

# Effects of antibiotics addition on intestinal morphology and disaccharidase activity in broilers <sup>(1)</sup>

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## Abstract

The study emphasizes on the potential effects of antibiotics on intestinal digestion and integrity in broilers with respect to histological morphology and disaccharidase activity. A total of 192 one-day-old Arbor Acres birds were randomly allocated to one of the following four treatments for 42 days including control, bacitracin (55 mg/kg), nosiheptide (2.5 mg/kg), and oxytetracycline (OTC, 55 mg/kg) groups. The addition of bacitracin and nosiheptide caused an increase in body weight gain at 3 wk and 6 wk of age and OTC addition only promoted weight gain at 3 wk of age ( $P < 0.05$ ). The addition of bacitracin and nosiheptide had a marginal effect on disaccharidase activity in the jejunum and ileum at 3 wk of age ( $P < 0.1$ ). The addition of bacitracin significantly increased the villus area length of ileum, and the ratio of villus to crypt cell of jejunum and ileum at 6 wk of age when compared with the control group ( $P < 0.05$ ). The addition of nosiheptide reduced the thickness of the ileum mucosae at 3 wk of age and decreased the depth of crypt in the jejunum at 6 wk of age ( $P < 0.05$ ). On contrary, CTC thickened the muscularis mucosae and the depth of crypt in the jejunum at 3 wk of age ( $P < 0.05$ ). In sum, bacitracin and nosiheptide exhibit a beneficial effect on intestinal integrity by improving gut morphology.

Key words: Broilers, Antibiotics, Disaccharidase activities, Intestinal morphology.

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