Meat quality traits of pigs housed with increasing space availability

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Space allowance for fattening pigs was tested in two experimental trials, as part of the *mEATquality* research project, funded by the European Union's Horizon 2020 research and innovation programme under grant agreement N° 101000344.

The experiments were carried out on heavy pigs intended for Italian PDO ham and replicated twice.

In the first trial, 72 pigs of the Italian Duroc x Large White crossbred were kept indoor, undergoing 1, 2 and 3 m^2/ pig space allowances (i.e. 24 pigs per treatment), where 1 m^2/pig is the minimum space allowance for pigs over 110 kg of live weight, according to Directive 2008/120/EC.

The second trial was conducted in an organic farm with 91 commercial hybrids (Topigs TN70 x Fomeva K-line) with space allowances of 1,36 m^2/pig indoor and 1,05 m^2/pig outdoor, 2,6 m^2/pig indoor and 2 m^2/pig outdoor and 3,9 m^2/pig indoor and 3 m^2/pig outdoor, where 1,3 m^2/pig indoor and 1 m^2/pig outdoor is the minimum for organic pigs up to 110 kg of liveweight, according to Regulation (EC) 889/2008.

No differences were detected between the average values of growth and slaughter performances for the investigated space allowances.

In each trial, 60 pigs (20 per treatment in two replicas) were sampled at slaughter and their carcasses analysed for % lean meat estimate, muscle and backfat thickness, slaughter weight and dressing %. The left loins were analysed for their intrinsic quality traits including pH 24h, pH 48h, drip loss, CIE colorimetric indices L*, a*, b*, and derived parameters chroma C*, and hue angle h°, thawing and cooking losses, slice shear force (SSF) and fracturability (SSf) and composition.

In the first trial significant differences were found in the quality traits of the loins for thawing loss, SSF and SSf, showing the positive effect of the increase in space allowance in decreasing thawing loss and improving tenderness.

The second trial did not generate significant differences in the intrinsic quality of the tested pork loins; the SSF and SSf values were aligned with those measured with the highest space allowance of the first trial.

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