The Effects of Transport and Lairage on the Blood Profile of Slaughter Pig

S. S. Moon, J. R. Lee, C. Y. Shin, D. H. Kim[1], K. S. Kim[2],
S. T. Joo and G. B. Park
Department of Animal Science, Gyeongsang National University
[1]Ministry of Agriculture and Forestry
[2]Department of Veterinary Science, Gyeongsang National University

The objective of this experiment was to investigate the effect of transport and lairage on the blood profile of pigs. Six 110kg pigs (Landrace) were transported to slaughter using a commercial livestock lorry for 1.5 hr then held in lairage for 3 hrs. Blood samples were taken from pre-loading (pense), immediately after loading, immediately after transport and after 3 hrs lairage for analysis of blood profile.

Cortisol and β-endorphin concentrations of immediately after transport were significantly higher ($P<0.05$) than those of immediately after loading or pre-loading, but were significantly reduced ($P<0.05$) by 3 hrs lairage compared to level of pre-loading. There were no significant differences in CPK (creatine phosphokinase) levels between immediately after loading and transport, but the levels were significantly higher ($P<0.05$) than that of pre-loading. Also the CPK levels were significantly reduced by 3 hrs lairage, so that the CPK levels after 3 hrs lairage were not significantly different compared to pre-loading. These results suggested that pigs could have a physical stress during transportation, and the stress could be recovered for 3 hrs of lairage. Plasma concentrations of cortisol, β-endorphin and CPK were highest in immediately after transport ($P<0.05$). There were significant relationships between cortisol and β-endorphin (r=0.45, $P<0.05$), CPK and β-endorphin (r=0.67, $P<0.01$), LDH (lactate dehydrogenase) and CPK (r=0.67, $P<0.01$). From the results of this study, it was confirmed that lairage of slaughter pigs was necessary to recover from the stresses associated with transport and loading.