

SUPLEMENTASI PADA PELET *BLENDED* PROTEIN TERPROTEKSI-SELENIUM  
TERHADAP KONSUMSI NUTRIEN, PRODUKSI DAN KOMPOSISI SUSU,  
SERTA *BLOOD UREA NITROGEN* DAN *MILK UREA NITROGEN*  
SAPI PERAH TENGAH LAKTASI

INTISARI

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Penelitian ini bertujuan untuk mengkaji pengaruh suplementasi pelet *blended* protein terproteksi-selenium terhadap konsumsi nutrisi, produksi dan komposisi susu, *blood urea nitrogen*, *milk urea nitrogen*, bobot badan, dan *body condition score* pada sapi perah tengah laktasi. Penelitian dilakukan secara *in vivo* selama 60 hari di Kelompok Ternak Ngudi Makmur II, Cangkringan, Yogyakarta. Penelitian ini menggunakan sapi perah Peranakan Friesian Holstein (PFH) periode tengah laktasi yang berjumlah 12 ekor terbagi menjadi 2 kelompok dengan 6 ulangan setiap kelompoknya, yaitu kelompok P0 dengan pemberian ransum basal dan kelompok P1 dengan pemberian ransum basal ditambah dengan pelet *blended* protein terproteksi-selenium. Ransum basal terdiri dari *Brachiaria decumbens*, *Panicum maximum*, *Pennisetum purpureum*, tebon jagung, *pollard*, dan konsentrat komersial. Pemberian bungkil kedelai terproteksi dalam pelet sebanyak 60 g BK UDP/L produksi susu/ekor/hari. Sapi perah laktasi berada pada periode laktasi ke-1 sampai 3 dengan umur 3 sampai 5 tahun. Air minum diberikan secara *ad libitum*. Variabel yang diamati adalah komposisi nutrisi bahan pakan, konsumsi nutrisi (bahan kering, bahan organik, protein kasar, serat kasar, dan *total digestible nutrients*), produksi dan komposisi susu (kadar dan produksi protein, lemak, laktosa, serta kadar *solid non fat* dan *total solid*), bobot badan, *body condition score*, *blood urea nitrogen*, dan *milk urea nitrogen*. Data konsumsi nutrisi, produksi dan komposisi susu, *blood urea nitrogen*, *milk urea nitrogen*, bobot badan, dan *body condition score* dianalisis dengan Uji Independent Sample *T-test*. Hasil penelitian menunjukkan bahwa konsumsi bahan kering ( $13,74 \pm 1,30$  vs.  $15,30 \pm 0,83$  kg/ekor/hari), bahan organik ( $12,27 \pm 1,14$  vs.  $13,66 \pm 0,70$  kg BK/ekor/hari), protein kasar ( $1,76 \pm 0,20$  vs.  $2,04 \pm 0,18$  kg BK/ekor/hari), *total digestible nutrient* ( $8,01 \pm 0,55$  vs.  $8,65 \pm 0,59$  kg BK/ekor/hari), produksi susu ( $11,98 \pm 0,63$  vs.  $15,93 \pm 0,84$  L/ekor/hari), produksi 4% FCM ( $11,47 \pm 1,05$  vs.  $15,07 \pm 0,79$  kg/ekor/hari), kadar dan produksi lemak susu ( $3,62 \pm 0,29$  vs.  $3,98 \pm 0,14\%$  dan  $0,45 \pm 0,04$  vs.  $0,67 \pm 0,03$  kg/ekor/hari), kadar dan produksi protein susu ( $2,92 \pm 0,46$  vs.  $3,45 \pm 0,18\%$  dan  $0,36 \pm 0,05$  vs.  $0,57 \pm 0,03$  kg/ekor/hari) dan produksi laktosa susu ( $0,64 \pm 0,02$  vs.  $0,91 \pm 0,08$  kg/ekor/hari) antara kelompok P0 dan P1 menunjukkan berbeda nyata ( $P < 0,05$ ). Konsumsi serat kasar ( $4,14 \pm 0,42$  vs.  $4,52 \pm 0,25$  kg BK/ekor/hari), kadar laktosa ( $5,20 \pm 0,23$  vs.  $5,54 \pm 0,42\%$ ), *solid non fat* ( $8,06 \pm 0,65$  vs.  $8,79 \pm 0,24\%$ ), *total solid* ( $11,68 \pm 0,91$  vs.  $12,76 \pm 0,21\%$ ), *blood urea nitrogen* ( $12,59 \pm 1,15$  vs.  $14,20 \pm 1,46$  mg/dL), *milk urea nitrogen* ( $11,80 \pm 1,06$  vs.  $13,76 \pm 2,42$  mg/dL), bobot badan ( $472,84 \pm 40,73$  vs.  $503,08 \pm 37,44$  kg), dan *body condition score* ( $2,81 \pm 0,07$  vs.  $2,97 \pm 0,34$ ) antara kelompok P0 dan P1 menunjukkan perbedaan tidak nyata ( $P > 0,05$ ). Disimpulkan bahwa pemberian pakan dengan suplementasi pelet *blended* protein terproteksi-selenium dalam ransum pada sapi perah tengah laktasi dapat meningkatkan konsumsi nutrisi (bahan kering, bahan organik, protein kasar, dan *total digestible nutrients*),



