

Light and scanning electron microscopy of the intestine of the young Red Jungle fowl (*Gallus gallus*).

ABSTRACT

Thirty males of Red Jungle Fowl (RJF) were divided into 3 equal groups, euthanized at day 1, 10 and 20 days after hatching. The morphometric analyses were performed at three different magnification levels. Different segments (duodenum, jejunum and ileum) and cecum were weighted and length of each small intestinal segments and cecum were determined at a macroscopic level. The mucosa of the intestinal segments was compared and contrasted using both, light and scanning electron microscopy. The villi height, villi surface area, crypt depth and muscularis externa were measured. The body weight was doubled at 10th day and again doubled at 20th day. The weight and length of intestinal segments were significantly higher throughout the experiment except the constant rate of the duodenal and jejunal lengths after 10th days. Relative to body weight, the organs weight and length were declined after 10th days. The duodenal villi height and surface area were greater than the jejunum followed by the ileum. The muscularis externa and crypt depth increased significantly at 10th day. However, the latter showed retardation thereafter. Day one intestinal villi appeared finger-like shape with zigzag arrangement, tongue-like and leaf-like shaped in 10 and 20th days, respectively. The villi distribution and patterns in the middle region of cecum were characteristic. The epithelial cells of the duodenal villi showed more activities and development than those on the jejunum and the ileum throughout the age. The body growth in RJF progresses very slowly while the relative intestinal segment weight and length failed to follow the body weight after 10th days. The duodenal mucosa shows better developmental features than the jejunum and the ileum.

Keyword: Red jungle; Intestinal morphology; Villus height; Surface area; Decline; Epithelial cell.