

THE INFLUENCE OF NODULAR WORMS AND CARBOHYDRATES ON MORPHOLOGY AND PROLIFERATION OF EPITHELIAL CELLS IN THE LARGE INTESTINE OF PIGS

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Abstract. The influence of nodular worms *Oesophagostomum dentatum* infection and dietary carbohydrates on the morphology characteristics and epithelial cell proliferation in the large intestine of pigs was investigated. Thirty-two worm free weaners were randomly divided into four groups (A-D), of eight animals in each. Pigs in groups A (Control) and B (Infected) were fed Diet 1, and pigs in groups C (Control) and D (Infected) were fed Diet 2. The two diets were formulated: Diet 1 contained barley flour, oat husk meal plus soya bean meal (55% : 21% : 24%) and Diet 2 – barley flour, inulin and sugar beet fibre (SBF) (80.1% : 7% : 12.9%) plus soya bean meal (3:1). The two infected pig groups (B and D) were infected with 6000 infective larvae of *O. dentatum* and all 32 pigs were slaughtered 12 weeks p. i. The combination of *O. dentatum* infection and highly fermentable dietary carbohydrates affected the mucosal architecture, the epithelial cell proliferation and mucin secretion of the large intestine. These dietary carbohydrates in control pigs significantly influenced the tissue weight of caecum and colon. Infection with *O. dentatum* had significant effect on the gut wall architecture, because the changes in the affected gut sections corresponded directly to the number of worms present.

Keywords: *Oesophagostomum dentatum*, morphological and epithelial cell characteristics, dietary carbohydrates, pigs.