Livestock Science

The effect of dietary laminarin and fucoidan in the diet of the weanling piglet on performance and selected faecal microbial populations.

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http://www.sciencedirect.com/science/article/pii/S1871141310003550

doi:10.1016/j.livsci.2010.06.143

Abstract

A 2 × 2 factorial experiment (n = 12 replicates/treatment, 4 pigs/replicate) was performed to investigate the effects of laminarin and fucoidan, independently or in combination, on post weaning piglet performance and on selected microbial populations. At weaning the piglets (24 days of age, 6.4 kg live weight) were assigned to one of four dietary treatments: (T1) basal diet; (T2) basal diet with 300 ppm laminarin; (T3) basal diet with 236 ppm fucoidan; (T4) basal diet with 300 ppm laminarin and 236 ppm fucoidan. Pigs offered diets supplemented with laminarin had an increased daily gain ($P < 0.01$) and gain to feed ratio ($P < 0.05$) compared to un-supplemented laminarin diets during the experimental period (days 0–21). Pigs offered laminarin supplemented diets had an increased faecal dry matter and reduced diarrhoea ($P < 0.05$) during the critical day 7–14 period. Pigs offered diets containing laminarin had reduced faecal *Escherichiacoli* populations. There was a significant interaction ($P < 0.01$) on faecal *Lactobacilli* populations between laminarin and fucoidan. Pigs offered the fucoidan diet had an increased *Lactobacilli* population compared to pigs offered the basal diet. However, there was no effect of fucoidan on faecal *Lactobacilli* populations when included with laminarin. Overall, the reduction in *E. coli* population and the increase in daily gain suggest that laminarin may provide a dietary means to improve gut health in post weaning piglets.

This paper is published by *Elsevier* and appears in the journal *Livestock Science.* Full text can be obtained using the link below:

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doi:10.1016/j.livsci.2010.06.143