

THE EFFECT OF THE SUBSTITUTION OF RED DRAGON FRUIT PEEL FLOUR AND SOYBEAN FLOUR ON THE QUALITY OF COOKIES

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ABSTRACT

This study aimed to determine the effect of substituting wheat flour with red dragon fruit peel flour and soybean flour on the physical, chemical, and sensory characteristics of cookies. The study employed a Completely Randomized Design (CRD) consisting of six formulations: P0 (100% wheat flour), P1 (60% wheat flour and 40% red dragon fruit peel flour), P2 (60% wheat flour and 40% soybean flour), P3 (60% wheat flour, 30% red dragon fruit peel flour, and 10% soybean flour), P4 (60% wheat flour, 20% red dragon fruit peel flour, and 20% soybean flour), and P5 (60% wheat flour, 10% red dragon fruit peel flour, and 30% soybean flour). Each treatment was replicated in three independent batches, resulting in a total of 18 experimental units. The data were analyzed using Analysis of Variance followed by Duncan's Multiple Range Test (DMRT) at a 5% significance level. The results showed that the treatments had a significant affect ($p < 0.05$) antioxidant activity, protein content, crude fiber content, moisture content, ash content, hardness, instrumental color (L^* , a^* , and b^*), hedonic color, hedonic taste, and the hedonic quality of color, aroma, and taste. In contrast, hedonic aroma, hedonic texture, and the hedonic quality of texture were not significantly different ($p > 0.05$). Overall, the substitution of red dragon fruit peel flour and soybean flour influenced the physical, chemical, and selected sensory characteristics of cookies.

Keywords: cookies, red dragon fruit peel flour, soybean flour, phsycal characteristics, chemical characteristics, organoleptic properties.