

OPTIMALISASI PENGGUNAAN BAHAN PAKAN LOKAL DALAM RANSUM PENGHEMUKAN SAPI POTONG DI KABUPATEN GUNUNGKIDUL

INTISARI

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Penelitian bertujuan untuk memperoleh bahan pakan lokal yang efisien untuk penghemukan sapi PO di Kabupaten Gunungkidul. Penelitian dilakukan tiga tahap yaitu: 1) Penelitian pertama menguji pencernaan *in vitro* terhadap bahan pakan lokal: bungkil sawit (BKS), bungkil kopra (BKK), kulit kedelai (KK), menir kedelai (MK), hijauan kaliandra (HK), hijauan gamal (HG), jerami kacang tanah (JKT), dan gaplek (GP). Hasil penelitian tahap pertama adalah kandungan protein kasar tiga bahan lokal limbah agroindustri antara 17,0 – 33,6% dengan kandungan protein tertinggi pada MK sedangkan kandungan bahan ekstrak tanpa nitrogen (BETN) antara 27,1 – 57,8% dengan kandungan BETN tertinggi pada BKK. Kandungan protein tiga leguminosa antara 9,58 – 25,3% dengan kandungan protein kasar tertinggi pada HG sedangkan kandungan BETN antara 35,9 – 49,6% dengan kandungan BETN tertinggi pada HK. Dari hasil penelitian tahap pertama dipilih BKK, KK, HG, dan GP untuk dilanjutkan pada penelitian tahap kedua. 2) Penelitian tahap kedua dilakukan secara *in vitro* dan *in vivo* untuk menguji pakan penguat berbahan lokal dengan menggunakan empat perlakuan yaitu: T_0 = *Current feeding system* (CFS), T_1 = CFS + 25% BKK + 25% KK, 50% GP, T_2 = CFS + 25% KK + 25% HG + 50% GP, dan T_3 = CFS + 25% BKK + 25% HG + 50% GP. Hasil penelitian tahap kedua menunjukkan perlakuan T_1 memiliki pencernaan bahan kering (BK) dan bahan organik (BO) total paling tinggi, namun memiliki penambahan bobot badan tidak berbeda dengan perlakuan T_3 . Pemberian pakan tambahan (T_1 , T_2 , dan T_3) meningkatkan pendapatan peternak berdasarkan perhitungan *income over feed cost* (IOFC). Dari hasil penelitian tahap dua dipilih perlakuan pakan berupa CFS + 25% KK + 25% HG + 50% GP untuk digunakan pada penelitian tahap ketiga. 3) Penelitian tahap ketiga dilakukan secara *in vitro* dan *in vivo* dengan membandingkan pakan penguat tanpa proses pelet (non-pelet) vs. pakan penguat dalam bentuk pelet serta menguji kualitas fisik pelet. Hasil penelitian tahap ketiga menunjukkan pelet berbahan 25% KK + 25% HG + 50% GP memiliki durabilitas 85,1% dan *hardness* 8,44 kg/m³. Perlakuan dengan penambahan pakan penguat non-pelet dan pakan penguat berbentuk pelet tidak berpengaruh terhadap pencernaan dan penambahan bobot badan. Kesimpulan, penggunaan pakan penguat yang terbuat dari 50% GP, 25% BKK dan 25% KK memberikan respon terbaik atas peningkatan konsumsi, pencernaan, fermentasi rumen, produktivitas dan efisiensi pakan. Penggunaan 25% KK dalam susunan pakan penguat dapat digantikan dengan 25% HG dengan memberikan respon yang sama terhadap konsumsi, produktivitas dan efisiensi pakan. Pelet yang terbuat dari 50% tepung gaplek, 25% kulit kedelai dan 25% tepung daun gamal memiliki kualitas fisik yang baik. Penggunaan pakan penguat pelet dan non pelet tidak berpengaruh terhadap pencernaan, karakteristik rumen dan kinerja sapi potong.

Kata kunci: Sapi PO, Bahan pakan lokal, Pakan penguat sapi, Pelet

OPTIMIZATION OF LOCAL FEED INGREDIENTS IN RATIOS FOR BEEF CATTLE FATTENING IN GUNUNGKIDUL DISTRICT

ABSTRACT

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The research aims to obtain efficient local feed ingredients for fattening PO cattle in Gunungkidul Regency. The research was conducted in three stages: 1) The first study tested the in vitro digestibility of local feed ingredients: palm oil meal (BS), copra meal (BKK), soybean hull (KK), soybean groats (MK), calliandra forage (HK), Gamal forage (HG), peanut straw (JKT) and cassava (GP). The results of the first phase of the study were that the crude protein content of the three local ingredients of agro-industrial waste was between 17.0 – 33.6% with the highest content in MK while the content of BETN was between 27.13% - 57.83% with the highest content in BKK. The crude protein content of the three legumes was between 9.58 – 25.3% with the highest content of HG while the content of BETN was between 35.9 – 49.6% with the highest content of HK. The results of the first phase of the research were BKK, KK, HG and GP to be continued in the second phase of the study. 2) The second phase of the study was carried out in vitro and in vivo, using four treatments, namely: (T₀) Current feeding system (CFS), (T₁) CFS + 25% BKK + 25% KK, 50% GP (T₂) CFS + feed supplement 25% KK + 25% HG + 50% GP and T₃) CFS + feed supplement 25% BKK+ 25% HG+ 50% GP. The results of the second phase of the study, treatment with the addition of supplement feed composed of 25% BKK + 25% KK + 50% GP (T₁) had the highest digestibility of rumen + post-rumen dry matter and organic matter, but body weight gain did not differ from the treatment with the addition of feed supplement composed of 25% BKK + 25% HG + 50% GP(T₃). Providing additional feed (T₁, T₂ and T₃) increases farmer income based on IOFC calculations. The results of the second phase of the study selected CFS + feed supplement consisting of 25% KK + 25% HG + 50% GP for use in the third phase of the study. 3) The third phase of the research was carried out in vitro and in vivo by comparing non-pellet and pellet supplements feeds and testing the physical quality of the pellets. The results of the third phase of the research, pellets with 25% HG, 25% KK and 50% GP have a durability of 85.1% and a hardness of 8.44 kg/m³. Treatment with the addition of non-pelet feed supplement and pelet feed supplement had no effect on digestibility and body weight gain. In conclusion, the use of feed supplement made of 50% GP, 25% BKK and 25% KK gave the best response for increased consumption, digestibility, rumen fermentation, productivity and feed efficiency. The use of 25% KK in a feed supplement arrangement can be toned down with 25% HG providing a similar response to feed consumption, productivity and efficiency. Pellets made from 50% GP, 25% KK and 25% HG have good physical quality. The use of pellet and non-pellet feed supplement has no effect on digestibility, rumen characteristics and performance of beef cattle.

Keywords: PO cattle, local feed ingredients, cattle concentrate, pellets.