

EFEK PENYIMPANAN PELET BERBASIS BAHAN PAKAN TUNGGAL TERHADAP KUALITAS FISIK, KIMIA, DAN MIKROBIOLOGI

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INTISARI

Penelitian ini bertujuan untuk mengetahui kualitas fisik, kimia, dan mikrobiologi enam macam pelet berbasis bahan pakan tunggal yang telah disimpan selama 6 bulan. Bahan pakan yang digunakan untuk pembuatan pelet yaitu lamtoro, kaliandra, dedak, sorgum, ampas tahu, dan bungkil kedelai. Setiap bahan pakan diproduksi menjadi pelet sebanyak 3 kali sebagai ulangan dengan menambahkan tepung tapioka sebagai bahan pengikat sebanyak 8% dari berat adonan total. Setiap ulangan menggunakan total 0,6 kg adonan pelet. Pelet disimpan selama 6 bulan dalam karung plastik. Setiap bulan dilakukan uji fisik yang meliputi warna, tekstur, dan kontaminan. Pada akhir bulan ke-6 dilakukan uji berat jenis, pelet *durability index*, kerapatan tumpukan, kerapatan pemadatan tumpukan, *modulus of uniformity*, dan *modulus of fineness*. Uji kimia dilakukan melalui analisis proksimat dari setiap bahan pakan. Uji mikrobiologi (perhitungan koloni bakteri *Escherichia coli*, *Salmonella* sp., kapang, dan ragi) dilakukan berdasarkan metode total plate count. Analisis deskriptif digunakan untuk data uji fisik dan mikrobiologi, sedangkan untuk data uji kimia dianalisis statistik menggunakan *one way anova*. Secara umum, pelet dari bahan kaliandra dan bungkil kedelai bisa disimpan selama empat bulan. Kedua pelet tersebut terdapat perubahan warna dan tekstur saat penyimpanan. Kontaminasi kutu terjadi pada pelet bungkil kedelai, sedangkan pelet kaliandra mengalami kontaminasi ragi dan kapang. Semua pelet yang dibuat memiliki nilai PDI lebih dari 90% sehingga termasuk dalam kualitas yang baik. Perbedaan jenis bahan pakan menunjukkan pengaruh yang nyata terhadap kandungan nutrisi pelet. Secara mikrobiologi, pelet dari bahan kaliandra dan bungkil kedelai memiliki cemaran dari semua parameter.

Kata kunci: Kualitas fisik, Kualitas kimia, Kualitas mikrobiologi, Pelet, Bahan pakan tunggal, Penyimpanan

EFFECT OF STORAGE OF SINGLE FEED INGREDIENT-BASED PELLETS ON PHYSICAL, CHEMICAL, AND MICROBIOLOGICAL QUALITY

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ABSTRACT

This research aims to determine the physical, chemical, and microbiological qualities of six types of pellets based on single feed ingredients that have been stored for 6 months. The feed ingredients used for pellet production are *Leucaena* leaves, *Calliandra* leaves, rice bran, sorghum, tofu dregs, and soybean meal. Each feed ingredient was processed into pellets three times as replicates, with the addition of tapioca flour as a binding agent at 8% of the total dough weight. Each replicate used a total of 0.6 kg of pellet dough. The pellets were stored for 6 months in plastic bags. Physical tests, including color, texture, and contaminants, were conducted every month. At the end of the 6th month, tests were conducted on bulk density, pellet durability index, stack density, stack compaction density, modulus of uniformity, and modulus of fineness. Chemical analysis was performed through proximate analysis of each feed ingredient. Microbiological tests (counting colonies of *Escherichia coli*, *Salmonella* sp., mold, and yeast) were conducted using the total plate count method. Descriptive analysis was used for physical and microbiological test data, while one-way ANOVA was employed for statistical analysis of chemical test data. In general, pellets made from *kaliandra* and soybean meal can be stored for up to four months. Both types of pellets showed changes in color and texture during storage. Tofu dregs pellets were contaminated with mites, while *kaliandra* pellets experienced contamination from yeast and mold. All pellets produced had a pellet durability index (PDI) of more than 90%, indicating good quality. The differences in feed ingredients showed a significant influence on the nutrient content of the pellets. Microbiologically, pellets made from *calliandra* and soybean meal were contaminated in all parameters.

Keywords: Physical quality, Chemical quality, Microbiology quality, Pellet, Single feed ingredients, storage.