

PENGARUH SUBSTITUSI TEPUNG TAPIOKA DENGAN TEPUNG KACANG MERAH (*Phaseolus vulgaris* L) TERHADAP KUALITAS FISIK DAN MIKROSTRUKTUR BAKSO AYAM

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INTISARI

Produk olahan daging seperti bakso kini semakin banyak diminati oleh masyarakat luas. Tepung tapioka sebagai *filler* bakso memiliki kandungan indeks glikemik tinggi, diperlukan pengganti *filler* bakso yang lebih sehat dan bergizi tinggi seperti tepung kacang merah. Penelitian ini bertujuan untuk mengetahui substitusi tepung kacang merah (*Phaseolus vulgaris* L) terhadap kualitas fisik dan mikrostruktur bakso daging ayam. Bahan pembuatan bakso dalam penelitian ini adalah daging ayam, air es, tepung tapioka, tepung kacang merah, bawang putih, garam, merica, dan *sodium tripolyphosphat* (STPP). Tepung kacang merah dipilih karena rendah glikemik indeks. Perbandingan tepung kacang merah dengan tepung tapioka adalah P0 (0:100), P1 (25:75), P2 (50:50), P3 (75:25), P4 (100:0) dengan setiap perlakuan terdiri atas lima kali pengulangan. Parameter yang diamati pada penelitian ini meliputi kualitas fisik berupa pH, daya ikat air, dan keempukan serta dilakukan uji kualitas mikrostruktur terhadap bakso yang dihasilkan. Data yang diperoleh dari uji kualitas fisik dianalisis menggunakan analisa Rancangan Acak Lengkap (RAL) Pola Searah (*One Way Anova*). Preparat mikrostruktur bakso daging ayam diambil dengan metode pewarnaan menggunakan pewarna hemaktosilin-eosin (HE), kemudian diamati menggunakan mikroskop perbesaran 400x selanjutnya dilakukan analisa secara deskriptif. Hasil penelitian menunjukkan bahwa substitusi tepung tapioka : tepung kacang merah dengan perbandingan 100:0, 75:25, 50:50, 25:75, 0:100 memberikan pengaruh nyata ($P < 0,05$) terhadap daya ikat air (DIA) bakso berturut-turut yaitu 50,05%, 53,28%, 55,26%, 56,20%, dan 57,00%. Hasil penelitian tidak berpengaruh nyata ($P > 0,05$) terhadap pH dan keempukan dalam bakso. Mikrostruktur bakso ayam dengan substitusi tepung kacang merah memiliki struktur yang lebih baik dibandingkan dengan bakso tanpa substitusi tepung kacang merah. Penelitian ini menunjukkan bahwa substitusi tepung tapioka dengan tepung kacang merah P4 (100:0) memiliki hasil terbaik pada uji kualitas fisik dan mikrostruktur.

Kata Kunci : Bakso ayam, Tepung kacang merah, *Phaseolus vulgaris* L., Kualitas fisik, Mikrostruktur.

**THE EFFECT OF RED BEAN FLOUR (*Phaseolus vulgaris* L)
AS A SUBSTITUTION FILLER OF TAPIOCA FLOUR ON
PHYSICAL AND MICROSTRUCTURAL QUALITIES OF
CHICKEN MEATBALL**

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ABSTRACT

Processed meat products such as meatballs are now increasingly in demand by the wider community. Tapioca flour as a meatball filler has a high glycemic index content, a healthier and highly nutritious meatball filler substitute such as red bean flour is needed. This study aims to determine the substitution of red bean flour (*Phaseolus vulgaris* L) on the physical and microstructural qualities of chicken meatballs. The ingredients for making meatballs in this study were chicken meat, ice water, tapioca flour, red bean flour, garlic, salt, pepper, and sodium tripolyphosphat (STPP). Red bean flour was chosen because of its low glycemic index. The ratio of red bean flour to tapioca flour was P0 (0:100), P1 (25:75), P2 (50:50), P3 (75:25), P4 (100:0) with each treatment consisting of five replication. Parameters observed in this study included physical quality in the form of pH, water holding capacity, and tenderness and microstructural quality tests were carried out on the meatballs produced. The data obtained from the physical quality test were analyzed using a Completely Randomized Design (CRD) analysis in one direction (One Way Anova). Microstructure preparations of chicken meatballs were taken using the staining method using hemactocillin-eosin (HE) dyes, then observed using a 400x magnification microscope and then analyzed descriptively. The results showed that the substitution of tapioca flour: kidney bean flour with a ratio of 100:0, 75:25, 50:50, 25:75, 0:100 had a significant effect ($P < 0.05$) on the water holding capacity (DIA) of the meatballs. respectively 50.05%, 53.28%, 55.26%, 56.20% and 57.00%. The results of the study had no significant effect ($P > 0.05$) on the pH and tenderness of the meatballs. The microstructure of chicken meatballs with red bean flour substitution had a better structure than meatballs without red bean flour substitution. This study showed that the substitution of tapioca flour with red bean flour P4 (100:0) had the best results on physical and microstructural qualities tests.

Keywords : Chicken meatball, Red bean flour, *Phaseolus vulgaris* L., Physical quality, Microstructure.