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Assessment of Quality Beef Production in Northern Thailand: Meat Quality of Brahman Crossbred and Charolais Crossbred Cattle

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Abstract

Cattle farming has a long tradition in Thailand. The growing demand for high quality beef did lead to the introduction of exotic beef breeds causing an increased number of crossbred cattle. For the further improvement of beef quality, marketing strategies based on quality aspects have to be developed. Therefore more information about the meat quality of beef breeds and crosses in Thailand are needed. It was the aim of this study to assess the meat quality of the most famous beef cattle breeds (Brahman- and Charolais-crossbred cattle) under practical farm conditions in northern Thailand.

The study was conducted on a commercial beef cattle farm in Chiang Mai, Thailand. In total, 34 Brahman- and 34 Charolais-crossbred cattle were randomly selected and slaughtered at different body weights (500, 550 and 600 kg). After slaughtering, carcasses were chilled at 2–4°C for 24 h before a Longissimus dorsi muscle (Ld) was removed for subsequent meat quality evaluation.

Ld from Brahman crossbreds had more moisture and less crude fat than that from Charolais. Compared to Charolais, the muscle of Brahman crossbreds had lower concentration of cholesterol and triglyceride. Ld from cattle slaughtered at 600 kg had higher concentrations of insoluble collagen when compared with animals slaughtered at 500 and 550 kg. Except for lightness (L^* value) of meat which was similar between the genotypes, meat from Charolais crossbreds had more redness (a^* value) and yellowness (b^* value) than meat from Brahman. Drip loss and cooking loss were not affected by genotype. However thawing loss and grilling loss were higher for meat from Brahman crossbreds. Shear force value was lower for meat from Charolais crossbreds. It can be concluded from this study that meat from Charolais crossbreds had better quality than meat from Brahman crossbreds in terms of intramuscular fat, water holding capacity, tenderness and meat colour.

Keywords: Beef, Brahman crossbred, Charolais crossbred, fattening cattle, meat quality, Thailand