

# Oxidative Stress Amelioration Efficacy of Ingredient of PHYTOCEE® in Broilers : *Withania somnifera* (Ashwagandha)

## OBJECTIVE

To investigate the oxidative stress amelioration effect of aqueous *Withania somnifera* root (WSR) extract in broiler chicks experimentally infected with *Escherichia coli* O78 @ 107 CFU/0.5 ml intraperitoneally.

## MATERIALS AND METHODS

A total of 120 one-day-old chicks were divided into 2 groups viz. Group A and B containing 60 birds each. The birds of group B were supplemented with 20% aqueous WSR root extract. The birds of group A were provided drinking water without any supplementation. After 7 days of age, the birds of both the groups were further divided into 2 subgroups (Group A into A1 and A2, Group B into B1 and B2) of 25 and 35 birds, respectively. All the chicks of groups A2 and B2 were injected with *E. coli* O78 @ 1 X 107 CFU/0.5 ml intraperitoneally, whereas chicks of group A1 and B1 were injected with 0.5 ml sterile normal saline solution intraperitoneally. The oxidative stress marker enzymes viz. superoxide dismutase (SOD), catalase, glutathione reductase (GR), and glutathione-S-transferase (GST) were assessed in erythrocyte lysate samples.

## RESULTS

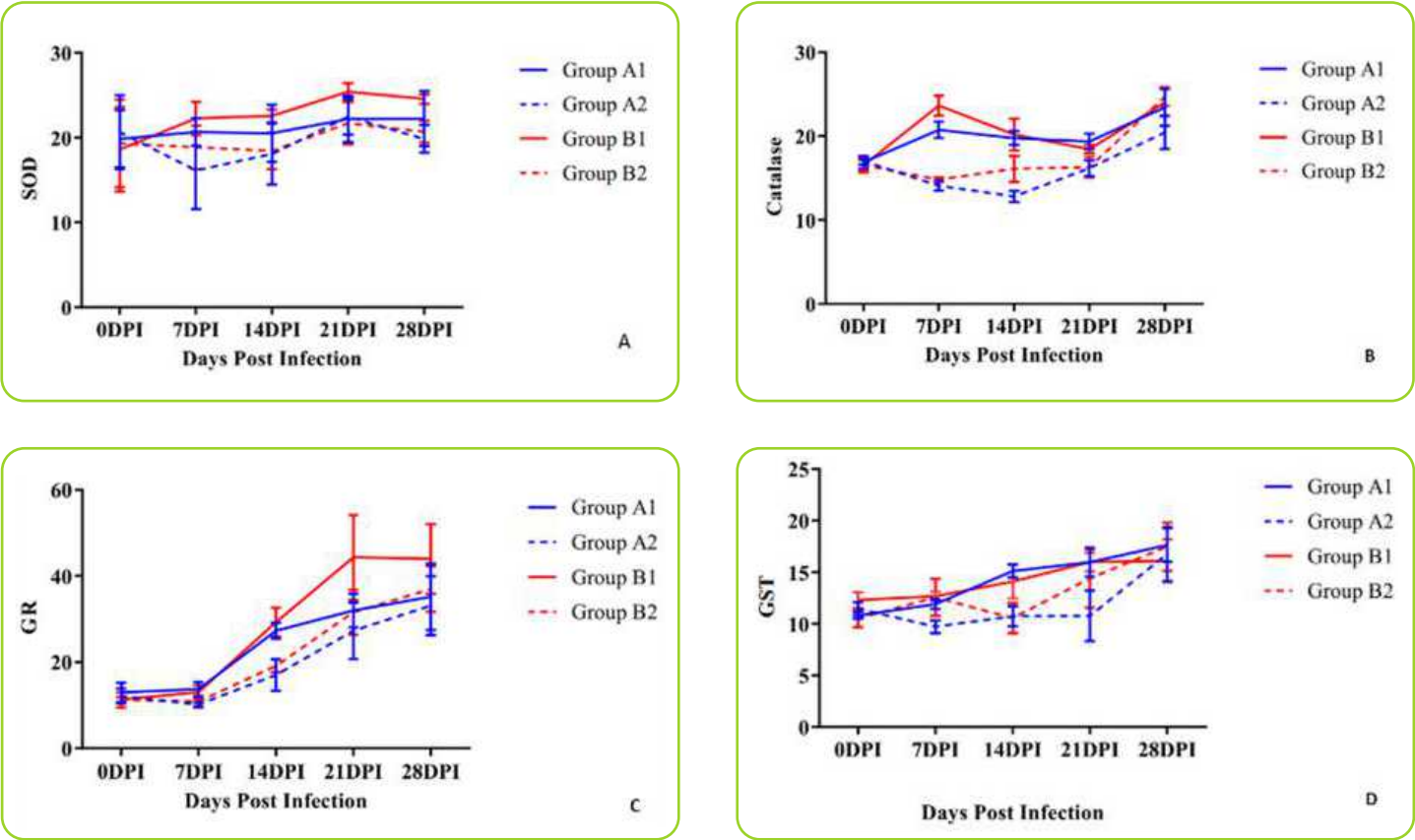


Figure : Mean SOD levels (A), catalase levels (B), GR levels (C), and GST (D) of broiler chickens in different experimental groups at different intervals

SOD, Superoxide dismutase (U/mg Hb); GR, Glutathione reductase (U/mg Hb); GST, Glutathione-S-transferase (U/mg Hb); DPI, Days post infection.

CONCLUSIONS

This study results depicted that antioxidant activity of WSR may be contributed in the prevention of oxidative stress due to *E. coli* infection in broiler chicken.

**Reference:**  
 Kumari M, Gupta RP, Lather D, *et al.* Ameliorating effect of *Withania somnifera* root extract in *Escherichia coli*-infected broilers. *Poult sci.* 2020;99(4):1875-87.