EFFECT OF IMMUNOCASTRATION ON PERFORMANCE AND MEAT AND CARCASS QUALITY IN PIGS

E. Fàbrega[a], J.Tibau[a], M. Gispert[b], A. Velarde[b], M.A. Oliver[b], P. Suàrez [c], J. Soler[a]

[a] IRTA-CAP. Veïnat de Sies, S/N. 17121. Monells. GIRONA. SPAIN.
[b] IRTA-FT. Finca Camps i Armet. 17121. Monells. GIRONA. SPAIN.
[c] PFIZER Salud Animal. Alcobendas. 28108. MADRID. SPAIN.

59th EAAP Annual Meeting
Vilnius, Lituania, 24-28 August 2008

Session 14. Piglet Castration and Its alternatives

OBJECTIVE

To evaluate the effect of **immunocastration** on **performance**, **meat** and **carcass quality.**

INTRODUCTION

Animal welfare concerns are increasing the pressure on European pig producers to stop male piglet castration. Immunocastration is a technique used to delay puberty, produce untainted meat and reduce aggression, based on the administration of two anti-GnRH vaccines. Some studies suggested that the performance traits of immunocastrated males would be similar to those of entire males up to the second administration of the product and, afterwards, it would be closer to that of surgical castrates. However, not all studies have reported the same performance and meat and carcass quality traits.

MATERIAL AND METHODS

Four treatments were compared: entire males (EM, n=36); immunocastrated males (IM, n=36) treated with Improvac® at week 11 and 21 of age; surgical castrated males (CM, n=24) and females (FE, n=24). Individual daily feed intake (DFI) was recorded in pigs housed by treatment in groups of 12. Pigs were weighed every 3 weeks and back fat and loin depth ultrasonically measured from 74 to 176 days of age. Feed conversion ratio (FCR), daily weight gain (DWG) and protein and fat accretion were estimated. Standard carcass and meat quality evaluation parameters were recorded after slaughter at 180 days of age (% Carcass lean FOM, killing out, pH45 and pH24, drip loss and Intramuscular fat).

RESULTS

Performance Results

Figure 1. Daily Feed Intake per gender after the second administration of Improvac®

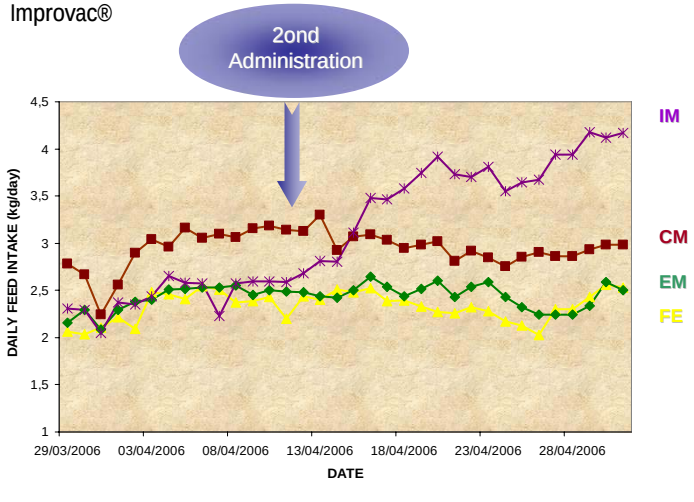

Table 1. Least Square Means of the productive performance traits per gender (from 74-176 days of age)

	CM	IM	EM	FE
Initial Body Weight (kg)	28.9^{b}	27.7^{ab}	26.7^{a}	26.8^{a}
Final Body Weight (kg)	119.4^{b}	122.1^{b}	110.4^{a}	107.5^{a}
Daily Weight Gain (g/day)	894.8^{b}	921.1^{b}	806.4^{a}	777.8^{a}
Daily Feed Intake (g/day)	2479.5^{c}	2323.4^{b}	2006.8^{a}	2041.5^{a}
Feed Conversion Rate	2.77^{c}	2.53^{a}	2.50^{a}	2.63^{b}

LSMeans with differetn superscripts are different at a minimum value of P<0.05

Carcass and Meat Quality parameters

Table 2. Least Square Means of the *in vivo* body composition measurements and carcass quality traits per gender

	CM	IM	EM	FE
In vivo backfat (mm)	14.8^{d}	12.8^{c}	9.8^{a}	11.2^{b}
In vivo loin depth (mm)	59.9	59.1	57.9	59.1
Carcass Weight (kg)	97.7^{b}	97.1^{b}	89.1^{a}	87.4^{a}
Killing out (%)	80.8^{c}	78.7^{a}	79.8^{b}	81.0^{c}
% Lean Fat´o´Meat'er	53.1^{a}	53.7^{a}	57.1^{b}	56.9^{b}

LSMeans with different superscripts are different at a minimum value of P<0.05

Table 3. Meat Quality parameters per gender

	CM	IM	EM	FE
pH 45 LT	6.29	6.27	6.26	6.25
pH 24 LT	6.34	6.33	6.36	6.32
Drip Loss (%)	4.82	5.98	5.28	5.36
Intramuscular Fat (%)	1.74^{b}	1.44^{a}	1.30^{a}	1.37^{a}

Values with different superscripts differ at P<0.001

CONCLUSIONS

- **IM males** presented a **higher food consumption** and **Daily Weight Gain** than **CM** and a **similar Food Conversion Ratio** compared to **EM**.
- **IM** presented a **higher in vivo backfat** and **lower percentage of carcass lean** than **EM,** but **similar** to those of **CM**
- Most **meat quality** parameters were **not affected** by immunocastration.
- **CM** presented the **highest** value of **Intramuscular fat**

According to the present results, **immunocastration could be a valid alternative to surgical castration**