Effect of Commercial Meat Tenderizer (*Bromelain*) on the Sensory Attributes of Goat Meat Chunks

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Bromelain is a protease enzyme extracted from pineapple, which is used as a natural meat tenderizer. The study was aimed to identify the optimum concentration of commercial tenderizer bromelain for the goat meat (*Capra aegagrushircus)* chunks. Bromelain solutions were prepared in different concentrations on weight/volume basis (0.2, 0.4, 0.6 and 0.8 %). Approximately fifty grams (50 + 2) of carcasses from same part were chosen and the pH and the initial weight of the meat chunks were measured. The goat meat chunks were marinated in the bromelain solutions for 24 hours at 4 ^{O}C and the control sample was allowed to marinate in the distilled water. The chunks were taken out and mixed with 2 % (w/w) salt followed by the thermal treatment at 121 ^{O}C for 15 minutes. The pH, weight difference of the meat chucks and the rigidity index after thermal treatment were measured. Sensory attributes (Juiciness, tenderness, flavor, colour and overall acceptability) of the heat treated chunks were evaluated using Hedonic Scale (9 points) with thirty semi-trained panelists. The results emphasized that the pH of the goat meat significantly decreased ($P < 0.05$) with the increasing concentration of bromelain. Thermal yield of the treated meat chunks was significantly lower ($P < 0.05$) than the control. Rigidity index of bromelain treated meat chunks was significantly higher ($P < 0.05$) than the control. The sensory score exhibited that the lower concentration (0.2 %) of bromelain was sufficient to tenderize the goat meat chunks and over tenderization (pasty texture) was observed in higher concentrations (0.6 % and 0.8 %). The overall acceptability (mean ± SD) of the treated goat meat chunks were recorded as 8.33 ± 0.77, 5.67 ± 1.15, 3.17 ± 0.71 and 2.83 ± 0.71 for 0.2, 0.4, 0.6 and 0.8 % of concentrations respectively. The control sample was scored 4.67 ± 0.78. Based on the sensory analysis, the concentration of 0.2 % was the optimum concentration to tenderize the goat meat.

Keywords: Goat meat chunk, Meat tenderizer, Optimization