WATER HOLDING CAPACITY, SHEAR FORCE AND PH OF PUREBRED CURRALEIRO PÉ-DURO CATTLE AND THEIR CROSSINGS

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The aim of this study was to assess water holding capacity (WHC), pH, and shear force (SF) of purebred Curraleiro Pé-Duro (CPD), Nellore (NEL) and their crossing cattle. The experiment included 34 animals: seven CPD, six Nelore (NEL), seven F1 (1/2 NEL +1/2 CPD), seven F2A (1/4 CPD + 1/4 NEL + 1/2 Angus), and seven F2S (1/4 CPD + 1/4 NEL + 1/2 Senepol). All animals were born in 2013, slaughtered in 2017, and were fed exclusively with pasture and mineral supplementation. The cattle were slaughtered in a commercial facility located in Timon, northeastern Brazil. pH, WHC and SF were assessed at the laboratory for meat quality assessment of Embrapa Pecuária Sudeste in São Carlos, southeastern Brazil. Meat pH was measured at the *Longissimus dorsi* muscle 24 hours after thawing. WRC was defined as the weight difference after meat samples were subjected to 10 kg of pressure for 5 minutes. Meat tenderness was evaluated through SF using a TA-XT2 texture analyzer coupled with a 1-mm Warner-Bratzler blade. A completely randomized statistical design was with five treatments (CPD, NEL, F1, F2A, and F2S breeds) was used, and each animal was classified as an experimental unit. Mean values were compared with the Tukey's test at a 5% significance level. The results obtained for the pH (CPD=5.21±0.09; NEL=5.26±0.08; F1= 5.25±0.04; F2S= 5.27±0.09; and F2A=5.24±0.09), WHC (CPD=74.17±2.60; NEL=73.17±2.90; F1=72.67±3.38; F2S=73.26±0.91; and F2A=73.86±2.30), and SF (CPD=7.98±1.71; NEL=9.93±1.60; F1=9.02±1.77; F2S=9.46±2.24; and F2A=9.15±1.93) did not show statistical difference (P=0.7065; P=0.8236; P=0.5697 for pH, WRC and SF respectively). The pH for all breeds was slightly lower than the recommended value (5.5). Meat tenderness, as assessed by SF, was above the value defining tender meat for all breeds. Findings for pH and SF may be explained by the production system commonly adopted in Brazil, characterized by low nutritional intake from tropical pasture and mineral supplementation, associated with sample's sexual status as non-castrated animals. According to study results, the use of the Curraleiro Pé-Duro breed for crossbreeding or as a pure breed does not compromise meat quality.

Keywords: beef, carcass, Nellore, quality, tenderness