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Microbial and Oocyst Count in Feacal Material of Broilers Birds Administered Phytochemicals (Naringin and Hesperidin)

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Abstract : Gut Microbiota plays a vital role in animal health and welfare. This study investigated the effect of naringin and hesperidin administration on broiler birds. A total of 80 day – old broiler chicks were randomly divided into eight groups, with ten birds per group. Four groups were not inoculated but administered coccidiostat (1A), hesperidin alone (2A), naringin alone (3A) and a combination of naringin and hesperidin (4A) from day eight (8) to day fourteen (14) while four other groups (5A – 8A) were inoculated with 2 x 10^4 oocysts per 0.5ml of Eimeria tenella on the 16th and 19th day of age after they were administered conventional antibiotics and coccidiostat, naringin (50mg/body weight), hesperidin (50mg/body weight) and a combination from day 8 - 14. McMaster counting technique was used to count the oocysts, while pour plate technique was used to determine the bacterial load. The results showed a significant increase in their performance with an average weight ranging from 1.55kg – 2.00kg, microbial load also improved with colony count values from 3.5 x 104 - 4.5 x 10^4 CFU/ml. The study also found that the inclusion of naringin and hesperidin in the diets of broiler birds inoculated with coccidia oocysts significantly reduced the fecal oocyst counts, with the lowest count in combined treatment (8A) (10%) and indicating a lower degree of coccidiosis infection in the treated groups whereas control group (5A) had the highest oocyst count (35%). Mortality and Morbidity rate was 0% as none of the bird showed signs and symptoms. The reduction in oocyst counts could help to strengthen the immune system of broiler birds and limit the severity of coccidiosis infection, which could be an effective strategy for improving performance, immune function and mitigating the impact of coccidiosis infection in broiler birds.

Keywords : gut colonization, naringin, hesperidin, eimeria tenella, broilers
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