



## PENGARUH FERMENTASI TEPUNG BIJI NANGKA DENGAN RHISOPUS OLIGOSPORUS TERHADAP PERUBAHAN KANDUNGAN SERAT KASAR, KALSIMUM, FOSFOR DAN ENERGI

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**Abstrak.** Fermentasi merupakan upaya untuk meningkatkan nilai nutrient dengan bantuan mikroorganisme, salah satunya dengan *Rhizopus oligosporus* untuk mengetahui perubahan kandungan Serat Kasar, Kalsium, Fosfor dan Energi dari fermentasi biji nangka dengan *Rhizopus oligosporus*. Penelitian ini menggunakan metode eksperimental desain dengan Rancangan Acak Lengkap (RAL) pola tersarang, Faktor A Dosis yaitu D1 (1 gram), D2 (2 gram) dan D3 (3 gram) dan faktor B yaitu lama fermentasi W1 (24 jam), W2 (48 jam), W3 (72 jam), dengan 3 ulangan. Hasil perhitungan rata-rata perubahan serat kasar dari masing-masing perlakuan menunjukkan rata-rata persentase perubahan kandungan serat kasar tepung biji nangka selama fermentasi terjadi penurunan kadar serat kasar berkisar 33,58 – 40,18%. Hasil analisis sidik ragam menunjukkan berpengaruh berbeda nyata ( $P < 0.05$ ) terhadap perubahan kandungan serat kasar. Hasil penelitian rata-rata perubahan kalsium dari penelitian menunjukkan rata-rata persentase perubahan kandungan kalsium tepung biji nangka selama fermentasi terjadi peningkatan kandungan kalsium. Hasil analisis ragam menunjukkan pengaruh berbeda nyata ( $P < 0.05$ ) terhadap perubahan kandungan kalsium berkisar 17,17 – 45,45%. Data hasil penelitian menunjukkan rata-rata persentase perubahan kandungan fosfor tepung biji nangka yang difermentasikan berkisar antara 14,7 – 30,33%. Hasil analisis ragam menunjukkan berbeda nyata ( $P < 0.05$ ) terhadap perubahan kandungan fosfor. Data hasil penelitian menunjukkan rata-rata persentase perubahan kandungan energi tepung biji nangka yang difermentasi berkisar 3,70 – 26,04%. Hasil Analisis ragam menunjukkan berbeda nyata ( $P < 0.05$ ). Berdasarkan hasil penelitian ini disimpulkan bahwa fermentasi tepung biji nangka dengan *Rhizopus oligosporus* dengan faktor D3W3 merupakan yang terbaik.

**Kata kunci:** Tepung Biji Nangka, *Rhizopus Oligosporus*, Serat Kasar, Kalsium, Fosfor, Energi

**Abstract.** Fermentation is an effort to increase nutrient value with the help of microorganisms, one of which is *Rhizopus oligosporus* to determine changes in crude fiber, calcium, phosphorus and energy content from fermenting jackfruit seeds with *Rhizopus oligosporus*. This research uses an experimental design method with a completely randomized design (CRD) with a nested pattern, Factor A Dosage, namely D1 (1 gram), D2 (2 grams) and D3 (3 grams) and factor B, namely fermentation time W1 (24 hours), W2 (48 hours), W3 (72 hours), with 3 repetitions. The results of calculating the average change in crude fiber from each treatment showed that the average percentage change in crude fiber content of jackfruit seed flour during fermentation resulted in a decrease in crude fiber content ranging from 33.58 – 40.18%. The results of analysis of variance showed a significantly different effect ( $P < 0.05$ ) on changes in crude fiber content. The results of the research on the average change in calcium from the research showed that the average percentage change in the calcium content of jackfruit seed flour during fermentation was an increase in the calcium content. The results of analysis of variance showed a significantly different effect ( $P < 0.05$ ) on changes in calcium content ranging from 17.17 – 45.45%. Research data shows that the average percentage change in phosphorus content of fermented jackfruit seed flour ranges from 14.7 – 30.33%. The results of analysis of variance showed significant differences ( $P < 0.05$ ) in changes in phosphorus content. Research data shows that the average percentage change in energy content of fermented jackfruit seed flour ranges from 3.70 – 26.04%. The results of the analysis of variance showed that they were significantly different



( $P < 0.05$ ). Based on the results of this research, it was concluded that fermentation of jackfruit seed flour with *Rhizopus oligosporus* with the D3W3 factor was the best.

**Keyword:** Jackfruit Seed Flour, *Rhizopus Oligosporus*, Crude Fiber, Calcium, Phosphorus, Energy