

TITLE

DIFFERENCE IN IGA PRODUCING CELLS IN INTESTINE: COMPARISON OF PIGLETS FEEDED WITH AND WITHOUT FUNGAL DIETARY TREATMENTS DURING NURSERY

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CONTENT

BACKGROUND AND OBJECTIVES

The future ban on using antimicrobials and heavy metals as prophylactic measures pushes to find new approaches to maintain the gut health of piglets. By understanding how alternatives work, new feeding strategies could be developed. The main objective of this study was to compare the quantity of IgA producing cells - as local immunity indicator - in gut tissue of piglets supplemented with a fungal dietary ingredient, compared to control piglets.

MATERIAL AND METHODS

A novel fungal dietary treatment (mannanase hydrolyzed copra meal and rye overgrown with mycelium of *Agaricus subrufescens*) (Trouw Nutrition, the Netherlands) was added at 2 kg/mt to prestarter and starter diet of treatment group (FSG), keeping a control group (CG). Animals were humanely killed at 0 (basal group; BG), 15, 30 and 45 days of life. Finally, 10 basal (BG), 26 CG and 33 FSG animals were euthanized, and samples from jejunum, ileum and colon were fixed in formalin. Immunohistochemistry was done on tissues to detect IgA producing cells. The cells in 10 field of 10.000 μ m² were counted.

RESULTS

IgA producing cells increased 30 and 45 days after weaning in CG and FSG animals in all parts of the intestinal tract. At 15 days of life IgA cell number were significantly lower in FSG piglets compared to CG piglets and basal levels. IgA cells count was significantly lower in FSG piglets compared to CG piglets in all parts of the intestinal tract at 30 days of life and in the colon at 45 days of life.

DISCUSSION AND CONCLUSION

The addition of the fungal dietary ingredient in feed resulted in a significant lower number of IgA producing cells in jejunum, ileum and colon. These findings suggest a lower stimulation of intestinal local immune system or an anti-inflammatory response in treated groups.