

## Penurunan *Glycemic Index* dan Peningkatan Kualitas Kimia Sensoris Bakso Kambing dengan Substitusi *Filler* Tepung Tapioka Menggunakan Tepung Kacang Hijau

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### INTISARI

Penelitian ini bertujuan untuk mengetahui penurunan *Glycemic Index* dan peningkatan komposisi kimia dan kualitas sensoris bakso kambing dengan substitusi *filler* tepung tapioka menggunakan tepung kacang hijau. Bahan pembuatan bakso kambing meliputi daging kambing, tepung tapioka, tepung kacang hijau, STPP, bawang putih, merica, garam, dan es batu. Perlakuan dalam penelitian adalah substitusi tepung tapioka dengan tepung kacang hijau dengan level 0% sebagai kontrol, 25, 50, 75, dan 100% dengan ulangan sebanyak empat kali setiap perlakuan. Parameter yang diamati yaitu uji komposisi kimia yang meliputi kadar air, lemak, protein, karbohidrat dan *glycemic index estimation* dan uji kualitas sensoris bakso yang meliputi warna, aroma, rasa, dan tekstur. Analisis data uji komposisi kimia menggunakan analisis variansi Rancangan Acak Lengkap (RAL) pola searah dilanjutkan dengan uji *Duncans New Multiple Range Test* (DMRT). Data kualitas sensoris dianalisis menggunakan uji *Kruskal-Wallis Test* dilanjutkan dengan uji *Mann-Whitney*. Substitusi tepung kacang hijau memberikan pengaruh yang signifikan ( $P < 0,05$ ) pada kadar air, protein, dan karbohidrat. Kadar air secara berurutan sebesar 65,77; 64,68; 64,85; 75,25; dan 75,6%, kadar protein secara berurutan sebesar, dan kadar karbohidrat secara berurutan sebesar 9,17; 8,41; 7,74; 7,01; dan 6,23%. *Glycemic index estimation* secara berurutan sebesar 59,73; 54,40; 48,02; 40,28; dan 30,67. Substitusi tepung kacang hijau memberikan pengaruh yang signifikan ( $P < 0,05$ ) pada aroma, rasa, dan tekstur. Aroma secara berurutan sebesar 3,73; 3,80; 3,87; 3,73; 3,67. Tekstur secara berurutan sebesar 3,00; 3,87; 4,33; 3,53; dan 3,40. Rasa secara berurutan sebesar 3,60; 3,87; 4,20; 3,53; dan 3,40. Hasil penelitian adalah substitusi tepung tapioka dengan tepung kacang hijau dengan level 100% dapat meningkatkan kadar protein, menurunkan kadar air, karbohidrat, dan *glycemic index estimation* serta dapat meningkatkan rasa, tekstur, dan aroma pada bakso daging kambing.

**Kata kunci:** Bakso, Daging Kambing, Tepung Tapioka, Tepung Kacang Hijau, Komposisi Kimia, Kualitas Sensoris.

**Decreased Glycemic Index and Improved Chemical Sensory Quality of Goat Meatballs Using Filler Substitution of Tapioca Flour with Mung Beans Flour**

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**ABSTRACT**

This study was aimed to determine the decreased glycemic index and improved chemical composition and sensory quality of goat meatballs using filler substitution of tapioca flour with mung beans flour. The ingredients used for making goat meatballs include goat meat, tapioca flour, mung bean flour, STPP, garlic, pepper, salt, and ice cubes. The treatment in the study was the substitution of tapioca flour with mung bean flour in the level of 0% as a control, 25, 50, 75, and 100% with four replications of each treatment. The parameters observed were chemical composition test which included moisture content, fat, protein, carbohydrate and glycemic index estimation and sensory quality test of meatballs which included color, aroma, taste, and texture. The chemical composition test data were analyzed using the analysis of variance of a completely randomized design (RAL) unidirectional pattern followed by the Duncans New Multiple Range Test (DMRT). Sensory quality data were analyzed using the Kruskal-Wallis Test followed by the Mann-Whitney test. The substitution of mung bean flour had a significant effect ( $P < 0.05$ ) on moisture, protein, and carbohydrate content. Moisture content was 65.77; 64.68; 64.85; 75.25; and 75.6%, protein content was 9.17; 8.41; 7.74; 7.01; and 6.23%, respectively. Glycemic index estimation was 59.73; 54.40; 48.02; 40.28; and 30.67, respectively. Substitution of mung bean flour gave significant effect ( $P < 0.05$ ) on aroma, flavor, and texture. Aroma was sequentially 3.73; 3.80; 3.87; 3.73; 3.67. Texture was 3.00; 3.87; 4.33; 3.53; and 3.40, respectively. Flavor was sequentially 3.60; 3.87; 4.20; 3.53; and 3.40. The results of the study are the substitution of tapioca flour with mung bean flour in a ratio of 0: 100 can increase protein content, reduce water content, carbohydrates, and glycemic index estimation and can improve the taste, texture, and aroma of mutton meatballs.

**Keywords:** Meatballs, Goat Meat, Tapioca Flour, Mung Beans Flour, Chemical Composition, Sensoris Quality.