UNIVERSITAS
GADJAH MADA
**Konsumsi Nutrien, Produksi, dan Komposisi Susu Sapi Perah Laktasi yang Diberi Suplementasi Pelet
Protein-Lemak Terproteksi dan Selenium**
Satrio Anggono, Prof. Dr. Ir. Budi Prasetyo Widyobroto, DESS., DEA., IPU., ASEAN Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

KONSUMSI NUTRIEN, PRODUKSI DAN KOMPOSISI SUSU SAPI PERAH LAKTASI YANG DIBERI SUPLEMENTASI PELET PROTEIN-LEMAK TERPROTEKSI DAN SELENIUM

Satrio Anggono
22/493044/PT/09249

INTISARI

Penelitian ini bertujuan untuk mengevaluasi konsumsi nutrien, produksi susu, dan komposisi susu sapi perah Peranakan Friesian Holstein (PFH) fase pertengahan laktasi yang diberikan suplementasi pelet protein-lemak terproteksi dan selenium dalam ransum. Penelitian ini dilakukan secara *in vivo* dengan menggunakan 10 ekor sapi PFH fase pertengahan laktasi, dengan periode laktasi ke-1 sampai ke-2, rata-rata produksi susu 16,01 ± 5,20 L/ekor/hari, bobot badan 588,4 ± 68,0 kg, dan *body condition score* (BCS) 2,50 sampai 3,50. Ransum pakan yang digunakan terdiri atas hijauan rumput gajah (*Pennisetum purpureum* cv. Gamma umami), konsentrat komersial, ampas tahu, serta pelet protein-lemak terproteksi dan selenium sebanyak 60 g BK UDP dalam pelet/L produksi susu/ekor/hari. Pemberian pakan dilakukan dua kali sehari pada pagi dan sore hari secara terbatas sesuai kebutuhan ternak, sedangkan air minum diberikan secara *ad libitum*. Variabel yang diamati meliputi komposisi nutrien ransum, konsumsi nutrien [bahan kering (BK), bahan organik (BO), protein kasar (PK), serat kasar (SK), lemak kasar (LK), dan *total digestible nutrient* (TDN)], serta produksi dan komposisi susu [kadar lemak, protein, laktosa, *solid non-fat* (SNF), dan *total solid* (TS)]. Data dianalisis secara deskriptif. Hasil penelitian menunjukkan bahwa rata-rata konsumsi BK sebesar 18,79 ± 1,51 kg/ekor/hari, BO 17,20 ± 2,49 kg BK/ekor/hari, PK 3,48 ± 0,55 kg BK/ekor/hari, SK 4,31 ± 0,71 kg BK/ekor/hari, dan TDN 12,05 ± 1,73 kg BK/ekor/hari. Rata-rata produksi susu yang dihasilkan sebesar 16,60 ± 5,10 L/ekor/hari dengan produksi susu setara 4% *fat corrected milk* (FCM) sebesar 17,20 ± 4,80 kg/ekor/hari, Komposisi susu yang dihasilkan meliputi kadar lemak sebesar 4,31 ± 0,55% dengan produksi lemak susu 0,70 ± 0,18 kg/ekor/hari, kadar protein 3,32 ± 0,13% dengan produksi protein susu 0,55 ± 0,15 kg/ekor/hari, kadar laktosa 4,78 ± 0,19% dengan produksi laktosa 0,79 ± 0,22 kg/ekor/hari, kadar *solid non-fat* (SNF) 8,56 ± 0,35%, dan *total solid* (TS) 12,89 ± 0,74%. Berdasarkan hasil penelitian, ransum yang disuplementasi pelet protein-lemak terproteksi dan selenium mampu mencukupi kebutuhan ternak dan menghasilkan performa produksi sapi PFH fase pertengahan laktasi pada kisaran normal sesuai referensi literatur.

Kata kunci: Konsumsi nutrien, Peranakan Friesian Holstein, Produksi dan komposisi susu, Pelet protein-lemak terproteksi, Selenium.

UNIVERSITAS
GADJAH MADA
**Konsumsi Nutrien, Produksi, dan Komposisi Susu Sapi Perah Laktasi yang Diberi Suplementasi Pelet
Protein-Lemak Terproteksi dan Selenium**
Satrio Anggono, Prof. Dr. Ir. Budi Prasetyo Widyobroto, DESS., DEA., IPU., ASEAN Eng.
Universitas Gadjah Mada, 2026 | Diunduh dari http://etd.repository.ugm.ac.id/

NUTRIEN CONSUMPTION, MILK PRODUCTION AND COMPOSITION OF MID LACTATING DAIRY COWS WITH SUPPLEMENTATION OF PROTECTED PROTEIN-FAT PELLETS AND SELENIUM

Satrio Anggono
22/493044/PT/09249

ABSTRACT

This study aimed to evaluate nutrient consumption, production, and milk composition of lactating Friesian Holstein crossbreed dairy cows (PFH) with supplementation of protected protein-fat pellets and selenium. This study was conducted in vivo used 10 PFH dairy cows in the mid-lactation, 1st to 2nd lactation period, with an average milk production of 16.01 ± 5.20 L/head/day, body weight of 588.4 ± 68.0 kg, and a body condition score (BCS) ranging from 2.50 to 3.50. The ration consisted of elephant grass (*Pennisetum purpureum* cv. Gamma Umami), commercial concentrate, tofu dregs, and supplementation protected protein-fat pellets with selenium of 60 g DM UDP pellets/L/milk production/head/day. Feeding was carried out twice daily (morning and afternoon) in a limited amounts according to the requirements, while drinking water was provided ad libitum. Variables observed were the composition of nutrients, consumption of nutrients [dry matter (DM), organic matter (OM), crude protein (CP), crude fiber (CF), ether extract (EE), and total digestible nutrient (TDN)], production and milk composition [fat, protein, lactose, solid non-fat (SNF), and total solid (TS)]. Data were analyzed descriptively. The results showed average consumption of DM 18.79 ± 1.51 kg/head/day, OM 17.20 ± 2.49 kg DM/head/day, CP 3.48 ± 0.55 kg DM/head/day, CF 4.31±0.71 kg DM/head/day, and TDN 12.05 ± 1.73 kg DM/head/day. The average milk production was 16.60 ± 5.10 L/head/day with 4% of fat corrected milk (FCM) is 17.20 ± 4.80 kg/head/day. Composition milk fat content was 4.31 ± 0.55% with fat production is 0.70 ± 0.18 kg/head/day, milk protein content is 3.32 ± 0.13% with protein production is 0.55 ± 0.15 kg/head/day, milk lactose content is 4.78 ± 0.19% with lactose production is 0.79 ± 0.22 kg/head/day, solid non-fat (SNF) content is 8.56 ± 0.35%, and total solids (TS) is 12.89 ± 0.74%. Based on the results of the study, feed with supplementation protected protein-fat pellets and selenium was able to meet nutritional requirements of the animals and supported the productive performance of mid-lactation Friesian Holstein crossbred (PFH) dairy cows within the normal range according to the literature.

Keywords: Nutrien consumption, Friesian Holstein crossbreed, Production and milk composition, Protected protein-fat pellets, Selenium.