

Effectiveness of PHYTOCEE® on Serum Metabolomics in Poultry : Effects on Beta-alanine, Trans-4-Hydroxy-L-proline and Formate

OBJECTIVE

To evaluate the effect of PHYTOCEE® on serum metabolites in broiler chicken

MATERIALS AND METHODS

A total of 1800 one-day-old male Ross 308 healthy broiler chicks were randomly assigned to 4 groups with 9 replicates having 50 birds each, namely G1-Control, G2-PHYTOCEE®-Low (Phyt-L), G3 - PHYTOCEE®- Medium (Phyt-M) and G4-PHYTOCEE®- High (Phyt-H). G1 was supplemented with basal diet; G2, G3, and G4 were supplemented with basal diet mixed with PHYTOCEE® at 0.3, 1.0, 2.0 kg/ton respectively. Serum metabolites viz. beta-alanine, trans-4-hydroxy-L-proline and formate were assessed using standardized assay protocols. Biomarker beta-alanine is involved in the synthesis of connopine carnosine helps in reducing oxidative - degenerative changes is made. Trans-4-hydroxyl-L-proline and formate are related to improved adaptive response and enhanced immunity respectively.

RESULTS

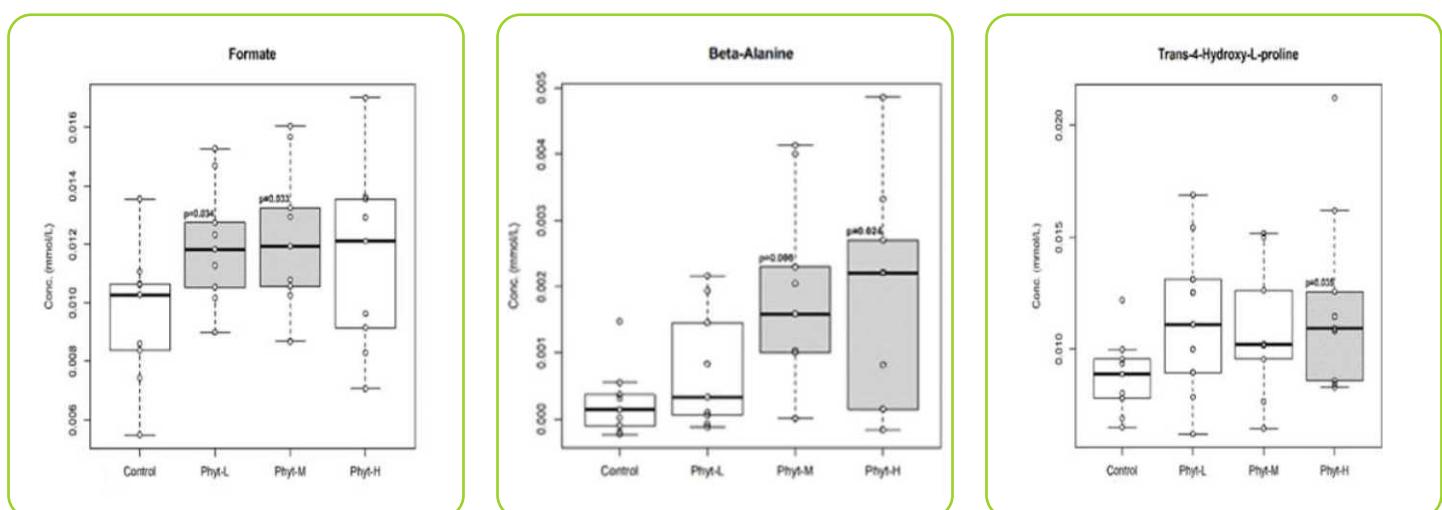


Figure. Boxplots representing the concentrations (mmol/L) of beta-alanine, formate and trans-4-hydroxy-L-proline in the chickens' serum, divided by group

CONCLUSIONS

PHYTOCEE® supplementation at higher dose levels (2 kg/ton) caused to elevate levels of serum beta-alanine, trans-4-hydroxy-L-proline and formate.

The studied serum metabolites mainly trans-4-hydroxy-L-proline and formate were proven to augment adaptative immune system in broiler birds.

OUTCOME

Therefore, PHYTOCEE® higher dose (2 kg/ton) could be suggested to supplement for enhancement of adaptative immune mechanisms for defence and survival of broilers.