

## POSTMORTEM CHANGES IN BOVINE MUSCLE ELECTRICAL CONDUCTIVITY AND ITS RELATIONSHIP TO MEAT QUALITY ATTRIBUTES

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**Summary.** Postmortem changes in muscle electrical conductivity (EC) of bovine *longissimus dorsi* and its relationship to meat quality attributes were investigated. Fifty Lithuanian Black & White and Lithuanian Red bulls were slaughtered. EC of *muscular longissimus dorsi* and *muscular semimembranosus* at 45, 60, 90, 120, 150 minutes and again at 1, 2 and 4 days postmortem was studied for their ability to indicate or predict meat quality attributes.

During the development of rigor and over the ageing period, electrical changes occur in muscle tissue. EC of *muscular longissimus dorsi* m/S increased on 2.76 time at 1 day postmortem ( $p \leq 0.05$ ) and on 6.72 time at 2 days postmortem ( $p \leq 0.05$ ) compared to EC at 45 minutes postmortem. Comparable results were obtained on *muscular semimembranosus* EC, which increased on 2.28 and 6.18 times after 1 and 2 days post-mortem compared to the data obtained 45 minutes postmortem ( $p \leq 0.05$ ). Meat pH taken 120 minutes postmortem were highly significantly correlated with EC measurements ( $r=0.55$ ,  $p \leq 0.05$ ). However, EC of *muscular longissimus dorsi* at 120 minutes postmortem showed high negative correlation with cooking loss percent ( $r=-0.39$ ,  $p \leq 0.05$ ). Furthermore, at 60 minutes postmortem EC negatively correlated with shear force of meat ( $r=-0.43$ ,  $p \leq 0.05$ ) and at 90 minutes postmortem with oxyproline amount ( $r=-0.36$ ,  $p \leq 0.05$ ), respectively.

In conclusion, electrical measurements were found to change significantly between first hours and 1-2 days postmortem demonstrating that early postmortem electric measurements are suitable for the prediction of ultimate meat quality. Therefore, the data obtained on early electrical measurements of meat can expand a concurrence in assortment of carcasses.

**Key words:** cattle, muscle, electric conductivity, meat quality.