

Effect Duck Eggshell Nano Calcium Fortification and Types of Packaging on Physical Quality of Chicken Sausage

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ABSTRACT

This study aims to determine the effect of nanocalcium fortification of duck egg shells and the type of packaging on the physical quality of frozen chicken sausages stored at -18°C. The research material consisted of chicken fillet meat, nano calcium duck egg shell powder, tapioca, cooking oil, garlic, shallots, onions, salt, pepper powder, frankfurter, monosodium glutamate, ice cubes, soy protein isolate, and sleeves. The study was designed using a factorial Completely Randomized Design (CRD) with 2 factors. Factor 1 treatment of NCa, namely P0 (without fortification) and P1 (0,3% NCa) of the total dough. Factor 2 is the type of packaging K1 (polyethylene), K2 (nylon), and K3 (retort pouch). Observations were made at the shelf life of 0 and 4 weeks. Parameters observed were pH value, water holding capacity, cooking loss, tenderness, and yield. The data from the physical quality test were analyzed by unidirectional pattern variation analysis and if there was a difference in mean, it was further tested with Duncan's Multiple Range Test. The results of the study concluded that chicken sausage fortified with nanocalcium duck egg shell and different types of packaging had a significant effect on the pH value, water holding capacity, tenderness, cooking loss, and chicken sausage yield. Polyethylene packaging is the best treatment for packaging for nanocalcium forified chicken sausage up to 0.3% level which is stored frozen at -18°C for 4 weeks with physical qualities namely pH value, water holding capacity, and the best yield, respectively, which is 6.99; 59.86%; and 95.07%

Key words: *fortification, nano calcium, chicken meat, physical quality, sausage*