

Influence of dietary supplementation of olive leaves extract (*Olea Europaea*) on performance, lipid profiles, digestive enzymes, microbial content, antioxidant indices and immune responses of growing Japanese Quail.

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ABSTRACT

The aim of the present study was to investigate the effects of incorporating an extract from olive leaves (*Olea europaea*), known as OLEx, as a natural additive in the diets of growing Japanese quail. The study examined various aspects of the quails' performance, including their productivity, levels of digestive enzymes, lipid profiles, liver functions, antioxidant levels, immune response, and gut ecology. A total of 360 Japanese quail chicks were divided into four treatment groups, each consisting of six replicates of 15 birds. The first group was given a standard diet without OLEx (control group), while the second through fourth groups were given the basal diet along with different concentrations of OLEx, being 150, 300, and 600 ppm, respectively. The findings revealed that quails fed diets supplemented with OLEx at concentrations of 300 and 600 ppm exhibited significantly higher body weight, body weight gain, and best feed conversion ratio. They also displayed a faster growth rate and had the best performance index compared to the control group. Furthermore, quails treated with OLEx at 300 and 600 ppm consumed less feed compared to the control quails. The lipid profiles (excluding HDL), plasma malondialdehyde levels, liver enzyme levels (ALT and AST), thiobarbaturic acid-reactive substances, and the population numbers of *Salmonella* and *Escherichia coli* were significantly lower in quails fed diets containing OLEx at levels of 300 and 600 ppm. Additionally, these quails exhibited higher antioxidant levels (GSH-PX and SOD), immune indices (IgG, IgA, IgM), and population numbers of *Lactobacilli* compared to the control group. In conclusion, the incorporation of OLEx at concentrations of 300 and 600 ppm resulted in improved productivity, antioxidant capacity, blood biochemical and immunological indices, as well as intestinal microbiota in growing Japanese quails.