

**Influence of effective microorganisms on performances, blood
biochemistry, digestive enzymes, immunity, antioxidant
indices, intestinal morphometric and microbial population of
growing Japanese quails.**

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ABSTRACT

The aim of this research was to investigate the influence of effective microorganisms (EM) on growth performance, microbial count, gut structure and some blood indices of Japanese quail. For a feeding study that lasted 38 days, 240 Japanese quail that were 10 days old were randomly assigned to three treatment groups, each consisted of four replicates of 20 birds. The experimental diets included a basal diet (first group), a basal diet supplemented with 10 and 20 ml EM /kg feed (2nd and 3rd groups, respectively). Quails receiving diets supplemented with 20 ml EM /kg feed exhibited significantly ($P \leq 0.01$) best live body weight, body weight gain, growth rate, performance index, and feed conversion ratio, with the least amount of feed during the study period. Quails fed dietary 20 ml/kg feed of EM had the lowest levels of total cholesterol, triglycerides, alanine transaminase, and aspartate transaminase, and the highest levels of hepatosomatic index, amylase, lipase, and trypsin. Morphological intestine length, intestine weight, cecum length, cecum weight, liver weight, gizzard weight, and glandular weight were higher in the group fed dietary 20 ml EM /kg feed, and this group also had lower abdominal fat. Furthermore, the group received 20 ml EM /kg feed had the lowest number of *Salmonella* and *Escherichia coli*, as well as the best antioxidant parameters, immune responses, and *Lactobacilli* number, when compared to the control group ($p < 0.05$). In conclusion, the inclusion of EM at a rate of 20 ml/kg feed led to improvements in performance, antioxidant, blood biochemistry, gut structure, immunological indices, and intestinal microbiota in growing Japanese quails.