EFFECTS OF CARRAGEENAN ON COOKING AND PHYSICOCHEMICAL PROPERTIES OF HEALTHY CHICKEN MEATBALLS CONTAINING LEGUME FLOURS AS EXTENDERS

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2007

ABSTRACT

This study was conducted to determine the effects of carrageenan on the physicochemical characteristic and cooking properties of healthy chicken meatballs containing legume flours as extenders. In this project, carrageenan at levels 0.5%, 1%, 1.5% was added to those chicken meatballs that were formulated with 7% fats and 10% of legumes flour. Raw meatballs were analyzed for water activity, and water holding capacity; raw and cooked meatballs were analyzed for pH determination, cooking yield, fat retention, moisture retention, and shrinkage. Addition of legumes in the chicken meatball produced higher protein content as what had been stated in the previous finding. Through the entire tests that have been conducted, meatball containing green bean showed the highest value. For physicochemical characteristic, meatball containing 1.5% carrageenan and 10% green bean flour (T6) always showed the highest value as compared with other samples, 31.00 $\pm$ 0.00 (WHC); 6.75 $\pm$ 0.01 (pH); 0.995 $\pm$ 3.53 (a_w). Even though all the value actually show increment, some of them did not show any significant different statistically, especially in water activity. Sample T6 also showed the highest value, 99.64 $\pm$ 0.22 (CY); 66.37 $\pm$ 0.23 (MR); 98.75 $\pm$ 0.01 (FR); 3.51 $\pm$ 0.00 (DR) in cooking properties. Most of the cooking properties tests showed no significant difference ($p>0.05$) statistically. Controll samples (C1 and C2) significantly ($p<0.05$) showed the lowest values among all the samples. Therefore, the addition of carrageenan proved to be able in improving the characteristic of the meatball.