

Effect of Enrobing on Quality Traits of Chicken Nuggets Produced Using Steam Cooking and Without Steam Cooking

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The aim of this study was to examine the effect of enrobing on quality traits of chicken nuggets produced using steam cooking and without steam cooking. Nuggets were manufactured, based on nuggets preparation procedure of Ceylon Agro Industries (pvt) Ltd, with four treatments Tr 1 (initial product), Tr2 (steam cooked nugget without enrobed), Tr3 (enrobed fried nugget produced without steam cooking) and Tr4 (enrobed, fried steam cooked nugget). Nuggets were evaluated for microbiological counts, pH, colour, breading pickup and sensory properties during storage. Higher initial aerobic plate counts were recorded in uncoated nuggets same as *Staphylococcus aureus*. After 21 days, uncoated nuggets were resulted highest aerobic plate counts and *Staphylococcus aureus*. Tr4 recorded zero initial *Staphylococcus aureus* counts during storage time. The pH of the control samples in respect to the enrobed, diminished during first fourteen days of storage and then in 21 day of storage it showed an increment. Same pattern was exhibited in enrobed samples but the increment was less than the control samples. The L*, a* and b* values changed significantly ($p < 0.05$) with the enrobing. Enrobed samples with their respective control ones showed an increase in redness (a* value) reduction in lightness (L* value). Moreover there was an increase in between Tr 1 and Tr3 but there was a reduction in Tr2 and Tr3 in relation to yellowness (b* value). Breading pickup of the two enrobed, fried products significantly differ and Tr4 recorded significantly low ($p < 0.05$) breading pickup. All the sensory characteristics were improved by enrobing in both locations, and same scores were reported in both places, except overall acceptability. These results indicate that enrobing could be used as a method of value addition for better utilization of low value meat without quality defects. In relation to steam cooking there are significant differences with quality defects but not with sensory attributes.

Keywords: Chicken nuggets, Enrobing, Steam cooking, Quality traits, Value addition