

Livestock Science

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The effect of dietary Laminaria derived laminarin and fucoidan on intestinal microflora and volatile fatty acid concentration in pigs.

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Abstract

The effect of laminarin and fucoidan was investigated, independently or in combination, on intestinal fermentation and selected microflora in pigs. Twenty-eight boars were assigned to 1 of 4 treatments ($n = 7$): (T1) control, (T2) control plus 300 ppm laminarin, (T3) control plus 238 ppm fucoidan, and (T4) control plus 300 ppm laminarin and 238 ppm fucoidan. There was a laminarin \times fucoidan interaction ($P < 0.05$) on *Enterobacteria* spp. in the proximal and distal colon. Pigs offered diets containing laminarin had reduced *Enterobacteria* spp. compared with pigs offered the control diet. However pigs offered the combination of laminarin and fucoidan had increased *Enterobacteria* spp. compared with those offered fucoidan alone. Pigs offered diets containing fucoidan had increased *Lactobacilli* spp. in the proximal ($P < 0.05$) and distal colon ($P < 0.001$) compared with pigs offered no fucoidan. Pigs offered diets containing fucoidan had increased concentrations of total volatile fatty acids in the proximal ($P < 0.01$) and distal colon ($P < 0.001$) compared with pigs offered no fucoidan. Overall, the intestinal *Enterobacteria* reductions and increases in *Lactobacilli* spp. obtained suggest that seaweed derived polysaccharides may provide a dietary means to improve gut health in pigs. Copyright © 2010 Elsevier B.V. All rights reserved.

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