

***Effect of Nano Calcium Fortification of Duck Egg Shells on  
Chemical Quality of Broiler Chicken Sausage***

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**ABSTRACT**

*This study aims to determine the effect of nano calcium fortification of duck egg shells on the chemical quality of broiler chicken sausage. The material in the study consisted of meat fillet broiler chicken, cooking oil, garlic, onion, salt, pepper powder, monosodium glutamate, ice cubes, soy protein isolate, sausage collagen sleeve, tapioca flour, and nano calcium duck egg shells. The levels of fortification for duck egg shell calcium nano are: P0 (0%), P1 (0.15%), P2 (0.3%), P3 (0.45%), and P4 (0.6%) of the total dough sausage. Each treatment consisted of three replications. The research parameters observed included: water content, protein, fat, ash, carbohydrates, and calcium. Data from the chemical quality test results of broiler chicken sausages were analyzed by unidirectional analysis of variance. The difference in means was further tested by using Duncan's Multiple Range Test. The results showed that nano calcium fortification of duck eggs shell up to a level of 0.60% had a very significant effect ( $P < 0,01$ ) on the chemical quality of sausages (reduced water and fat content, increased protein, ash, and calcium levels, but did not affect sausage carbohydrate content). The best chemical quality of sausage was obtained from treatment 0.60% with 39.57% water content, 14.19% protein content, 13.17% fat content, 3.13% ash content, 29.98% carbohydrate content, and calcium content 1.180 mg/100g.*

*Keywords: Chicken, Fortification, Egg shell, Nano Calcium, Sausage*