

Title Effect of edible coatings on the quality of frozen fish fillets
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Abstract

The objective of this study was to determine the changes in the quality of coated trout fillets after coating with edible materials. Fillets were coated and stored at $-18\text{ }^{\circ}\text{C}$ for a period lasting up to 7 months. Coating materials were applied in three different stages (first, second, and last coatings). The coated fillets were fried and analyzed for oil absorption and moisture content throughout the storage period. Sensorial attributes and the physical–biochemical changes were also measured before the frying process in each month. It was observed that it is more advantageous to use gluten as the first coating, xanthan gum as the second coating, and wheat (W) and corn (C) flours in the ratio of 1:1 or 2:1 as the last coating. In terms of the fillet quality, the following results were obtained in the analyses conducted before frying. The lowest pH found was 6.25 in zein-containing samples and 6.30 in guar-containing samples. The effects of the last coatings on pH were unimportant ($P > 0.05$). The lowest thiobarbituric acid levels found were 2.07 mg kg in the fillets coated with casein mixture, 2.44 mg kg in the fillets coated with xanthan gum, and 2.25 mg kg in the fillets coated with W:C flour mixture in the ratio of 2:1. The lowest total volatile basic nitrogen levels found were 18.06 mg 100 g in the fillets coated with casein mixture, 18.62 mg 100 g in the fillets coated with xanthan gum, and 18.47 mg 100 g in the fillets coated with W:C flour mixture at 1:1 ratio. In the sensorial analysis, the coated samples were much more preferred than those not coated. As a result of the effects of all the materials, the coating layers on the meat surface provided more resistance against mass transfer during storage.