Boletín Técnico

*Effect of **Herbanoplex CP**® on broiler chicken's performance following a nondefined challenge or intestinal lesion score using a necrotic enteritis challenge model*

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SUMMARY

Two independent trials were conducted to assess the effect of **Herbanoplex CP®** (HB) on broiler chicken's performance using a 1) a nondefined challenge or 2) necrotic enteritis (NE) challenge model with intestinal lesion scoring. **Herbanoplex CP®** is a unique combination of phytocompounds (ground hops, wheat germ, and chicory). In Exp 1, 400-day-old male chicks (Cobb 500) were individually tagged,weighed, and randomly assigned to one of 20 pens (n= 20 birds/pen). Penswere randomly assigned per treatment group: 4 treatmentswith 5 replicates each (n = 100 birds/treatment).

T1: nomodification; T2: antibiotic growth promoter bacitracin methylene disalicylate (BMD) 11% at 0.5 kg/metric ton); T3: HB 1 kg/metric ton; and T4: HB at 0.5 kg/metric ton. On day 7, 14, 15 of life, all birds in all treatment groups were challenged by drinking water with a liter filtrate as a nondefined challenge model. Their performance was evaluated at day 35. T3 had a significant (P-value,0.05) increase in bodyweight gain (BWG) and a significant reduction in FCR compared with the rest of the experimental groups. Interestingly, chickens in T2, showed similar BWG and FCR when compared with chickens in T4. In Exp 2, 100-day-old male broiler chicks were divided into 5 groups and allocated in isolation cages. T1: birds without Clostridium perfringens (CP) challenge; T2: birds with CP challenge; T3: birds with CP challenge plusHB at 1 kg/metric ton; T4: birds with CP challenge plus HB at 0.75 kg/metric ton and T5: birds with CP challenge plus HB at 0.5 kg/metric ton. At day 13, all chickens were vaccinated with 10x coccidia oocysts. At day 14, all chickens were treated with a 10x dose of infectious bursal disease vaccine. From day 15 to day 19, chickens in challenge groups

(T2,T3,T4, andT5)were orally gavagedwith 108 cfu ofC. perfringens twice a day. At day 21, all chickens were euthanized, and NE intestinal lesion scores were recorded.

Chickens in T3 and T4 exposed to aNE challenge model showed significantly reduced lesion scores comparedwith the rest of the groups. Furthermore, in vitrominimal inhibitory concentration (MIC) assays revealed thatHB had the lowest MIC at both 24 h (390 mg/mL) and 48 h (625 mg/mL) against C. perfringens. **Herbanoplex CP®** showed similar response to BMDin a nonspecific challengemodel in promoting growth performance (Exp 1). Moreover, HB reduced the severity of intestinal lesion score using a NE challenge model (Exp 2), suggesting that the antibacterial properties against C. perfringens by HB can promote growth during microbial challenges.

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