

Effects of stocking and transport conditions on physicochemical properties of meat and acute-phase proteins in cattle

ABSTRACT

This study's objective was to evaluate the effects of distance and stocking density on physicochemical properties and oxidative stability of meat and acute-phase proteins in Brahman crossbred cattle transported by road under hot and humid tropical conditions. Sixty Brahman crossbred heifers were subjected to road transport from a cattle feedlot farm located in Universiti Putra Malaysia (UPM), Serdang, to a commercial ruminant abattoir in Shah Alam, Selangor. Animals were assigned to long and short distances and high, medium, and low stocking densities. The results revealed that the intensity of response significantly increased in meat samples from animals subjected to long-distance transportation and higher stocking density. Alpha-1-acid glycoprotein and serum amyloid-A values increased considerably and were different from the baseline values recorded at preload. In conclusion, the current results revealed that the color, pH, shear force values, water holding capacity (WHC), glycogen level, and malondialdehyde assay (MDA) concentrations in meat and acute-phase proteins (APP) were affected by both distances and stocking densities, as evidenced by the significant changes recorded from the parameters above.

Keyword: Brahman crossbred; Hot humid climate; Road transport; Meat quality; Malaysia