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The effect of adding *Gracilaria persica* macroalga on some physicochemical properties of common carp sausage during refrigerated storage

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Abstract

In this study, the effect of adding *Gracilaria persica* powder on the fish sausage produced from common carp surimi in five experimental treatments including the control group (with no preservative agent), TN (with standard sodium nitrite weight ratio, 0.02% w/w), 3, 6 and 9% algal powder was evaluated. Various qualitative parameters of the produced sausage samples including total volatile nitrogen content (TVN), free fatty acids (FFA), cook loss, pH, expressible moisture content and water holding capacity were measured on 0, 7, 14, 21 and 28 days under the refrigerated conditions. At the end of the experiment, the highest content of TVB-N was in non-algal samples and the lowest value was in 9% algal ($P<0.05$). The lowest amount of FFA was observed in the samples containing 6% and 9% algal powders ($P<0.05$). The highest value of cook loss was in the control group (65%) and the lowest value was obtained in 9% (50%). The highest percentage of expressible moisture content was observed in the control the sample (25%) which had a significant difference with others ($P<0.05$) and the lowest value was in 9% algal powder (7.5%). The highest and lowest water holding capacity of the samples were measured in 9% algal powder and the control group, respectively. This study confirmed that the possibility of producing the fish sausage without nitrite in order to ensure the consumer and also maintain the product quality. The results of this study showed that the use of *Grasillaria persica* powder at the level of 9% showed the best results in the studied parameters.

Keywords: Fish sausage, *Grasillaria persica*, Shelflife

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