

ABSTRAK

PENGARUH LAMA PERENDAMAN GABAH TERHADAP KARAKTERISTIK FISIKOKIMIA DAN ORGANOLEPTIK BERAS PRATANAK

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Penggunaan beras sebagai pangan pokok memiliki kaitan erat dengan peningkatan kadar glukosa darah sehingga diperlukan upaya pengolahan untuk menghasilkan beras dengan karakteristik yang lebih baik. Salah satu metode yang dapat diterapkan adalah proses pratanak (parboiling), yang diketahui mampu memperbaiki mutu fisik, meningkatkan nilai gizi, serta berpotensi menurunkan indeks glikemik. Penelitian ini bertujuan untuk mengetahui pengaruh lama perendaman gabah terhadap karakteristik fisikokimia dan organoleptik beras pratanak serta menentukan lama perendaman yang menghasilkan beras pratanak dengan mutu terbaik. Percobaan dirancang menggunakan pola Rancangan Acak Lengkap (RAL) dengan empat perlakuan, yaitu P0 (tanpa perendaman), P1 (perendaman 3 jam), P2 (perendaman 4 jam), dan P3 (perendaman 5 jam). Variabel yang diukur meliputi penerimaan sensorik organoleptik (warna, aroma, tekstur, dan rasa nasi), kadar air, tingkat kepatahan beras, serta nominansi warna digital. Data dianalisis menggunakan analisis ragam (ANOVA) dan dilanjutkan dengan uji jarak berganda Duncan (DMRT) pada taraf kepercayaan 99%. Hasil penelitian menunjukkan bahwa lama perendaman berpengaruh sangat nyata ($P < 0,01$) terhadap semua variabel kecuali penerimaan terhadap rasa nasi. Perendaman gabah selama 4 hingga 5 jam menghasilkan penerimaan terhadap tingkat kesukaan panelis tertinggi terhadap warna, aroma dan tekstur nasi. Perendaman gabah selama 5 jam menghasilkan tingkat kepatahan beras terendah, yaitu sebesar 10%, dan memenuhi kelas beras premium berdasarkan SNI. Analisis citra warna digital menunjukkan bahwa semakin lama perendaman menyebabkan menurunnya luminansi sehingga warna beras menjadi lebih transparan dan kuning kecokelatan akibat proses gelatinisasi pati dan reaksi pencoklatan non-enzimatis. Berdasarkan hasil penelitian dapat disimpulkan bahwa lama perendaman gabah memberikan pengaruh nyata terhadap karakteristik fisikokimia dan organoleptik beras pratanak. Perendaman selama 4 sampai 5 jam merupakan perlakuan terbaik untuk menghasilkan mutu sensorik yang paling disukai, sedangkan perendaman selama 5 jam paling efektif dalam menurunkan tingkat kepatahan beras.

Kata kunci: beras pratanak, lama perendaman, karakteristik fisikokimia, organoleptik, kadar air, tingkat kepatahan.

1. Penulis
2. Pembimbing

ABSTRACT

THE LONG PERIOD OF GRAIN SOAKING TO THE PHYSICOCHEMICAL AND ORGANOLEPTIC CHARACTERISTICS OF PRETANAK RICE

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Rice, as a staple food, is closely associated with increased blood glucose levels, making it necessary to develop processing methods that produce rice with improved quality characteristics. One such method is the parboiling process, which has been reported to improve the physical quality, enhance the nutritional value, and potentially reduce the glycemic index of rice. This study aimed to determine the effect of paddy soaking duration on the physicochemical and organoleptic characteristics of parboiled rice and to identify the optimum soaking duration for producing the best quality parboiled rice.

The experiment was arranged in a Completely Randomized Design (CRD) consisting of four treatments: P0 (without soaking), P1 (3-hour soaking), P2 (4-hour soaking), and P3 (5-hour soaking). The observed parameters included organoleptic acceptance (color, aroma, texture, and taste of cooked rice), moisture content, percentage of broken rice, and digital color luminance. The data were analyzed using analysis of variance (ANOVA), followed by Duncan's Multiple Range Test (DMRT) at a 99% confidence level.

The results showed that soaking duration had a highly significant effect ($P < 0.01$) on moisture content, broken rice percentage, digital color luminance, and panelists' preference for the color, aroma, and texture of cooked rice, but had no significant effect on taste preference. Paddy soaked for 4–5 hours produced the highest panelist acceptance for color, aroma, and texture. A soaking duration of 5 hours resulted in the lowest percentage of broken rice (10%), meeting the Indonesian National Standard (SNI) requirements for premium rice. Digital image analysis indicated that longer soaking duration decreased the luminance value, resulting in a more translucent and yellowish-brown appearance of the rice due to starch gelatinization and non-enzymatic browning reactions.

In conclusion, paddy soaking duration significantly affected the physicochemical and organoleptic characteristics of parboiled rice. Soaking for 4–5 hours was the optimum treatment for achieving the highest sensory acceptance, while soaking for 5 hours was the most effective treatment in reducing the percentage of broken rice.

Keywords: broken rice percentage, moisture content, organoleptic properties, parboiled rice, physicochemical characteristics, soaking duration.

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