

14. Effects of grouping at a later age and split-weaning on the performance and nutrients intake of low birthweight piglets during a 7-week lactation in a multi-suckling system

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Recently, variation in the BW of piglets in a multi-suckling (MS) system was observed to be large. The current study investigated two intervention strategies, grouping of litters at a later age and split-weaning. We aimed to improve the BW gain of smaller piglets and thereby reduce the BW variation at weaning on day 49 postpartum (*p.p.*) by the two interventions. Eight batches of 5 sows with their litters were divided into 4 CTRL and 4 TREAT batches. In each litter, the second lowest (LBW) and highest (HBW) birthweight (BiW) piglets from both sexes were selected as focal piglets. Piglets in CTRL were grouped on day 8 *p.p.* and no split-weaning was applied; piglets in TREAT were grouped on day 13 *p.p.* and the three heaviest non-focal piglets per litter were split-weaned on day 35 *p.p.* Individual BW on days 0, 6, 27, 35, 48 *p.p.*, and individual DM intake of nutrients of piglets after split-weaning on days 42-43 *p.p.* were measured. Results showed that: (1) Throughout the lactation there were no differences in BW or BW gain between CTRL and TREAT, and no BiW × treatment interactions were found. (2) On days 42-43, piglets in TREAT tended to have lower DM feed intake than CTRL (439.3 ± 21.5 vs 502.4 ± 20.3 g/day, *P* = 0.072). LBW piglets had numerically lower feed intake than HBW piglets in both CTRL and TREAT, however the mean difference between LBW and HBW was numerically larger in TREAT than in CTRL; LBW piglets in TREAT had numerically lower feed intake than those in CTRL (401.5 ± 26.6 vs 493.4 ± 29.1 g/day). (3) On days 42-43, there was a significant BiW × treatment interaction in DM milk intake (*P* = 0.038). In CTRL, milk intake was 168.7 ± 17.6 g/day and 103.1 ± 13.6 g/day in HBW and LBW piglets respectively, and in TREAT milk intake was 197.4 ± 23.3 and 181.9 ± 15.5 g/day in HBW and LBW piglets respectively. In addition, fewer LBW piglets had zero milk intake on days 42-43 in TREAT compared to CTRL (4 vs 11). To conclude, the two interventions did not improve the BW gain of low birthweight piglets, however it helps to increase milk intake of low birthweight piglets in MS system.