INTISARI

ANALISIS MATEMATIS PENGARUH VARIASI JENIS DAN
KADAR AIR TERHADAP KARAKTERISTIK FISIK DAN MEKANIS
BERAS (*Oryza sativa* L.)

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Beras (Oryza Sativa L.) merupakan sumber energi utama bagi tubuh dan menjadikannya sebagai makanan pokok yang banyak dikonsumsi oleh masyarakat Indonesia. Dalam memenuhi kebutuhan beras yang cukup tinggi maka produksi beras harus dilakukan dengan baik agar hasil yang diperoleh memiliki kualitas dan kuantitas yang tinggi. Maka dari itu, untuk menghindari kerusakan fisik maupun mekanis pada beras harus dilakukan penanganan yang tepat pada proses penanganan pascapanen. Salah satunya dengan memperhatikan kandungan kadar air dalam beras itu sendiri. Tujuan dari penelitian ini yaitu mengetahui pengaruh variasi jenis *Javanica*, *Japonica, Indica* dan kandungan kadar air 9%, 14%, dan 19% terhadap sifat fisik dan mekanis beras. Sifat fisik dan mekanis yang dikaji yaitu dimensi (panjang, lebar, dan tebal), *mean geometric diameter*, *sphericity*, berat 1000 butir, densitas (*apparent* dan *tapped density*), berat satuan partikel, porositas (*apparent* dan *tapped*), warna (*lightness* dan *whiteness index*), *terminal velocity*, kekerasan, *angle of internal friction*, dan *angle of wall friction*. Berdarkan hasil anova dua arah diperoleh bahwa jenis dan kandungan kadar air mempengaruhi nilai semua parameter sifat fisik dan mekanis beras. Sedangkan interaksi antara kedua variasi mempengaruhi nilai dimensi (panjang), densitas (*apparent* dan *tapped density*) porositas (*apparent* dan *tapped*), warna (*lightness*), kekerasan, dan *angle of wall friction*.

Kata kunci: beras, jenis, kandungan kadar air, sifat fisik, dan sifat mekanis.

ABSTRACT

MATHEMATIC ANALYSIS OF THE EFFECT OF VARIATION OF TYPES AND MOISTURE CONTENT ON THE PHYSICAL AND MECHANICAL CHARACTERISTICS OF RICE (*Oryza sativa* L.)

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Rice (*Oryza sativa* L.) is the main source of energy for the body and makes it a staple food consumed by many Indonesians. In meeting the high demand for rice, rice production must be carried out properly so that the results obtained are of high quality and quantity. Therefore, to avoid physical and mechanical damage to rice, proper handling must be carried out in the post-harvest handling process. One of them is by paying attention to the water content in the rice itself. The purpose of this study was to determine the effect of variations in types of *Javanica, Japonica, Indica* and moisture content of 9%, 14%, and 19% on the physical and mechanical properties of rice. The physical and mechanical properties studied are dimensions (length, width, and thickness), mean geometric diameter, sphericity, 1000 grain weight, density (apparent and tapped density), particle unit weight, porosity (apparent and tapped), color (lightness and whiteness index), terminal velocity, hardness, angle of internal friction, and angle of wall friction. Based on the results of the two-way anova, it was found that the type and content of water content affected the values of all parameters of the physical and mechanical properties of rice. Meanwhile, the interaction between the two variations affects the dimension (length) value, apparent and tapped density, apparent and tapped, color (lightness), hardness, and angle of wall friction.

key words: rice, type, moisture content, physical properties and mechanical properties.