BOOK OF ABSTRACTS

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Outdoor finishing of intact male pigs of local breed on a high fibre diet: effects on growth, carcass, and some meat quality traits

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Alentejano (AL) pig is a Portuguese local breed known for the quality of its meat and meat products obtained from heavy pigs, traditionally surgically castrated without pain relief, but due to current issues related to this procedure, other solutions must be researched to prevent/reduce boar taint. One approach is diet manipulation. In this trial, 30 male AL pigs raised outdoor with *ad libitum* water and feed were used to test the effects of a new high soluble dietary fibre feed on animal growth, carcass traits, and meat quality. Pigs were individually fed commercial diets from ~40 until 130 kg body weight (BW). From 130 kg until slaughter (160 kg BW), surgically castrated (group C) and intact pigs (group I) were fed commercial diets, while another group of intact pigs was fed an isoproteic and isoenergetic experimental diet (CP ≈ 14 %, Digestible energy ≈ 13.1 MJ/kg DM), containing agro-industrial by-products (group IE). Overall, average daily gain was higher in IE and I pigs than in C pigs until ~130 kg BW and higher in IE than I and C pigs between 130 and 160 kg BW (732 in IE, and 595 and 591 g/d in I and C pigs respectively, $P<0.05$).

Both intact groups (IE and I pigs) also presented leaner carcasses, with higher lean to fat cuts ratio (1.98 and 1.96 in IE and I, and 1.63 in C pigs, $P<0.001$) and lower last rib backfat thickness (48.5 and 45.3 in IE and I, and 63.7 mm in C pigs, $P<0.001$). *Longissimus lumborum* (LL) pH_u was different between I and C groups (5.61 in IE, 5.58 in I, and 5.68 in C pigs, $P<0.05$). There were also differences between both intact and C groups in LL moisture content (73.0 and 73.5 in IE and I, and 71.4 g/100 g in C pigs, $P<0.001$) and intramuscular fat (IMF) (2.96 and 2.72 in IE and I, and 4.12 g/100 g in C pigs, $P<0.01$). Finally, LL total protein, ashes, myoglobin content and CIE a^* (redness) were not different among groups. *Psoas major* (PM) pH_u was similar between experimental groups and moisture content different between both intact and C groups (74.5 and 74.4 in IE and I, and 73.5 g/100 g in C pigs, $P<0.001$). PM IMF was also different between both intact and C groups (1.79 and 1.94 in IE and I, and 2.40 g/100 g in C pigs, $P<0.001$). PM total protein and ashes were not different among groups. Finally, PM myoglobin content was lower in both intact groups (2.66 and 2.75 in IE and I, and 3.19 mg/g in C pigs, $P<0.01$). Overall, these data show that the experimental diet had no negative effect on the growth of intact AL pigs when compared to the one obtained in intact AL pigs consuming commercial diets. Intact AL groups produced leaner carcasses and meat than castrated ones. Further studies will test the effect of the experimental high fibre feed on pork boar taint and fatty acid profile of meat and fat of intact AL heavy pigs raised outdoors.

Keywords: Alentejano pig, intact pigs, growth, carcass, meat quality

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