

## PENGARUH SUBSTITUSI TEPUNG TAPIOKA DENGAN TEPUNG KENTANG (*Solanum tuberosum* L.) TERHADAP KUALITAS FISIK DAN MIKROSTRUKTUR BAKSO DAGING AYAM

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### INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh substitusi tepung tapioka dengan tepung kentang terhadap kualitas fisik dan mikrostruktur pada bakso daging ayam. Materi yang digunakan adalah daging ayam broiler, tepung tapioka, tepung kentang, dan bumbu-bumbu. Perlakuan dalam penelitian ini adalah substitusi tepung kentang dengan level 0, 25, 50, 75, dan 100% dan dilakukan sebanyak tiga replikasi. Parameter yang diuji yaitu kualitas fisik (pH, daya ikat air, profil tekstur) dan mikrostruktur. Data kualitas fisik dianalisis dengan analisis variansi rancangan acak lengkap pola searah dan apabila terdapat perbedaan signifikan dilanjut dengan uji DMRT. Mikrostruktur bakso dilakukan dengan mikroskop kemudian dianalisis secara deskriptif. Hasil analisis statistik menunjukkan bahwa substitusi tepung kentang pada bakso daging ayam memberikan perbedaan nyata ( $P < 0,05$ ) terhadap kualitas fisik (daya ikat air dan tekstur) dan mikrostruktur. Nilai pH yaitu  $6,54 \pm 1,08$ ;  $6,51 \pm 0,12$ ;  $6,48 \pm 0,13$ ;  $6,46 \pm 0,10$ ; dan  $6,44 \pm 0,06$ . Nilai daya ikat air yaitu  $59,98 \pm 1,99\%$ ;  $65,45 \pm 1,11$ ;  $68,26 \pm 0,42$ ;  $69,30 \pm 0,20$ ; dan  $73,14 \pm 2,11$ . Nilai *hardness* yaitu  $6,7 \pm 0,80$ ;  $4,7 \pm 0,66$ ;  $4,01 \pm 0,11$ ;  $3,2 \pm 0,27$ ; dan  $2,49 \pm 0,19$ . Nilai *springiness* yaitu  $94,60 \pm 0,87$ ;  $93,07 \pm 0,50$ ;  $86,24 \pm 3,45$ ;  $86,74 \pm 2,15$ ; dan  $75,95 \pm 1,06$ . Nilai *cohesiveness* yaitu  $0,78 \pm 0,01$ ;  $0,75 \pm 0,01$ ;  $0,71 \pm 0,91$ ;  $0,66 \pm 0,19$ ; dan  $0,58 \pm 0,01$ . Nilai *gumminess* yaitu  $432,85 \pm 50,31$ ;  $372,78 \pm 41,36$ ;  $327,47 \pm 34,48$ ;  $195,48 \pm 27,68$ ; dan  $151,00 \pm 14,23$ . Nilai *chewiness* yaitu  $476,65 \pm 62,93$ ;  $319,16 \pm 64,11$ ;  $274,64 \pm 28,15$ ;  $181,44 \pm 10,80$ ; dan  $145,62 \pm 49,84$ . Hasil mikrostruktur menghasilkan struktur bakso daging ayam yang homogenitas rendah dan tekstur cenderung rapuh. Berdasarkan penelitian ini, substitusi tepung kentang pada bakso daging ayam tidak mempengaruhi nilai pH, meningkatkan nilai daya ikat air, menurunkan nilai profil tekstur, serta mikrostruktur bakso mengalami penurunan kualitas. Penelitian ini dikatakan baik pada level 0% hingga 25% dengan tidak menambah atau merubah kualitas fisik.

Kata kunci : Bakso daging ayam, Tepung kentang, Kualitas fisik, Mikrostruktur.

## THE EFFECT OF TAPIOCA FLOUR SUBSTITUTION WITH POTATO FLOUR (*Solanum tuberosum* L.) ON THE PHYSICAL QUALITY AND MICROSTRUCTURE OF CHICKEN MEATBALLS

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### ABSTRACT

This research to determine the effect of tapioca flour substitution with potato flour on the physical quality and microstructure of chicken meatballs. The material used were broiler chicken meat, tapioca flour, potato flour, and spices. The treatment in this study was potato flour substitution with levels of 0, 25, 50, 75, 100% and was carried out in three replications. The parameters tested were physical quality (pH, water holding capacity, texture profile) and microstructure. Physical quality data were analyzed by analysis of variance of a complete randomized design in a one way pattern and if there was a significant difference, it was a continued with the Duncan's New Multiple Range Test. The microstructure of the meatballs was carried out using a microscope and then analyzed descriptively. The result of statistical analysis showed that the substitution of potato in chicken meatballs gave a significant difference ( $P < 0,05$ ) to the physical quality (water holding capacity and texture profile) and microstructure. The pH values were  $6,54 \pm 1,08$ ;  $6,51 \pm 0,12$ ;  $6,48 \pm 0,13$ ;  $6,46 \pm 0,10$ ; dan  $6,44 \pm 0,06$ . The water holding capacity values were  $59,98 \pm 1,99$ ;  $65,45 \pm 1,11$ ;  $68,26 \pm 0,42$ ;  $69,30 \pm 0,20$ ; dan  $73,14 \pm 2,11$ . The hardness values were  $6,7 \pm 0,80$ ;  $4,7 \pm 0,66$ ;  $4,01 \pm 0,11$ ;  $3,2 \pm 0,27$ ; dan  $2,49 \pm 0,19$ . The springiness values were  $94,60 \pm 0,87$ ;  $93,07 \pm 0,50$ ;  $86,24 \pm 3,45$ ;  $86,74 \pm 2,15$ ; dan  $75,95 \pm 1,06$ . The cohesiveness values were  $0,78 \pm 0,01$ ;  $0,75 \pm 0,01$ ;  $0,71 \pm 0,91$ ;  $0,66 \pm 0,19$ ; dan  $0,58 \pm 0,01$ . The gumminess values were  $432,85 \pm 50,31$ ;  $372,78 \pm 41,36$ ;  $327,47 \pm 34,48$ ;  $195,48 \pm 27,68$ ; dan  $151,00 \pm 14,23$ . The chewiness values were  $476,65 \pm 62,93$ ;  $319,16 \pm 64,11$ ;  $274,64 \pm 28,15$ ;  $181,44 \pm 10,80$ ; dan  $145,62 \pm 49,84$ . The microstructure result produced a chicken meatball structure with low homogeneity and a texture that tends to be fragile. Based on this study, the substitution of potato flour in chicken meatball did not affect the pH value, increased the water binding value, decreased the texture profile value, and the microstructure of the meatballs experienced a decrease in quality. This study is said to be good at levels 0% to 25% without adding or changing physical quality.

Keywords : Chicken meatballs. Potato flour, Physical quality, Microstructure