

Nutritional and Sensory Analysis of Biscuit for Pregnancy with Mung Bean Flour (*Vigna radiata*) and Kidney Bean Flour (*Phaseolus vulgaris*) Substitution

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ABSTRACT

Background: Red beans and mung beans are foods rich in nutrients such as high protein and good for nutrition for pregnancy. Biscuits as supplementary is a preventive action for pregnant women with Chronic Energy Deficiency (KEK.). Quality of biscuit can be seen from the acceptability and nutrient content.

Objective: Analyzing nutrition content, sensory, and best treatment in biscuits which contains mung bean flour and kidney bean flour as substitution ingredients for pregnant woman

Method: The experimental study with by using Completely Randomized Design with proportion of wheat flour:mung bean flour:kidney bean flour, namely F0 (52,6%:0:0); F1: (26,3%:26,3%:0); F2: (26,3%:0:26,3%); F3: (19,7%:19,7%:13,1%). Ash and water content was measured by using Oven method, fat using Soxhlet methode, protein using Kjeldahl method, carbohydrate using by difference method, sensory with 4 scales including color, taste, aroma, and texture. Determination of the best formula using DeGarmo method. Statistical test using One Way ANOVA and Kruskal Wallis Test.

Result: There is an effect of biscuit substitution with red bean flour and mung bean on energy, carbohydrates, protein, ash content, and sensory test ($p < 0.05$) but no effect on fat and water content (p value $> 0,05$). Substitution of red beans and mung beans flour produces a brown to greenish brown color, not unpleasant aroma, very hard to crunchy texture, and not sweet to sweet taste on the biscuits. Biscuit with the best treatment were F3 with 348kcal energy, 10,29% protein, 1,78% fat, 8,88% water content, 3,21% ash content. F3 biscuits meet only 89,4% energy, 123% carbohydrates, 84,7% protein, and 17,3% fat from 10% of pregnant women's needs from supplementary food.

Conclusion: Biscuits with mung bean flour and kidney bean flour substitution effect the energy, carbohydrate, protein, ash content, and sensory test. F3 biscuits turned out to be biscuits with the best treatment but does not reach 10% of nutritional needs of pregnant woman from supplementary food.

Keywords: Mung bean flour, kidney bean flour, pregnancy, biscuit.

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