Influence of mixing strategy on post weaning performances and agonistic behaviour of piglets

62nd Annual Meeting EAAP 2011, August 29 - September 2, Stavanger, Norway – Session 39 n°26

E. ROYER[1a], V. ERNANDORENA[1b], N. LE FLOC'H[2] and V. COURBOULAY[1c]

1 IFIP-institut du porc, (a) 31500 Toulouse, France, (b) 12200 Villefranche-de-Rouergue, France, (c) 35650 Le Rheu, France
2 INRA, UMR 1079, 35590 St-Gilles, France

www.ifip.asso.fr www.inra.fr

Mixing litters at weaning in order to reduce the within-pen variability in body weight can be associated with aggressive behaviour during the post regrouping period. An experiment was undertaken to study the effects of grouping strategy after weaning on social behaviour and growth performance of piglets.

Materials and methods

360 weaned crossbred piglets (7.9 kg and 28 d old) in a 40 d experiment.

Two treatments of 12 pens each:

- FAM : groups of 15 piglets from 4 litters
- MIX : groups of 15 piglets from 13 litters

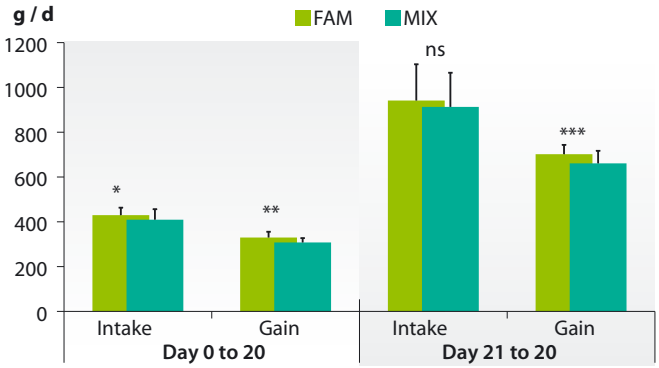
Housing in weaner pens (0.30 m^2/pig) and *ad libitum* feeding. Individual weighting at d 0, 20 and 40, and feed intake collection.

Frequency of aggressive behaviours: head-butts, bites, short and long fights, belly nosing, was observed 3, 30, 27 and 140 h after mixing. An agonistic index was calculated: AI = (HB*0.5) + (B*1) + (SF*2) + (LF*3) + (BN*0.5).

Plasma concentrations of haptoglobin, an acute phase protein, were determined at d 1 and 8.

Results

Effect of mixing strategy on piglet performance



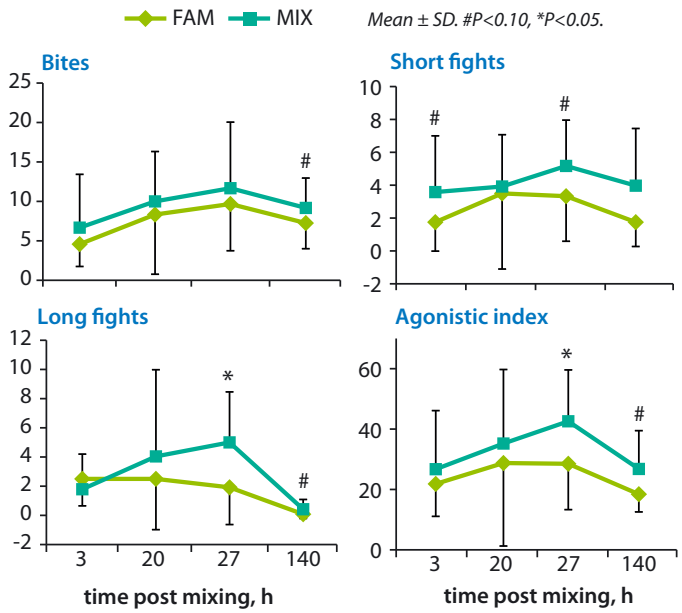
*Mean ± SD. *P<0.05, **P<0.01, ***P<0.001.*

FAM piglets had higher feed intake (P=0.04) in the period from d 1 to 20. Daily gain was improved from d 1 to 20 (P<0.01) and from d 20 to 40 (P<0.001). Overall, the FAM strategy improved the daily gain of about 32 g per piglet (516 vs 484 g; P<0.001).

FAM pigs had a higher final body weight (28.5 vs 27.3 kg; P<0.001).

Initial within-pen standard deviation in body weight was of 0.5 ± 0.2 kg in MIX group and 1.2 ± 0.1 kg in FAM group. Surprisingly, there was no significant difference across treatments at d 20 and at d 40.

Agonistic behaviours after regrouping



FAM pigs tended to have or had a lower frequency in bites 140 h after mixing (P<0.10); short fights: 3 h and 27 h after mixing (P<0.10); long fights: 27 h (P<0.05) and 140 h (P<0.10) after mixing. Head-butting and belly-nosing behaviours were similar.

Haptoglobin was not influenced by the way of mixing the piglets, possibly because an antibiotic treatment was given against cough.

Conclusion

It can be concluded that increasing excessively the number of litters per group might lead to reductions in welfare and performance. Mixed pens should be formed with piglets from a limited number of litters in order to reduce aggressions and improve post weaning performance.

Financial support was provided by the French national program for agricultural development. Colleagues from Ifip facility in Villefranche-de-Rouergue (France) as well as from INRA laboratory in St-Gilles (France) are thanked for their help during the experiments.