

## QUALITY CHARACTERS OF BEEF AND BUFFALO HAM

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Ham is typically known to be a product derived from the hind leg of pork carcass. However, the new trend is to produce ham from other meat types as well such as beef, chicken, turkey and lamb. Many studies have shown that both beef and buffalo meat are freely available in the local market although slaughtering of buffalo is banned in Sri Lanka. Even though a few studies have been conducted on quality characters of beef and buffalo meat, there is little information available on its processed product. Thus present study was conducted to compare beef and buffalo meat in terms of quality of raw meat and processed product (ham).

The experiment was conducted at Meat Science Laboratory of the Department of Animal Science, University of Peradeniya. The proximate analysis was carried out for meat types to determine the contents of moisture (MC), crude protein (CP), crude fat (CP) and total ash. Quality characters of meat types such as pH, water-holding capacity (WHC), tenderness and colour were also measured. Ham was prepared from beef and buffalo meat using three brine solutions (T1, T2 and T3 with 10%, 20% and 30% brine from total weight of meat, respectively). Proximate composition, pH, MC, WHC, tenderness and colour of different ham samples were determined. A sensory evaluation was conducted for ham using 32 panelists. Taste panel scores and objective measurements were statistically analyzed using Friedman non-parametric test and ANOVA procedure, respectively to compare differences among meat types and ham types.

Compared with buffalo meat, beef was significantly high ( $P < 0.05$ ) in MC and WHC, and colour (Lightness and Yellowness) of beef were higher while Shear force value and redness were significantly higher ( $P < 0.05$ ) in buffalo meat relative to beef. Lightness and yellowness of beef were slightly higher than those of buffalo meat but the differences were not significant ( $P > 0.05$ ). The two meat types were not different ( $P > 0.05$ ) in terms of CP, CF, ash and pH values. Beef ham samples recorded significantly higher values of MC and WHC, and significantly lower values for texture compared with buffalo ham samples ( $P < 0.05$ ). However, proximate analyses showed that the two ham types were not significantly different in terms of CP, CF and total ash contents ( $P > 0.05$ ).

Taste panel analysis showed that in beef ham, T1 (with the highest redness) received the highest preference ( $P < 0.05$ ) in terms of appearance and colour. However, in buffalo ham, T3 was given the highest median score ( $P < 0.05$ ) for appearance and colour as the panelists showed less preference for excess redness in T1 and T2 samples.

These findings show that beef and buffalo meat are comparable on its chemical composition and meat quality characters. In overall, 10% and 30% brine solutions can be recommended for production of beef ham and buffalo ham, respectively.