

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