ENHANCING GRILLED SPENT-HEN MEAT QUALITY THROUGH THE PINEAPPLE AND PAPAYA FRUIT EXTRACT IMMERSION

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Abstract

In recent year, the demand for chicken meat is rising quickly. Spent hen meat could be used to meet consumer demand. However, spent hen meat is low in physicochemical and organoleptic properties. Therefore, the laboratory experiment was conducted to document the effect of pineapple and papaya fruit extract immersion on the organoleptic and physicochemical quality of grilled spent hen meat. The study was laid out with two experiments. The treatments in experiment 1 were: control (E_1T_1), 10% (E_1T_2), 20% (E_1T_3), and 30% (E_1T_4) of pineapple fruit extract immersion. The treatments in experiment 2 were: control (E_2T_1), 10% (E_2T_2), 20% (E_2T_3), and 30% (E_2T_4) of papaya fruit extract immersion. The spent hen meat was immersed for four hours at 4±1 ^{0}C and grilled. A complete randomized design was used as an experimental design with three replicates. Physicochemical parameters, including pH, marinade uptake, cooking yield, cooking loss, and sensory parameters including smell, colour, appearance, taste, flavour, texture, and overall acceptability were analysed for grilled spent hen meat. The data were analysed using ANOVA with SPSS software version 25.00 and Duncan's Multiple Range Test with a significant level of 5%. The results of experiment 1 revealed that pH after cooking (6.64±0.07) and cooking loss (60.06±1.52%) were significantly ($p<0.05$) higher for E_1T_1. pH before cooking (6.40±0.02), marinade uptake (2.33±0.19%), and cooking yield (59.48±1.20%) were significantly ($p<0.05$) higher for E_1T_2. Experiment 2 revealed that there was no significant ($p>0.05$) difference between the treatments of pH before and after cooking. E_2T_4 showed a significantly ($p<0.05$) higher value for marinade loss (0.88±0.13%). E_2T_2 showed significantly ($p<0.05$) higher value for cooking yield (53.67±3.26%). Cooking loss (60.48±3.80%) was significantly ($p<0.05$) higher for E_2T_1. Physicochemical analysis of experiment 1 and 2 revealed that E_1T_2 and E_2T_2 had positive impact on spent hen meat. Therefore, the comparison between E_1T_2 and E_2T_2 revealed that E_1T_2 had significantly ($p<0.05$) higher cooking yield and marinade uptake. Results of the sensory analysis showed that E_1T_2 received higher acceptance for sensory parameters including smell, flavour, taste, texture, and overall acceptability. Finally, it was concluded that papaya and pineapple fruit extract immersion influence the quality of spent hen meat. However, 10% pineapple fruit extract immersion has a greater positive effect on the sensory and physicochemical quality of grilled spent hen meat than other treatments.

Keywords: Cooking yield, Immersion, Papaya, Pineapple, Spent hen

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