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Effects of dietary seaweed extract supplementation in sows and post-weaned pigs on performance, intestinal morphology, intestinal microflora and immune status.

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Abstract

The present study investigated the effects of dietary supplementation of a seaweed extract (SWE) to sows and weaned pigs on post-weaning growth performance, intestinal morphology, intestinal microflora, volatile fatty acid concentrations and immune status of pigs at days 11 and 117 post-weaning. Gestating sows (n 20) were supplemented with a SWE (0 v. 10.0 g/d) from day 107 of gestation until weaning (day 26). At weaning, pigs (four pigs per sow) were divided into two groups based on sow diet during lactation and supplemented with a SWE (0 v. 2.8 g/kg diet), resulting in four treatment groups: (1) BB (basal sows–basal pigs); (2) BS (basal sows–treated pigs); (3) SB (treated sows–basal pigs); (4) SS (treated sows–treated pigs). Pigs weaned from SWE-supplemented sows had a higher average daily gain (ADG) between days 0 and 21 ($P < 0.05$) post-weaning compared with pigs weaned from non-SWE-supplemented sows. Pigs offered post-weaning diets (PW) containing SWE had decreased colonic *Escherichia coli* populations on day 11 ($P < 0.01$) and decreased colonic Enterobacteriaceae numbers on day 117 ($P < 0.05$). Pigs offered PW containing SWE had a greater mRNA abundance of MUC2 in the colon at day 11 post-weaning ($P < 0.05$) compared with pigs offered unsupplemented diets. In conclusion, these results demonstrate that SWE supplementation post-weaning provides a dietary means to improve gut health and to enhance growth performance in starter pigs. Dietary SWE supplementation increased ADG during the grower–finisher (GF) phases. However, there was no growth response to SWE inclusion in GF diets when pigs were weaned from SWE-supplemented sows. Copyright © The Authors 2011.

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