

Gut microflora and intestinal morphology of commercial broiler chickens and red jungle fowl fed diets containing palm kernel meal

ABSTRACT

From days 21 to 56, equal number of the commercial broiler chickens (CB) and the red jungle fowl (RJF) were fed diets containing either 0% palm kernel meal (Diet A) or 25% palm kernel meal (Diet B). On days 28 and 56, the number of microflora (*Lactobacillus* sp. and *Streptococcus* sp.) in the gut contents of ileum and caecum were taken from six randomly selected birds per sub-group. Same number of birds per genotype-regimen subgroup were used for the measurements of height and width of villi of the duodenum and ileum and, columns of the caecum samples.

The CB had significantly more *Lactobacillus* sp. in the ileum and *Streptococcus* sp. in the caecum and ileum compared to their RJF counterparts. Feeding of Diet B increased counts of *Lactobacillus* sp. and *Streptococcus* sp. in both caecum and ileum. The population of microflora in ileum for *Lactobacillus* sp. and in both caecum and ileum for *Streptococcus* sp. increased with the age of birds. The CB had significantly higher and wider villi of the duodenum and ileum and columns of the caecum segments, respectively, as compared to RJF. Birds fed Diet B had greater height and width of columns in the caecum. The height and width of columns in the caecum of birds fed Diet A and Diet B were not significantly different. Irrespective of age and genotype, there was a significant increase in the height and width of villi in the duodenum and ileum and, columns in the caecum with age.

Keyword: Broiler; Red jungle fowl; Palm kernel meal; Gut microflora; Intestinal morphology