

Impact of PHYTOCEE® on Cell Mediated Immunity in Poultry : Effects on Cutaneous Basophil Hypersensitivity

OBJECTIVE

To evaluate the effect of PHYTOCEE® on cutaneous basophil hypersensitivity test (CBHT, a biomarker for cell mediated immunity) in broiler chicken.

MATERIALS AND METHODS

A total of 840 one-day-old male Ross 308 broiler healthy chicks were randomly assigned to 9 groups with 6 replicates having 20 birds each, namely G1-Normal control, G2-G1+Vitamin C (200 g/ton), G3-G1+PHYTOCEE® (200 g/ton), G4-G1+PHYTOCEE® (300 g/ton), G5-Negative control, G6-G5+Vitamin C (200 g/ton), G7- G5+PHYTOCEE® (200 g/ton). Birds in G1 to G4 were reared under normal conditions and those birds in G5 to G7 were under heat stress conditions (32°C - 36°C) 8 hr per day (09:30 to 17:30 hrs) from day 8 to day 41. Birds in G1 to G7 were raised on normal commercial feed and concurrently supplemented with respective treatments. CBHT test was performed using standard protocol.

RESULTS

Effect of PHYTOCEE® on CBHT in Ross 308 broiler chicken

Groups	Cutaneous Basophil Hypersensitivity (% Response)
G1 - Normal Control	^a 21.48 ± 4.32
G2 - Normal Control + Vitamin C 200	^{ac} 26.15 ± 4.04
G3 – Normal Control + PHYTOCEE® 200	^b 40.21 ± 3.30
G4 – Normal Control + PHYTOCEE® 300	^{bc} 33.44 ± 3.35
G5 - Negative Control	^a 15.94 ± 2.70
G6 - Negative Control + Vitamin C 200	^b 38.56 ± 5.14
G7 - Negative Control + PHYTOCEE® 200	^{bc} 34.94 ± 4.63

Values are expressed as Mean ± SEM; n=11-12

a-d Means bearing different superscripts in the same column differs significantly (p<0.05) by one-way ANOVA followed by Least Significant Difference Test

CONCLUSIONS

PHYTOCEE® supplementation demonstrated cell mediated immunity in normal and heat stressed broilers as revealed by CBHT.

OUTCOME

Hence, PHYTOCEE® was proven to possess immunomodulatory properties, and therefore could be recommended to mitigate the adverse effects of heat stress in broilers.