

EFFECT OF SWINE DIETS SUPPLEMENTED WITH MAGNESIUM SULFATE AND ELECTROLYTES ON PORK QUALITY

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ABSTRACT

Market hogs (n = 160) were allotted into four dietary treatments to evaluate the effectiveness of magnesium sulfate and electrolytes on improving pork quality. The experiment was conducted in four seasons to evaluate seasonality (temperature) as an environmental stressor. Duroc and Berkshire x Duroc market hogs were grouped by weight, sex and breed into one of four dietary treatments. The dietary treatments were: 1) control (corn/SBM based; 13.5% CP and 0.8% total lysine), 2) control + 3.2g/pig/d of magnesium sulfate ($MgSO_4$) for a minimum of 14 d prior to slaughter, 3) control + 1.5% electrolytes (sodium bicarbonate; $NaHCO_4$) fed for 48 h prior to slaughter, and 4) control + 3.2 g/pig/d $MgSO_4$ + 1.5% $NaHCO_4$. No differences ($P > 0.05$) in pork quality were found between dietary treatments. Live weight, gain, carcass weight and dressing percentage did not differ ($P > 0.05$) by trial. Trial 4 had the highest 24 h loin and ham pH ($P < 0.05$) while hogs processed in Trial 2 had the lowest 24 h pH of the four trials. Trial 4 hogs had the lowest L values in the ham and loin while Trial 3 had the highest L values in the loin and Trial 2 had the highest L values in the ham ($P < 0.05$). Trial 4 loins had the lowest drip loss ($P < 0.05$) which corresponded to the highest pH and lowest L values. The highest values for Warner-Bratzler Shear force ($P < 0.05$) were found in Trials 1 and 2 while Trials 3 and 4 both had the lowest values. Overall, dietary treatment had no effect on pork quality. However, seasonal temperature had an impact on pork quality.

