

Meat tenderness and water holding capacity evaluation from intact and immunocastrated steers

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The animal sex has influence on bovine meat quality. The immunocastration is used as an alternative to minimize some negative effects on the meat quality. The objective from this study was to evaluate the tenderness and the water holding capacity for intact and immunocastrated steers. The trial was realized in the feedlot from Araucária Farm. There were used 20 animals with initial weight around 357 ± 8.63 kg, having 2 permanent teeth, divided in two groups: intact animals and immunocastrated (vaccinated with two doses of Bopriva[®], Pfizer Animal Health). The first vaccine application was 30 days before entry on the feedlot, and the second was 30 days after the first. In the end of the 67 days of trial period (which correspond to the indicated time between the last vaccine application and the slaughter), the animals were slaughtered, having a medium weight of 470 kg in order to realize the meat evaluation. After 24hs from the slaughter process the half carcasses from both treatments were sectioned between the 12nd and the 13nd rib. There were collected one sample from each *Longissimus dorsi* muscle (from tail to head way), the samples were transported to the laboratory for the water holding capacity, shear force and myofibrillar fragmentation index analysis. The experimental design was completely randomized; the data was submitted to analysis of variance using the statistic program SAEG. There was no significant differences for water holding capacity, however for the shear force and myofibrillar fragmentation index there was observed differences ($P > 0.05$) between the treatments. The necessary force for cut the meat was lower (6.42 kgf) and the myofibrillar fragmentation index was higher (92.00) for immunocastrated animals, the values for the intact animals were 7.95 kgf for shear force and 83.59 for myofibrillar fragmentation index. The results observed in this study suggest that the meat from immunocastrated steers were tenderer, possibly due the high calpastatin activity found on intact steers in comparison with those immunocastrated. These consequently suggest that as result we will have a lower action from the calpains and a less tender meat. As conclusion, the immunocastration realized with Bopriva[®] vaccine, in this study conditions, is an alternative to improve the meat quality, having good results on the tenderness parameters.

Keywords: shear force, meat quality, immunocastration, bovine meat, tenderness