



Use of electrical conductivity to predict water-holding capacity in two muscles of camels (*Camelus dromedarius*)

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Abstract

The aim of the present study was to examine the interrelationships among electrical conductivity (EC) measured at different *post mortem* times and water-holding capacity (WHC), and to determine and assess the effectiveness of the use of electrical conductivity to predict water-holding capacity in camels (*Camelus dromedarius*). In this study, the drip loss (DL), cooking loss (CL) and thawing loss (TL) were used as measure of WHC. For this purpose a total number of sixty individual camel muscles (*longissimus thoracis* (LT) and *semimembranosus* (SM) were collected from thirty male healthy camels aged between 5 and 7 years. The results demonstrated that the overall means of electrical conductivity of *longissimus thoracis* muscle were 3.33 ± 1.11 mS/cm at 90 minutes *post mortem*, 6.37 ± 2.09 mS/cm at 24 hours *post mortem* and 7.35 ± 2.80 mS/cm at 48 hours *post mortem*. In contrast, the overall means of electrical conductivity obtained for the *semimembranosus* muscle were in ordre to 3.72 ± 1.31 mS/cm at 90 minutes *post mortem*, 6.30 ± 2.32 mS/cm at 24 hours *post mortem* and 7.05 ± 2.75 mS/cm at 48 hours *post mortem*. Moreover, it was established that the electrical conductivity was significantly increased ($p < 0.05$) with the *post mortem* time in the two studied muscles. Therefore, this study stated that the highest numbers and coefficients of significant correlation between the electrical conductivity and the parameters of water holding capacity were established at 48 hours post mortem in the two muscles. Thus, these findings indicated that electrical conductivity seemed to be an accurate predictor of WHC in the two studied camel muscles, when measured at 48 hours post mortem.

Keywords: electrical conductivity, water-holding capacity, camels, *longissimus thoracis*, *semimembranosus*.