Nutritional impacts of dietary oregano and Enviva essential oils on the performance, gut microbiota and blood biochemicals of growing ducks


Abstract:

Nowadays, there is much legislation in the world devoted to restrict the use of synthetic antibiotics in the poultry industry, which could reduce performance rate and production profits. Various phyto-biotic growth promoters have been proposed to serve as antibiotic alternatives with emphasis on plant extracts and essential oils. This study was conducted to assess the impacts of using the oregano essential oil (OEO) (comprised of 5% thymol and 65% carvacrol) and Enviva essential oil (EEO) (4.5% cinnamaldehyde and 13.5% thymol) as phytobiotic feed additives (PFA) on growth performance, cecal microbiota and serum biochemicals of growing ducks. In total, 800 11-day-old ducklings, housed in 20 floor pens, were allotted randomly into five dietary treatments: (i) A basal diet (BD) (control), (ii.) BD +50 mg EEO/kg, (iii.) BD +100 mg EEO/kg, (iv.) BD +150 mg OEO/kg and (v.) BD +300 mg O EO/kg diet. The growth performance traits were studied between 11 and 42 days of age. At the experiment end, 40 ducks were slaughtered (eight/ treatment) and cecal digesta and blood samples were collected to estimate the cecal bacterial populations and serum blood biochemicals. The results indicated that the tested levels of OEO and EEO did not display any significant effect ( P>0.05) on the duck’s final BW, BW gain, growth rate, feed intake, feed conversion ratio or survivability rate. Besides, the different levels of EEO and OEO decreased the cecal populations of Coliforms ( P

Keywords:

phytobiotics, feed additives, intestinal bacteria, waterfowl, plant extracts

Published In: