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Book of Abstracts

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Feed restriction (R *vs* AL) reduced the daily FI (7%, $p<.001$) and the number of visits (27%, $p<.001$), but increased FI per visit (20%, $p=.001$) and the eating rate (10%, $p=.032$).
The dietary amino acid reduction applied in late finishing (LAA *vs* CAA) increased the daily FI (10.5%, $p=.037$), tended to increase the eating rate (19.6%, $p=.06$) with both feeding regimes, and tended to interact ($p<.10$) with the feeding regime for other eating traits. In fact, under AL conditions, dietary amino acid reduction increased the daily FI and the visit frequency, but reduced the FI per visit, where the opposite occurred under R conditions.
The coefficient of variation of all the behaviour traits (ranging 0.18 to 0.66) was always larger than that found for the daily FI (0.10). Strong relationships between FI per visit and the visit frequency ($R^2 = 0.93$), and between the eating rate and the time spent eating ($R^2 = 0.80$) were found. The behavioural flexibility of the pig in the attempt to achieve their desired feed intake was evidenced.

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O102

Growth traits, carcass and meat quality of heavy pigs receiving different enrichment tools

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Two separate and independent trials were carried out to investigate the effect of innovative enrichment devices on Italian heavy pigs' growth parameters, carcass traits, meat and ham quality. In Trial 1, 20 pigs received a hanging metal chain (C1) as environmental enrichment, and 20 received wood (poplar) logs (WL) placed inside a metal rack installed on one side of the pen. In trial 2, 20 pigs received a metal chain (C2), whereas 20 animals received a specifically formulated edible block (EB) placed inside the same metal rack described above. Enrichments were always available to pigs. Animal were kept on slatted floors and liquid-fed twice a day. Trials started when animals were approximately 80 days old (average Body Weight – BW = 28 kg) and ended at slaughtering (average BW = 158 kg, age: 285 days in Trial 1 and 280 days in Trial 2). Growth parameters, carcass traits and meat quality data were collected, (including hams weight during dry-curing) and submitted to analysis of variance. The pen (5 pigs) was taken as the experimental unit for growth parameters, the individual was used as the experimental unit for carcass and meat traits.
In both trials, no significant differences were observed as concerns growth parameters (final BW, average daily gain, feed consumption, feed conversion ratio). Only minor differences were detected in carcass traits, with WL carcasses having higher lean meat percentage (51.06 *vs* 49.86%, $p<.05$), lower backfat thickness (22.55 *vs* 25.15 mm, $p<.05$) but higher drip losses (1.23 *vs* 1.00%, $p<.05$) if compared to C1. EB carcasses had lower loin thickness if compared to C2 (59.20 *vs* 64.50 mm, $p<.05$). In both trials, these slight differences did not affect the overall yield in lean cuts, the overall meat water holding capacity or any other quality trait of meat (pH, colour, Warner-Bratzler shearing force). Ham weight losses during dry-curing were not affected by the experimental treatment ($p>.05$).
Our results show that providing heavy pigs with either poplar logs or an edible block did not affect their growth parameters, overall carcass traits, meat or ham quality; this observation supports the conclusion that such innovative and destructible/ingestible enrichment tools could be used in substitution of the metal chain. Further useful information will be available once the observation of the behavioural video-recordings will be completed, to get more insights on the type of interactions carried out by pigs on each enrichment device.

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O103

Seed-based vaccine immunogens administered in feed for the control of verocytotoxic *Escherichia coli* infection in pig livestock

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