

Effect of Different Levels of Soy Flour in Batter on Quality Parameters of Crispy Chicken

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Crispy chicken is a battered and fried meat product. Soy flour is a good protein source having high viscosity and film-forming ability. Therefore, the current research was aimed to study the effect of different levels of soy flour as a component of the batter on crispiness and other quality characteristics of crispy chicken. The crispy chicken was prepared according to the commercial guidelines by incorporating soy flour at 0%, 5%, 10%, and 15% (w/w) and wheat flour and corn flour making the balance in the batter mixture. A sensory evaluation was conducted using a 7-point hedonic scale and 30 untrained panelists to select two best crispy chicken samples incorporated with soy flour. The control and two selected samples were tested for proximate composition, pH, colour, water holding capacity, microbial quality, and TBARS value over a one-month storage period. Crispy chicken with 10% and 15% soy flour levels in batter was chosen as the best treatment ($p < 0.05$) during the sensory evaluation. Results further revealed that crispy chicken with 15% soy flour had the highest fat (17.1%) and protein (24.3%) contents compared to other treatments ($p < 0.05$). At the initial stage of the storage, crispy chicken with 15% soy flour had the highest pH (8.84) value ($p > 0.05$) and that with 10% soy flour had the highest water holding capacity (93.33%) ($p < 0.05$). Besides, crispy chicken with 10% soy flour had the highest crispiness followed by control and 15% incorporated level ($p < 0.05$). The pH values and water holding capacity of crispy chicken samples decreased ($p > 0.05$) during storage. Furthermore, TBARS and total plate count values increased in control and other treatments with the storage, but within the permitted levels. *Salmonella* and *Escherichia coli* were absent in all samples. In conclusion, soy flour in the batter enhanced the crispiness and sensory properties of crispy chicken at a 10% level in an economical and sensory perspective.

Keywords: Crispiness, *Salmonella*, *Escherichia coli*, Sensory, TBARS value