Federal Department
of Economic Affairs DEA
Agroscope Liebefeld-Posieux
Research Station ALP

Swiss Confederation

Effect of housing of entire male pigs on performance, carcass characteristics and meat quality

C. PAULY, P. SPRING, G. BEE

In 2010, castration of young male piglets without pain relief will be prohibited in Switzerland. In a previous study, we reported that ADG of group-penned entire male pigs was lower than castrates (774 vs. 830 g/d) and ADFI was with < 2 kg/d very low.

THE OBJECTIVES

Compare the growth performance, carcass characteristics, and meat quality traits of the *longissimus muscle* (LM) of group- (GP) and individually (IP) penned entire male pigs.

THE CONCLUSIONS

- ✓ GP consumed less feed than IP → it is likely that the higher physical activity of GP negatively affected their feed intake
- ✓ ADG did not differ between IP and GP → compared to GP, IP were less efficient and their carcasses tended to be fatter
- ✓ Housing system did not affect androstenone and skatole concentrations in the backfat

MATERIALS & METHODS

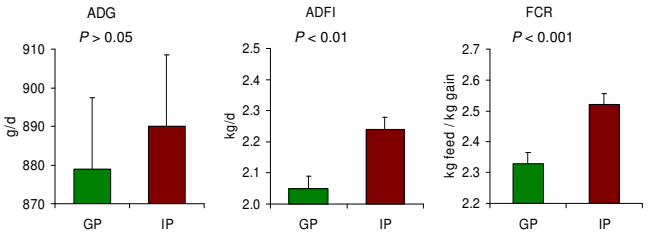
26 Swiss Large White male pigs originating from 12 litters (11 litters = 2 siblings/litter; 1 litter four siblings/litter) were allocated to two experimental groups:

- 13 Group-penned entire male pigs (**GP**)
- 13 Individually penned entire male pigs (**IP**)

Initial BW:	27.3 ± 0.4 kg
Final BW:	107.6 ± 1.2 kg
Feeding strategy:	a grower (27-63 kg BW) and finisher diet (63-107 kg BW) with a DE content of 15.8 and 15.4 MJ/kg DM, and a CP content of 18.6 and 16.6 g/100 g DM, respectively, were offered to all pigs *ad libitum*
Measured parameters:	
Growth performance:	average daily gain (ADG), average daily feed intake (ADFI), feed conversion ratio (FCR)
Carcass characteristics:	lean meat percentage, backfat percentage, organ weights
Meat quality parameters:	in the LM: initial and ultimate pH, colour, drip loss, shear force
Boar taint:	androstenone, skatole, indole levels in the backfat determined by HPLC
Statistical analysis:	on individual basis with the MIXED procedure of SAS experimental group as fixed and litter as random effect

RESULTS

Figure 1. Growth performance of group-penned (GP) and individually penned entire male pigs (IP)



Comments on Figure 1:
The ADG did not differ among experimental groups. However, IP consumed more feed than GP and were less efficient.

Table 1. Carcass characteristics of group-penned (GP) and individually penned entire male pigs (IP)

	GP	IP	SEM	*P*-values
Cold carcass weight, kg	82.1	82.7	1.19	0.57
Lean meat, %	57.4	56.4	0.40	0.09
Loin, %	25.4	24.8	0.24	0.10
Ham, %	19.0	18.8	0.23	0.11
Soulder, %	13.0	12.8	0.13	0.11
Belly, %	17.8	17.7	0.26	0.74
Subcutaneous fat, %	12.8	13.4	0.31	0.17

Comments on Table 1:
Carcass of GP tended to have a higher percentage of lean meat compared to IP.

Table 2. Meat quality traits of LM, androstenone and skatole concentrations in the backfat of group-penned (GP) and individually penned entire male pigs (IP)

	GP	IP	SEM	*P*-values
Initial pH	6.3	6.2	0.05	0.16
Ultimate pH	5.5	5.5	0.15	0.50
L*	50.3	50.9	0.48	0.21
a*	6.4	6.0	0.17	0.05
b*	2.6	2.5	0.17	0.56
Drip loss, %	4.5	4.7	0.41	0.71
Shear force, kg	3.8	4.1	0.11	0.01
Androstenone, µg/g	0.7 (≤ 0.2-1.9)	0.6 (0.3-1.2)	0.11	0.34
Skatole, µg/g	0.19 (≤ 0.03-1.23)	0.17 (0.03-0.50)	0.08	0.77

Comments on Table 2:
Compared to IP, the LM of GP was redder and more tender. Androstenone and skatole concentrations in the backfat did not differ among experimental groups.

This trial was a part of the project „ProSchwein". Project ProSchwein is acknowledged for supporting the present study. We thank the Federal veterinary office, Migros, Suisseporcs, Coop, Suisag, Federal Office for Agriculture, Pfizer Ldt., Proviande and Swiss Animal Protection SAP for financial support.

Bern University of Applied Sciences and Federal Department of Economic Affairs
Swiss College of Agriculture SCA and
Agroscope Liebefeld-Posieux, Research Station ALP

59th Annual EAAP Meeting, Vilnius
August 24th – 27th, 2008
Poster number 3327