COMPARISON OF PRODUCTIVE PERFORMANCE, HEALTH STATUS AND Pig-MAP SERUM CONCENTRATION OF PROGENIES FROM PRIMIPAROUS AND MULTIPAROUS SOWS DURING THE NURSERY PERIOD

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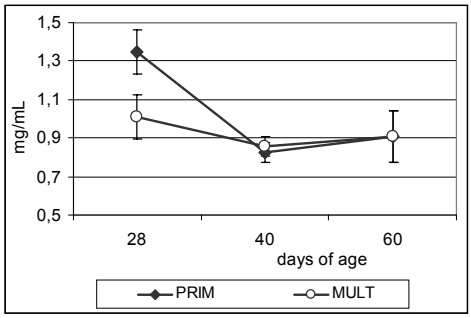
Introduction
Piglets from primiparous sows (PS) have lower body weight at birth and higher mortality rate during lactation than piglets from multiparous sows (MS). The difference observed may affect pig performance late in their fattening period. One cause of the poorer viability observed in PS piglets might be related to the lower immune transmission via colostrum which results in higher susceptibility to pathogens and lower health status. Acute phase proteins (APPs) have been demonstrated to be valid biomarkers of health status but no data is available of its value as biomarker for immune status.

Aim:
To compare the productive performance and mortality rate of piglets from PS or MS, during nursery. Pig-MAP concentration during post-weaning was assessed as a health and productive performance biomarker.

Material and Methods
A total of 400 LW x LD weaned piglets (8.2 ± 0.97 kg BW; 28 d of age) was divided into two groups based on litter parity: PS or MS. The average daily gain, feed intake, feed:gain ratio and mortality of piglets were controlled, and blood samples were taken at 28 (weaning), 40 and 60 d of age to determine the concentration of Pig-MAP in serum by ELISA (commercial kit from PigCHAMP Pro Europa S.A. Segovia, Spain).

Results
Productive performance: During nursery piglets from PS had lower ADG and FI and worse feed to gain ratio than piglets from MS. PS showed a poorer performance than MS sows for average daily gain (391 vs 456 g/d; $P<0.001$), feed intake (453 vs 500 g/d; $P<0.05$) and feed:gain ratio (1.20 vs 1.10 g/g; $P<0.05$) during the nursery period (28-60 d of age).
Mortality: A higher mortality was registered for PS than for MS piglets (2.5 vs 0.50 %; $P<0.10$), suggesting that the incidence of pathologies was higher for PS group.
APP concentration: At weaning Pig-MAP concentration was higher in piglets from PS sows than in piglets from MS sows (1.35 vs 1.01 mg/mL; $P<0.01$) but no differences were observed afterwards. The evolution of Pig-MAP concentration throughout the experimental period is presented in figure 1.

Figure 1. Pig-MAP (mg/mL) evolution in piglets from PS and MS.



Conclusions: Litters from primiparous sows showed poorer productive performance during the nursery period than litters from multiparous sows. Also Pig-MAP concentration at weaning, was higher in piglets from primiparous sows. Concentration of Pig-MAP in serum might be an indicator of health status and susceptibility to pathologies of piglets during lactation. Our data indicate that health status was lower and a susceptibility to pathologies higher for PS piglets than for MS piglets