EFFECT OF PAPAIN ENZYME ADDITION BY INJECTION AND MARINATION IN BEEF FOR ELDERLY CONSUMPTION

RIBEIRO[1],W.O.; MATOS[2], F.M.de.; SATO[3], H.S.; CASTRO[4],R.J.S.de; POLLONIO[5],M.A.R.

[1] Departament of Food Technology, School of Food Engineering, State University of Campinas, Campinas, SP, Brazil. E-mail: wanessaor@hotmail.com

[2] Departament of Food Science, School of Food Engineering, State University of Campinas, Campinas, SP, Brazil. E-mail: franciellemirandadematos@gmail.com

[3] Departament of Food Science, School of Food Engineering, State University of Campinas, Campinas, SP, Brazil. E-mail: heliah@unicamp.br

[4] Departament of Food Science, School of Food Engineering, State University of Campinas, Campinas, SP, Brazil. E-mail: ruann@unicamp.br

[5] Departament of Food Technology, School of Food Engineering, State University of Campinas, Campinas, SP, Brazil. E-mail: pollonio@unicamp.br

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Abstract: The texture characteristics of meat and some meat products often make it impossible for the elderly, due to chewing and swallowing difficulties. Therefore, the modification of texture properties in such products presents a big challenge. The present study aimed to evaluate the effect of enzyme papain on bovine beef through the injection and marination methods on the texture properties. Three treatments were elaborated, being a control treatment (FC) and two with papain addition; by injection (F1) and marination (F2) methods. Beef was cut into steaks (12x7x5 cm) and brines containing 0.5% papain and 1.0 % NaCl were prepared for injection and marination. In F1, the steaks were weighed and injected 10 % of their weight with cooled brine and tumbled for 10 minutes. In F2, the steaks were kept for one hour in refrigeration (5 °C) in brine and then tumbled for 10 minutes. All treatments were cooked in a water bath at 80 ºC for 1 hour. The steaks were evaluated regarding objective color, pH, cooking yield and shear force. The marination process resulted in higher cooking yield (4.3% compared to FC) and pH was increased ($p < 0.05$). Both injection and marination methods added by papain reduced shear force values (2.72 N - F1; 3.01 N - F2) compared to control treatment (4.0 N) and

increased the L * value ($p < 0.05$). Thus, the application of papain enzyme, regardless of the method applied, contributed to improve the beef tenderness, aiming to promote its consumption among the elderly people and increase the intake of high biological value proteins.

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