

A comparison of vitality and growth performance before weaning of crossbred piglets obtained from Pietrain or crossbred Large White x Pietrain boars and Large White x Landrace sows

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EAAP - Annual meeting 2007, Dublin, Ireland Session 26 - poster 16

Introduction

For economical considerations, demand for semen from pure Pietrain boars increased dramatically over the last decade in France to reach 54% of doses sold by artificial insemination centres in 2006 (vs. 7% in 1999). Simultaneously, questions from pig breeders raised about consequences on piglets' vitality and specific care adaptations around birth.



Experimental design

- 4 batches of 24 crossbred LW x LD sows
- within each batch, artificial insemination with
 - Pietrain sires (PP),
 - Large White x Pietrain sires (LW x PP)
- farrowings not induced
- minimal assistance to piglets at birth
- cross-fostering within 48 h, taking into account the type of boar

Measurements

- gestation and farrowing durations (video recordings)
- number of born alive and stillborn piglets
- body weight (BW) at birth and at weaning (28 d)
- survival rate at weaning
- splayleg and lameness frequency

Table 1: Average performances

Sire	PP	LWxPP	RSD	Sire effect ¹
Parity	3.8	3.8	2.5	ns
Gestation duration, d	114.4	114.2	1.5	ns
Farrowing duration, h²	5.0	4.9	-	ns
Litter size				
total born	13.7	13.7	3.5	ns
weaned at 28 d	10.8	10.6	2.0	ns
Individual BW, kg³				
at birth	mean 1.56 SD ±0.34	mean 1.57 SD ±0.33	0.27 0.08	ns ns
at weaning	mean 9.1 SD ±1.7	mean 9.1 SD ±1.7	1.0 0.5	ns ns
Daily gain, kg/d/litter	2.94	2.86	0.33	ns

¹. Variance analyses (proc GLM, SAS 1990) with sire, parity and batch as main effects, and litter size as covariate for BW at weaning and daily gain.

². Boxcox transformation with sire, batch and assistance as main factors (proc TRANSREG, SAS 1990).

³. Within litter mean and standard deviation of BW.

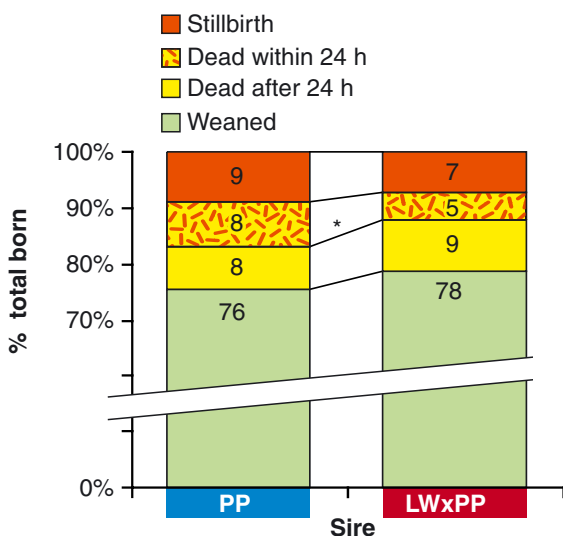


Figure 1: Piglets' survival from birth to weaning

Results and operational conclusions

- Gestation duration was not increased with PP semen
 - farrowings can be artificially induced in agreement with usual recommended protocols ;
- No difference in splayleg frequency (4% in both groups), in connection with a similar gestation duration ;
- No difference in litter size at birth in connection with a low sire effect on this criteria as indicated in literature ;
- No difference in average BW nor in variability both at birth and at weaning ;
- Significantly more losses in PP group within the post-farrowing 24 h. Not sufficient to induce a decrease of litter size at weaning in our experimental station.
 - improved care should be recommended for newborn piglets in farms using Pietrain sires.

