

Effect of Environmental Enrichment on the Quality of Iberian Pig Meat

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Background: The environmental enrichment can be defined as availability of bedding, manipulable enrichments or addition of forage in feed. The European Commission demands that “pigs must have permanent access to a sufficient quantity of materials to enable proper investigation and manipulation activities, such as straw, hay, wood.” Otherwise, the animals may suffer from frustration and stress.

However, in most studies, the effects of environmental enrichment on meat quality are confounded with either indoor versus outdoor and/or with space allowance and furthermore, differ greatly between indoor and outdoor rearing systems.

Therefore, in this work the effect of the inclusion of toys in an indoor breeding system on the quality of 100% Iberian pigs was studied.

Methods: A total of 50 Iberian female pigs with the same diet were divided into control group that was placed in a compacted earth pen and experimental group that was placed in the same type of pen but the animals were given wooden and rope toys. When they reached slaughter weight they were transported to the slaughterhouse and the left loin was taken to the laboratory.

pH was determined with a penetration probe at 45 minutes, 24 and 48 hours. EZ-DripLoss was measured in duplicate on the slice between T13 and L1. Colour (L^* , a^* , b^* , chroma and hue) was measured on two slices of loin after 30 minutes of blooming using a 10° observer and D65 illuminant. Physico-chemical determinations were then carried out on minced meat.

Results: The results showed that meat from environmentally enriched group had similar values for pH at 45 minutes and higher values for pH at 24 and 48 hours, drip loss and moisture, but the differences were statistically significant only for moisture. These samples also showed lower values for lightness and redness together with higher values for yellowness, chroma and hue with the differences being statistically significant for hue.

Conclusions: Therefore, moisture and flesh colour were affected by the inclusion of wooden and rope toys.