ABSTRACT

The objectives of this study were to study degradation of troponin-T (Tn-T) protein and meat tenderness in Kampaengsaen and Native beef at different ageing periods. Beef samples were taken from carcasses from Kampaengsaen crossbred (KU; n=15) (50% Charolais x 25% Brahman x 25% native Thai) under condition of the Production System of Kampaengsaen Beef Cooperative weighed 544.64±29.86 kg and Native cattle (NA; n=15), weighed 198.43±11.23 kg and freely grazed natural forage. Beef longissimus dorsi (LD) muscles were collected from the 6th to the 12th ribs of the abdominal region and transferred to at KMITL laboratory. After 24 hr postmortem storage at 0-4 °C, LD muscles were cut into 2.5-cm-thick steaks and vacuum package stored at 0-4 °C for 1, 7, 14, 21 and 30 days. Warner Bratzler Shear Force (WBSF) and troponin-T (Tn-T) degradation were determined at each ageing period. Results showed that type of beef cattle had affected on WBSF and degradation of Tn-T. Beef from KU had statistically lower WBSF than NA beef (p<0.01). The intensities of Tn-T 39 kDa, 30 kDa and 28 kDa band of KU beef had statistically higher than NA beef (p<0.01). Tn-T37 kDa band were similar in both beffs. (P>0.05). For Tn-T 26 kDa band, it was found only 5 in 15 samples of NA beef at 30 day of ageing period. It showed that as ageing period was longer Tn-T 30 kDa and 28 kDa were increased (p<0.01) while WBSF, Tn-T 39 kDa and 37 kDa value decreased (p<0.01). It was found that the value relevance of NA beef a negative relationship between WBSF with the increase of protein intensities in the 7, 14 and 21 days of aging period with a statistically significant (p<0.05) but not found relationship between WBSF with the protein intensities values in KU beef.