

**BREAD ROLLS BEBAS GLUTEN BERBASIS TEPUNG
SORGUM DENGAN ISIAN RAJUNGAN SEBAGAI MAKANAN
FUNGSIONAL ANAK DENGAN AUTISM SPECTRUM
DISORDER (ASD) BERISIKO EPILEPSI**

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Abstrak

Autism Spectrum Disorder (ASD) merupakan gangguan perkembangan saraf yang sering disertai pola makan selektif dan risiko epilepsi. Tepung sorgum mengandung zinc yang berperan dalam fungsi saraf, sedangkan rajungan mengandung asam lemak omega-3 yang mendukung kesehatan otak. Kombinasi kedua bahan tersebut dapat dikembangkan menjadi *bread rolls* bebas gluten sebagai makanan fungsional bagi anak ASD berisiko epilepsi. Penelitian ini bertujuan untuk mengetahui pengaruh kombinasi protein hewani terhadap kadar zinc dan omega-3 *bread rolls* bebas gluten berbasis tepung sorgum. Penelitian eksperimental ini menggunakan Rancangan Acak Lengkap (RAL) dengan tiga formulasi dan dua kali ulangan. Perlakuan yang diterapkan adalah proporsi ayam organik dan daging rajungan yaitu F1 (100%:0%), F2 (50%:50%), dan F3 (0%:100%). Analisis kadar zinc menggunakan metode ICP-OES dan kadar omega-3 menggunakan GC-FID. Data dianalisis menggunakan uji ANOVA dan DMRT. Hasil menunjukkan bahwa kombinasi protein hewani berpengaruh terhadap kadar zinc ($p=0,025$) dan omega-3 ($p=0,000$). Formula terbaik adalah F2 dengan kadar zinc 0,73 mg dan omega-3 68,3 mg per 60 gram sajian. Konsumsi dua takaran saji per hari disarankan untuk mendukung kebutuhan gizi anak ASD berisiko epilepsi.

Kata Kunci: *Autism_Spectrum_Disorder*, Bebas_Gluten, Makanan_Fungsional, Rajungan, Tepung_Sorgum

GLUTEN-FREE SORGHUM FLOUR BREAD ROLLS WITH CRAB FILLING AS A FUNCTIONAL FOOD FOR CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD) AT RISK OF EPILEPSY

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Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder with selective eating behaviors and increased risk of epilepsy. Sorghum flour contains zinc, which plays an important role in neurological function, while blue swimming crab (BSC) meat contains omega-3 fatty acids that support brain health. The combination of these ingredients can be developed into gluten-free bread rolls as a functional food for children with ASD. This study aimed to determine the effects of animal protein combinations on the zinc and omega-3 content of bread rolls. This experimental study used Completely Randomized Design (CRD) with three formulations and two replications. The treatments consisted of different proportions of organic chicken dan BSC : F1 (90%:100%), F2 (50%:50%), and F3 (0%:100%). Zinc was analyzed using ICP-OES, and omega-3 using GC-FID. Data were analyzed using ANOVA and DMRT. Results showed that animal protein combinations have a significant effect on zinc content ($p=0.025$) and omega-3 content ($p=0.000$). The best formulation was F2, containing 0.73 mg of zinc and 68.3 mg of omega-3 per 60 g serving. Consumption of two servings per day is recommended to support the nutritional needs of children with ASD at risk of epilepsy.

Keywords: Autism_Spectrum_Disorder, Blue_Swimming_Crab, Functional_Food, Gluten_Free, Sorghum_Flour