produksi susu, produksi 4% FCM, kadar dan produksi protein, kadar dan produksi lemak, serta produksi laktosa, akan tetapi tidak meningkatkan konsumsi serat kasar, kadar laktosa, *solid non fat*, *total solid*, *blood urea nitrogen*, *milk urea nitrogen*, bobot badan, dan *body condition score*.

Kata kunci: Produksi dan komposisi susu, Protein terproteksi, Konsumsi nutrisi, Selenium, Pelet.

**SUPPLEMENTATION OF PROTECTED PROTEIN-SELENIUM BLENDED PELLETS ON NUTRIENT CONSUMPTION, MILK PRODUCTION AND COMPOSITION, BLOOD UREA NITROGEN AND MILK UREA NITROGEN VALUES IN MID LACTATING DAIRY COWS**

**ABSTRACT**

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This study aimed to examine the effect of selenium-protected protein blended pellet supplementation on nutrient consumption, milk production and composition, blood urea nitrogen, milk urea nitrogen, body weight, and body condition score in mid-lactation dairy cows. The study was conducted in vivo with 2 during 60 days at Ngudi Makmur II Dairy Farmers Group, Cangkringan, Yogyakarta. This study used 12 Holstein Friesian Crossbreed (PFH) dairy cows in the mid-lactation period, divided into 2 groups with 6 replications for each group, namely group P0 with basal rations and group P1 with basal rations supplemented with selenium-protected protein blended pellet. Providing protected soybean meal in pellets of 60 g DM UDP/L milk production/head/day. Lactating dairy cows are in the 1<sup>st</sup> to 3<sup>rd</sup> lactation period with an age of 3 to 5 years. Drinking water is provided ad libitum. Basal feed from *Brachiaria decumbens*, *Panicum maximum*, *Pennisetum purpureum*, corn stover, pollard, and commercial concentrates. The parameters collected were the composition of feed ingredients, consumption nutrients (dry matter, organic matter, crude protein, crude fiber, and total digestible nutrients), milk production and composition (content and production of protein, fat, lactose, and content solid non fat, total solid), blood urea nitrogen, milk urea nitrogen, body weight, and body condition score,. The data nutrient consumption, milk production and composition, blood urea nitrogen, milk urea nitrogen, body weight and body condition score were analyzed using the Independent Sample T-test. The results showed that consumption of dry matter (13,74±1,30 vs. 15,30±0,83 kg/head/day), organic matter (12,27±1,14 vs. 13,66±0,70 kg DM/head/day), crude protein (1,76±0,20 vs. 2,04±0,18 kg DM/head/day), total digestible nutrients (8,01±0,55 vs. 8,65±0,59 kg DM/head/day), milk production (11,98±0,63 vs. 15,93±0,84 L/head/day), 4% FCM production (11,47±1,05 vs. 15,07±0,79 kg/head/day), protein content and production (3,62±0,29 vs. 3,98±0,14% and 0,45±0,04 vs. 0,67±0,03 kg/head/day), fat content and production (2,92±0,46 vs. 3,45±0,18% and 0,36±0,05 vs. 0,57±0,03 kg/head/day), and lactose production (0,64±0,02 vs. 0,91±0,08 kg/head/day) between P0 and P1 were significantly different (P<0.05). Crude fiber consumption (4,14±0,42 vs. 4,52±0,25 kg DM/head/day), lactose content (5,20±0,23 vs. 5,54±0,42%), solid non fat (8,06±0,65 vs. 8,79±0,24%), total solids (11,68±0,91 vs. 12,76±0,21%), blood urea nitrogen (12,59±1,15 vs. 14,20±1,46 mg/dL), milk urea nitrogen (11,80±1,06 vs. 13,76±2,42 mg/dL), body weight (472,84±40,73 vs. 503,08±37,44 kg), and body condition score (2,81±0,07 vs. 2,97±0,34) between P0 and P1 did not show significant differences (P>0.05). It was concluded that feeding with the addition of selenium-protected protein blended pellet supplementation to mid-lactation dairy cows can increase nutrient consumption (dry matter, organic matter, crude protein, and total digestible nutrients), milk production, 4% FCM production, protein content and production, fat content and production, and lactose production, but was not



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TENGAH LAKTASI**

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able to increase crude fiber consumption, lactose content, solid non fat, total solids, blood urea nitrogen, milk urea nitrogen, body weight, and body condition scores.

Keywords: Milk production and composition; Protected proteins; Nutrion consumption; Selenium; Pellet.