

**Devi Putri Anggraeni.** NPM 210331100047. Pemanfaatan Limbah Cangkang Telur dan Remahan Roti Menjadi Pakan Ternak Ayam pada O'Ndut *Bakery*. Di bawah Bimbingan **Dr. Millatul Ulya, S. TP., M.T** dan **Dr. Supriyanto, S.TP., M.P.**

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### **ABSTRAK**

Industri *bakery* menghasilkan limbah padat berupa cangkang telur dan remahan roti yang berpotensi mencemari lingkungan apabila tidak dikelola dengan baik. Pemanfaatan limbah sebagai bahan baku pakan ternak merupakan upaya penerapan produksi berkelanjutan. Penelitian ini bertujuan untuk menganalisis karakteristik fisik dan kimia pakan ternak serta menilai kelayakan pengembangan produk pakan ternak di O'Ndut *bakery*. Metode penelitian menggunakan Rancangan Acak Lengkap Faktorial (RALF) dengan dua faktor yaitu variasi tepung cangkang telur (5g, 10g, 15g) dan tepung remahan roti (30 g dan 40g) dengan tiga kali pengulangan. Parameter yang dianalisis meliputi uji tekstur (*hardness*), kadar air, kadar protein, kadar abu, kadar kalsium, serta analisis finansial. Data dianalisis menggunakan ANOVA dua arah dan uji lanjut DMRT pada taraf kepercayaan 95%. Hasil penelitian menunjukkan bahwa variasi tepung cangkang telur berpengaruh nyata terhadap kadar air dengan nilai 3,44%. Pada kadar kalsium variasi tepung cangkang telur memiliki pengaruh nyata dengan nilai 2,67% . Interaksi kedua faktor memberikan pengaruh nyata terhadap tekstur, kadar air, dan kadar kalsium. Pakan ternak yang dihasilkan memiliki kadar air dan abu yang memenuhi SNI pakan ternak serta kandungan kalsium sesuai untuk kebutuhan ayam. Limbah cangkang telur dan remahan roti berpotensi dimanfaatkan sebagai bahan baku pakan ternak ayam yang bernilai gizi tinggi.

**Kata kunci :** Cangkang telur, Limbah *bakery*, Pakan ternak ayam

**Devi Putri Anggraeni.** NPM 210331100047. *Utilisation of Eggshell Waste and Bread Crumbs as Chicken Feed at O'Ndut Bakery. Supervised by Dr. Millatul Ulya, S. TP., M.T and Dr. Supriyanto, S.TP., M.P.*

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### **ABSTRACT**

*The bread industry produces solid waste in the form of eggshells and bread crumbs, which have the potential to pollute the environment if not managed properly. The use of waste as animal feed is an effort to implement sustainable production. This study aims to analyse the physical and chemical characteristics of animal feed and evaluate the feasibility of developing animal feed products at the O'Ndut bread factory. The research method used a completely randomised design (CRFD) with two factors, namely variations in eggshell flour (5g, 10g, 15g) and bread crumb flour (30g and 40g) with three replicates. The parameters analysed included texture test (hardness), moisture content, protein content, ash content, calcium content, and financial analysis. The data were analysed using a two-way ANOVA test and DMRT test at a 95% confidence level. The results showed that the variation in eggshell flour had a significant effect on moisture content with a value of 3.44%. In calcium content, eggshell flour variation also had a significant effect with a value of 2.67%. The interaction of these two factors had a significant effect on texture, moisture content, and calcium content. The resulting animal feed had moisture and ash content that met SNI animal feed standards, as well as calcium content that met chicken requirements. Eggshell waste and bread crumbs have the potential to be utilised as raw materials for high-nutrient chicken feed.*

**Keywords:** Bread waste, Chicken feed, Eggshell