Potential effect of Averrhoa bilimbi (belimbing buluh) marinades on tenderizing the buffalo meat compared to Actinidia chinensis (kiwifruit), Citrus limon (lemon) and commercial bromelain

ABSTRACT

This study was conducted to analyze the effect of Averrhoa bilimbi (belimbing buluh) marinades versus other meat tenderizers on the physicochemical properties of buffalo meat. The buffalo meat chunks were marinated with 40% Averrhoa bilimbi, 40% Citrus limon, 40% Actinidia chinensis, 5% commercial bromelain meat tenderizer (positive control) and distilled water (negative control) for 24 hours at 4°C. The treated samples were cooked at 100°C for 20 minutes. Both raw and cooked samples were subjected to physicochemical analyses. There was significantly lower pH (p<0.05) for raw and cooked meat chunks observed in all treated samples compared to control. Citrus limon and Averrhoa bilimbi showed the lowest pH at 5.04±0.06 and 5.06±0.03, respectively, indicated that the meat chunks were well tenderized. Citrus limon-treated sample recorded the highest (p<0.05) expressible water compared to others. The moisture content of cooked sample and the cooking yield increased significantly (p<0.05) in all treated samples compared to control. The hardness from TPA decreased significantly (p<0.05) for all treated samples compared to control. It can be suggested that Averrhoa bilimbi has the potential to be used as meat tenderizer with the ability to retain the moisture content as compared to other well-known and commercial meat tenderizers.

Keyword: Food technology; Marinades; Averrhoa bilimbi; Meat tenderizers; Buffalo meats