

TITLE

RELATIONSHIP BETWEEN SKIN LESION SEVERITY AND PHYSIOLOGICAL STRESS INDICATORS, CARCASS AND MEAT QUALITY OF SLAUGHTER PIGS

Nikola ?obanovi?¹, Nedjeljko Karabasil¹

¹ *Department of Food Hygiene and Technology, Faculty of Veterinary Medicine, University of Belgrade*

CONTENT

The aim of this study was to determine the effects of skin lesions on physiological stress indicators, carcass and meat quality of slaughter pigs.

A total of 60 pigs with live weight of approximately 112 kg and six months old were examined. Skin lesions were visually assessed at the slaughter-line in different parts of the carcass (ears, front, middle, hind-quarters, legs) using a 3-point scale. At exsanguination, blood samples were collected and blood lactate and glucose concentrations were determined. Six different carcass quality parameters including live, hot and cold carcass weights, backfat thickness, loin muscle thickness and lean meat content were measured. pH and temperature of *M. longissimus dorsi* (pH45LD; T45LD) and *M. semimembranosus* (pH45SM; T45SM) were measured 45 minutes post-mortem. Pork quality classes (PSE, normal, DFD meat) were determined using pH45LD value. Pigs having severe skin lesions had lower live weight (103.50 kg vs. 113.30 kg and 115.60 kg; $P<0.0001$), hot carcass weight (83.91 kg vs 94.43 kg and 95.58 kg; $P<0.0001$), cold carcass weight (81.92 kg vs. 91.36 kg and 93.96 kg; $P<0.0001$), loin muscle thickness (61.00 mm vs. 70.16 mm and 68.76 mm; $P=0.0007$) and lean meat content (50.46% vs. 54.89% and 56.73%; $P=0.0050$) than pigs having moderate skin lesions and pigs without skin lesions. Pigs with severe skin lesions had higher pH45LD (6.43 vs. 6.09 and 6.22; $P<0.0001$), pH45SM (6.40 vs. 6.12 and 6.18; $P=0.0011$) and prevalence of DFD meat (56.25% vs. 10.53% and 12.00%; $P=0.0013$), but lower prevalence of normal meat (31.25% vs. 73.68% and 84.00%; $P=0.0016$), blood lactate (5.81 mmol/L vs. 12.13 mmol/L and 11.03 mmol/L; $P=0.0008$) and glucose (3.50 mmol/L vs 7.71 mmol/L and 7.85 mmol/L; $P=0.0013$) concentrations than pigs in other two groups.

The presence of severe skin lesions on pig carcasses had detrimental effects on animal welfare, carcass and pork quality.