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Selection of muscles as indicators of tenderness after seven days of ageing

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Abstract

The selection of a muscle that could be used as an index muscle for beef tenderness was performed using nine commercially important muscles. A total of 50 bulls, Charolais × Alentejano (n = 9), Simmental × Alentejano (n = 9) and Alentejano (n = 32), were slaughtered at two different commercial live weights: crossbred animals (sample A) between 500 and 600 kg (carcass weight between 310 and 370 kg) and purebred Alentejano (sample B) between 350 and 450 kg (carcass weight between 185 and 295 kg). Slaughter ages varied between 16 and 24 months in both groups. The shear force of nine muscles (Mm. *biceps femoris*, *gastrocnemius*, *longissimus thoracis*, *longissimus lumborum*, *quadriceps femoris*, *semimembranosus*, *semitendinosus*, *supraspinatus* and *triceps brachii caput longum*) was assessed seven days *post-mortem*. In both samples, the comparison between different muscle means and the combined mean of all muscles and the respective correlations showed that the Mm. *biceps femoris* and *semimembranosus* could be used as index muscles. However, the *biceps femoris* is preferred, because it showed greater stability in terms of the coefficient of variation.

Keywords: Cattle; Tenderness index; Muscle; Warner–Bratzler shear force