

Addition of various prebiotic sources on intestinal bacteria and growth performance of broiler given microparticle protein composed-diet

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Abstract. Intestinal bacterial and growth performance of broiler due to feeding diet composed of microparticle protein added with prebiotic sources was the purpose of the study. Fish meal and soybean meal were processed into micro in size. Dahlia tuber (DTE), porang tuber (PTE), and soybean meal (SME) extracts were the source of inulin, glucomannan, and soybean oligosaccharide, respectively. Four treatments tested namely, D1: 21% intact protein (control), D2: 18% microparticle protein + 1.2% DTE, D3: 18% microparticle protein + 0.3% PTE, and D4: 18% microparticle protein + 0.2% SME. A completely randomized design with 4 treatments and 6 replication (8 birds each) was assigned. Lactic acid bacteria (LAB), *E. coli*, protein digestibility, H/L ratio, and growth performance were subjected to ANOVA, and Duncan test at 5% probability. All parameters were significantly ($p < 0.05$) higher in dietary inclusion of prebiotic sources as compared to control (D1), except LAB population and H/L ratio in D3 were not different compared to other treatments, and feed consumption was same in all treatments. Inulin of dahlia tuber and soy-oligosaccharide of soybean meal extracts supplemented to diet composed of microparticle protein increase growth which is supported by the increase in LAB population and protein digestibility with lower H/L.

Keywords: bacterial composition, broiler, growth performance, microparticle protein, protein digestibility