



THE ROLE OF HIGH CRUDE FIBER RATION IN THE FERMENTATIVE DIGESTION SYSTEM OF DUCK

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ABSTRACT

The objective of this experiment was to determine the role of ration containing 5-20% crude fiber in the fermentative digestion system of male duck. One hundred forty four 6 weeks age male ducks consisted of 72 normal cecum and 72 caeectomy were used in this study. The ducks were divided into eight combination treatments, each treatment consisted of six ducks and replicated 3 times. Data were analyzed using ANOVA in a completely random design (CRD) of factorial pattern, the first factor was the level of crude fiber 5, 10, 15, 20%; and two second factor was the condition of cecum (normal and caeectomy). The mean value of the treatments were further analysed using Duncan's Multiple Range Test (DMRT) to determine the significant difference between treatments. The data of bacteria population and enzyme activity were interpreted descriptively using histogram. The results showed that the pH of digested material in the ilium, cecum and colon were 6.3-6.8; 6.32-6.90 and 6.67-7.20 respectively. Thus this condition was favorable for the cellulolytic bacteria growth. The results also showed the condition of caecum (normal vs caeectomy) had significant effects on body weight, ration consumption, weight and percentage of carcass. The result of caeectomy treatment indicated there were a potential fermentative digestion in the ilium. The histology preparation showed there were villi in the ilium and caecum and the decrease of lipid degeneration spot in the hepar. The population of cellulosic bacteria in the ilium, caecum and colon were 3.1×10^5 , 2.1×10^5 and 4.0×10^4 CFU/g respectively. The isolate found showed there was enzymatic activity CMC-ase 0.02-0.03 unit/g. Base on the tractus digestivus contents of ileum caeectomy duck, caecum normal duck and the colon caeectomy duck were resulted asetic, propionic, butyric acids and total VFA significantly different. The ration containing 5-20% crude fiber were not significantly different on asetic, butyric acids and total-VFA, whereas propionic acid significant different. At the blood plasma of normal duck and caeectomy, ration cotaining 5-20% crude fiber and combination treatments were significantly different on total-VFA concentration. Conclusion of this research was that duck was tolerant of ration with CF level until 20%, CF played role as nutrient and substrat, ration with CF 15% indicated good performance, condition of digestion tract was normal, it was found cellulolytic bacteria, enzymatic activity CMC-ase, and it was found VFA in tractus digestivus contents and blood plasma.

Key Words: Duck, Caeectomy, Crude Fiber, Cellulolytic bacteria, VFA