

Estimation of selected porcine meat quality indicators on the basis of electrical conductivity measured 24 hours post-slaughter

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Abstract :

Correlations were estimated between the single measurement of electrical conductivity (EC) done 24 h post-slaughter and meat pH₄₅ and pH₂₄, water, protein and intramuscular fat content, thermal drip and free-water content and meat texture (tenderness and juiciness). Used were 43 carcasses of castrates. Once the animals reached the mean final body weight of about 105 kg, they were slaughtered at one slaughter house in accordance with technological standards adopted in meat processing plants. With the increase in EC measured 24 hours post-slaughter, both the initial (pH₄₅) and final (pH₂₄) meat acidities decreased. Moreover, together with the EC₂₄ increase, the water level of meat decreased and was accompanied by an increase in the protein content. Increased EC resulted in increased thermal and free water drips which, in turn, reduced meat juiciness. Phenotypic correlation coefficients were estimated between EC measured 24 h post-slaughter and pH₄₅ (-0.756**), water content (-0.359*), protein content (0.476**), thermal drip (0.331*), free-water content (0.373*) and juiciness (-0.342*). It is concluded that in the synthetic line 990 fatteners the EC of meat measured 24 h post-slaughter can be employed in practice for rapid diagnosis of pork quality on the slaughter line.

Key Word :

electrical conductivity / meat quality / pigs / porcine meat

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