P \leq 0.002$; 13.19% vs 20.10% and 23.10%). Crude fat (CF) content in L2 was significantly different from L3, L1, and L4 ($P \leq 0.001$; 19.55% vs 8.73%, 4.61%, and 4.34%). Crude fiber (CF) content in L1 was significantly different from L2, L3, and L4 ($P \leq 0.001$; 26.98% vs 19.17%, 14.80%, and 8.69%). Saturated fatty acid (SFA) content in L4 was significantly different from L1 and L2 ($P \leq 0.011$; 25.55% vs 29.16% and 29.77%). Monounsaturated fatty acid (MUFA) content in L2 was significantly different from L4, L1, and L3 ($P \leq 0.001$; 49.52% vs 41.69%, 40.73%, and 39.87%). Polyunsaturated fatty acid (PUFA) content in L2 differed from L1, L4, and L3 ($P \leq 0.001$; 20.71% vs 30.12%, 32.42%, and 33.28%). In vitro dry matter digestibility (IVDMD) in L4 was significantly different from L3, L1, and L2 ($P \leq 0.001$; 73.65% vs 59.12%, 45.90%, and 44.36%), while in vitro organic matter digestibility (IVOMD) in L4 was significantly different from L3, L2, and L1 ($P \leq 0.001$; 75.03% vs 61.25%, 48.50%, and 46.94%). This study indicates that differences in production sites and method lead to variations in chemical composition, fatty acid profiles, and rumen digestibility of nyamplung kernel cake.

Keywords: *Calophyllum inophyllum* L. kernel cake, proximate analysis, fatty acid profile, rumen digestibility