

PENGARUH PERBEDAAN MACAM *BINDER* TERHADAP KUALITAS FISIK DAN KIMIA PELET BERBASIS EKSKRETA AYAM TERFERMENTASI SEBAGAI PAKAN INKONVENSIONAL

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INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penggunaan berbagai macam *binder* terhadap kualitas fisik dan kimia dari pelet berbasis ekskreta ayam terfermentasi. Pembuatan pelet berbasis ekskreta ayam terfermentasi menggunakan 3 jenis *binder* yang berbeda yaitu tepung tapioka (P1), tepung terigu (P2), dan tepung gaplek (P3). Ekskreta ayam terfermentasi dengan kandungan air 59,92% dicampurkan *binder* sebanyak 10%. Adonan yang sudah tercampur dimasukkan *pelletizer* dengan masing-masing 3 kali pengulangan untuk setiap perlakuan. Setiap ulangan membutuhkan sebanyak 1500 g adonan pelet. Pelet yang dihasilkan kemudian dilakukan pengujian kualitas kimia dan fisik. Analisis laboratorium yang dilakukan meliputi uji kualitas kimia berupa analisis proksimat dan *gross energy*. Kemudian uji kualitas fisik berupa berat jenis, kerapatan tumpukan, kerapatan pemadatan tumpukan, *pellet durability index* (PDI), *modulus uniformity* dan *modulus of fineness* serta uji daya apung, ketahanan dalam air. Data yang diperoleh dianalisis dengan metode *one-way* ANOVA dengan nilai signifikansi sebesar 5%. Apabila didapatkan hasil yang signifikan maka dilanjutkan dengan uji *Duncan's test*. Hasil penelitian menunjukkan bahwa perbedaan macam *binder* pada pelet berbasis ekskreta ayam terfermentasi tidak memberikan perbedaan secara numerik terhadap kandungan bahan kering, bahan organik, lemak kasar, serat kasar dan *gross energy*. Pelet dengan *binder* tepung terigu memiliki kandungan protein kasar paling tinggi. Perbedaan *binder* juga tidak menunjukkan perbedaan nyata terhadap kualitas fisik, meliputi pengukuran pelet, berat jenis, kerapatan tumpukan, kerapatan pemadatan tumpukan, *pellet durability index*, *modulus uniformity*, *modulus of fineness*, dan ketahanan dalam air. Pelet dengan *binder* tepung terigu menghasilkan daya apung terbaik. Penelitian ini merekomendasikan tepung terigu untuk digunakan sebagai *binder* pada pelet berbasis ekskreta ayam terfermentasi.

Kata kunci: *binder*, ekskreta ayam, kualitas pelet, pakan inkonvensional.

THE EFFECT OF DIFFERENT BINDER TYPES ON THE PHYSICAL AND CHEMICAL QUALITY OF FERMENTED CHICKEN EXCRETA-BASED PELLETS AS UNCONVENTIONAL FEEDSTUFF

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ABSTRACT

This study was aimed to determine the effect of using various binders on the physical and chemical qualities of pellets based on fermented poultry manure. The production of fermented poultry manure used three different types of binders: tapioca flour (P1), wheat flour (P2), and cassava flour (P3). Fermented poultry manure with a water content of 59.92% was mixed with 10% binder. The mixture was put into the pelletizer with three period oof production as replications for each treatment. Each replicationwas required 1500 g of pellet mixture. The produced pellets were analysed for chemical and physical quality. Laboratory analysis included chemical quality tests such as proximate analysis and gross energy. Then, the physical quality tests included bulk density, pile density, pellet durability index (PDI), modulus of uniformity, modulus of fineness, floatability test, and water resistance test. The data obtained were analyzed using the one-way ANOVA method with a significance value of 5%. If significant results were obtained, then proceed with the Duncan's test. The results showed that the different types of binder used in fermented chicken excreta-based pellets did not give a numerical difference in the terms of dry matter content, organic matter, crude fat, crude fiber, and gross energy. Pellets with wheat flour binder had the highest crude protein content. The binder differences also did not show significant differences in physical quality, including pellet measurements, bulk density, pile density, pellet durability index, modulus of uniformity, modulus of fineness, and water resistance. The type of binder did affect the floatability test of the pellets, however wheat flour binder providing the best floatability value. This study recommended wheat flour as binder to apply in pellet production based on fermented poultry manure.

Keywords: binder, poultry manure, pellet quality, unconventional feedstuff.