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CINNAMALDEHYDE AND A BLEND OF CAPSICUM AND TURMERIC OLEORESINS IMPROVE PERFORMANCE OF VACCINATED BROILERS SUBJECT TO COCCIDIOSIS

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Cinnamaldehyde (CI), capsicum (CA) and turmeric (TU) positively impact innate immunity. The combination of these 3 products should positively affect immunity and improve performance of birds infected by Eimeria. The objective was to evaluate the effect of a mixture of CA and TU oleoresins (PF1 = Proflora) and a product with CI (PF2 = Proflora Plus) on performance of vaccinated broilers challenged with coccidiosis. Broilers vaccinated against coccidiosis at d 1 were allotted to 5 treatments and challenged at d 14 with Eimeria spp. (40 birds * 12 cages/ treatment). The treatments were set as follow, doses expressed in ppm, with Bacitracin (BA), Nicarbazin (NI), Salinomycin (SA). T1 = un-supplemented. Starter diet (d 1 to 14): T2 = 55 BA / T3 = 100 PF1 / T4 = 100 PF1 + 10 PF2 / T5 = 10 PF2. Grower diet (d 15 to 42): T2 = 55 BA + 50 NI + 30 SA / T3 = 100 PF1 + 50 NI + 30 SA / T4 = 100 PF1 + 5 PF2 + 30 SA / T5 = 100 PF1 + 10 PF2 + 30 SA. Finisher diet (d 43 to 52): T2 = 55 BA + 50 NI + 30 SA / T3 = 100 PF1 + 50 NI + 30 SA / T4 = 100 PF1 + 2.5 PF2 + 30 SA / T5 = 100 PF1 + 5 PF2 + 30 SA. BW, BWG and FCR were recorded. Data were analyzed using GLM procedure of SAS. Pre-challenge, there was no difference between treatments in BW, BWG, FCR ($P > 0.1$). Post-challenge, FCR of T1 was deteriorated (+4.3%, $P < 0.01$) showing the positive impact of supplementations on vaccinated birds subject to coccidiosis. No difference between supplementations was observed for FCR ($P > 0.1$). Final BW of T1 was lower ($P < 0.01$) than T2 (-4.2%), T3 (-4.8%) and T4 (-16.4%), and tended to be lower than T5 ($P = 0.08$). A higher inclusion of PF2 post-challenge is not beneficial for the supplementation program. These results show that a mixture of CA and TU oleoresins alone or combined with adequate doses of CI can be used with vaccination to maintain broiler performance.