

Growth evaluation of selected digestive organs from day one to four months post-hatch in two breeds of chickens known to differ greatly in growth rate.

ABSTRACT

The digestive organs of Malaysian Village Fowl (MVF) and Broiler Breed (BB) differ in body weight were studied grossly and histologically. Weight of digestive organs and length of small intestine were obtained from fifty male from each breed euthanased from first day after hatch to 4 months. At day 20 body weight of BB was five times greater than those of MVF. The differences between breeds for the weight of vitelline residue, proventriculus, gizzard, liver, pancreas, weight and length of small intestine segments for the absolute and relative to body weight at day one were also obtained. The liver, pancreas and intestinal segments of the two breeds showed increased in relative weight at the 10 days post-hatch and after that the relationship were reversed. At days 20-4 months post-hatch, all organs relative weight of MVF increased except jejunum in 56-120 days and ileum in 56 days. The same patterns observed for intestinal length in both breeds. Day one post-hatch relative lengths of all intestinal segments in MVF were higher than BB. The latter was dominantly showed larger proventricular glands, gizzard glands and gizzard lining membrane. In BB, the villi heights of intestinal mucosa were higher than that of MVF, except in ileum at days 20 and 56 post-hatch. The villus surface areas were constantly greater in BB, the crypt depths were greater in BB, except in 56 and 120 days. There were no different in thickness of muscularis externa in each intestinal segment at the day one and after the 20 days old.

Keyword: Breed; chicken; Digestive organ; Growth rate; Body weight.