

KUALITAS FISIK DAN KIMIA PELET GAMAL (*Gliricidia sepium*) DAN KALIANDRA (*Calliandra calothyrsus*) DENGAN PERBEDAAN BAHAN PEREKAT

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas fisik dan kimia pelet gamal (*Gliricidia sepium*) dan kaliandra (*Calliandra calothyrsus*) dengan perbedaan bahan perekat. Penelitian menggunakan dua faktor perlakuan yang berbeda dengan 3 ulangan. Faktor pertama yaitu jenis hijauan (R) dengan R1: gamal dan R2: kaliandra. Faktor kedua yaitu jenis bahan perekat (B) dengan B1: onggok dan B2: *wheat pollard*. Data yang diperoleh dianalisis variansi dengan metode Rancangan Acak Lengkap (RAL) pola faktorial 2×2 untuk uji kualitas fisik meliputi diameter dan panjang, *pellet durability index* (PDI), berat jenis, kerapatan tumpukan, dan kerapatan pemadatan tumpukan serta kualitas kimia meliputi analisis proksimat (kadar air (KA), abu, protein kasar (PK), dan ekstrak eter (EE)), *Neutral Detergent Fiber* (NDF), *Acid Detergent Fiber* (ADF), *Non-Fiber Carbohydrate* (NFC), bahan kering (KcBK), bahan organik (KcBO) dan apabila ada perbedaan yang nyata maka akan dilanjutkan dengan uji lanjut Tukey. Data analisis kualitas fisik untuk karakteristik fisik pelet dianalisis dengan metode deskriptif. Hasil penelitian menunjukkan bahwa perlakuan macam hijauan (gamal dan kaliandra) memberikan pengaruh yang nyata terhadap kualitas fisik pelet untuk berat jenis dan kualitas kimia pelet meliputi kadar abu, PK, EE, ADF, NFC, KcBK, dan KcBO ($P < 0,05$). Perlakuan penambahan bahan perekat onggok dan *wheat pollard* memberikan pengaruh yang nyata pada kualitas kimia meliputi kadar abu, PK, EE, NDF, dan ADF ($P < 0,05$). Terdapat interaksi antara macam hijauan dan macam bahan perekat terhadap kadar PK, EE, NDF, ADF, dan NFC ($P < 0,05$). Dapat disimpulkan bahwa perlakuan yang memberikan hasil pelet dengan kualitas fisik dan kimia terbaik yaitu pada hijauan kaliandra dengan penggunaan bahan perekat onggok.

Kata kunci: pelet, hijauan, bahan perekat, kualitas fisik, kualitas kimia

PHYSICAL AND CHEMICAL QUALITY OF GAMAL (*Gliricidia sepium*) AND KALIANDRA (*Calliandra calothyrsus*) PELLETS WITH DIFFERENT BINDER

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ABSTRACT

This study aims to determine the physical and chemical quality of pellets of gamal (*Gliricidia sepium*) and calliandra (*Calliandra calothyrsus*) with different binder. The study used two different treatment factors with 3 replications. The first factor is the type of forage (R) with R1: gamal and R2: calliandra. The second factor is the type of binder (B) with B1: cassava and B2: *wheat pollard*. The data obtained were analyzed for variance using a completely randomized design (CRD) 2 x 2 factorial pattern for physical quality tests including diameter and length, pellet durability index (PDI), specific gravity, stack density, and stack compaction density as well as chemical quality including proximate analysis (moisture content (KA), ash, crude protein (CP), and ether extract (EE)), Neutral Detergent Fiber (NDF), Acid Detergent Fiber (ADF), Non-Fiber Carbohydrate (NFC), dry matter digestibility (DMD), organic matter digestibility (OMD) and if there is a significant difference, it will be continued with Tukey. Physical quality analysis data for the physical characteristics of pellets were analyzed by descriptive method. The results showed that the treatment of gamal forage and calliandra had a significant effect on the physical quality of pellets for specific gravity and chemical quality of pellets including ash content, CP, EE, ADF, NFC, DMD and OMD ($P < 0,05$). The addition of cassava and *wheat pollard* binder had a significant effect on chemical quality including ash content, CP, EE, NDF, and ADF ($P < 0,05$). There was an interaction between types of forage and types of binder on the levels of CP, EE, NDF, ADF, and NFC ($P < 0,05$). It can be concluded that the treatment that has produces pellets with the best physical and chemical quality were obtained from calliandra forages using cassava binder.

Keywords: pellet, forage, binder, physical quality, chemical quality