

**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  $5.04 \pm 0.06$  and  $5.06 \pm 0.03$ , 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