ANALISIS MATEMATIS PENGARUH LAMA WAKTU PERENDAMAN DAN PENGUKUSAN TERHADAP PERUBAHAN KARAKTERISTIK GABAH *PARBOILING* YANG DIHASILKAN

INTISARI

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Beras pratanak adalah beras yang dihasilkan dari gabah yang telah mengalami pematangan parsial melalui tahapan proses perendaman gabah dalam air dan pengukusan dengan uap panas kemudian dikeringkan sebelum digiling. Tujuan dari penelitian ini untuk mempelajari pengaruh lama perendaman dan pengukusan terhadap perubahan karakteristik gabah *parboiling.* Penelitian menggunakan 3 perlakuan perendaman dan perendaman yaitu, perendaman 2, 3, dan 4 jam dengan lama pengukusan 10, 20, dan 30 menit. Parameter yang diukur antara lain : Kadar air, berat satuan partikel, suhu bahan, dan kekerasan. Proses perendaman masing-masing perlakuan ditentukan dan dianalisis dengan menggunakn ANOVA satu arah sedangkan untuk proses pengukusan menggunakan ANOVA dua arah dan Duncan Multiple Range Test (DMRT) pada 0.05 tingkat signifikan. Hasil menunjukkan bahwa kadar air tertinggi ialah pada saat perendaman 4 jam sebesar 31.11 %, berat satuan tertinggi sebesar 1.74 gr/cm^3 dengan kekerasan sebesar 5.93 kgf. Kekerasan bahan semakin kecil selama proses perendaman dan semakin meningkat selama proses pengukusan. Hal ini disebabkan karena adanya proses gelatinisasi.

Kata Kunci: Beras, perendaman, pengukusan dan proses pratanak

MATHEMATICAL ANALYSIS OF PADDY PARBOILING OF CHARACTERISTIC CHANGES ON PADDY SOAKING AND STEAMING TIME VARIABLE

ABSTRACT

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Parboiled rice is a product of grain which has undergone partial ripening through the stages of the grain immersion process in water and steaming with hot steam then dried before grinding. The purpose of this research was to study the effect of soaking and steaming time on changes in the characteristics of parboiling grain. The study used 3 immersion treatments namely, 2, 3, and 4 hours of immersion with steaming lengths of 10, 20, and 30 minutes. Parameters measured include: water content, particle weight, temperature of the material, and hardness. The immersion process of each treatment was determined and analyzed using one-way ANOVA while for the steaming process using two-way ANOVA and Duncan Multiple Range Test (DMRT) at 0.05 significant levels. The results showed that the highest water content was at the 4 hours immersion of 31.11% and the highest unit weight was 1.74 gr/cm3 with a hardness of 5.93 kgf. The hardness analysis on materials will be smaller during the immersion process and will increase during the steaming process. This is due to the gelatinization process.

Keywords: rice, soaking, steaming and parboiled process