

SOME BIOCHEMICAL EFFECTS OF GREEN TEA POLYPHENOLS UNDER HEAT STRESS IN BROILER CHICKENS

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ABSTRACT

The present experiment was carried out to shed more light on the possible role of tea polyphenols in alleviating the negative effects of heat stress on broiler performance and oxidative status. Broiler chickens were raised under two different environmental temperatures (25 and 34 °C) for 3 days starting from 24 days of age. Each environmental group was further subdivided into two treatments (control and polyphenol, n = 16). The birds were tube-fed a same amount of diet containing 0 (control) or 0.5% polyphenols (polyphenon 60®) which were extracted from green tea. The results showed that polyphenols treated birds gained more weight but not significantly than the control and thus the feed conversion ratio tended to be lower in polyphenols groups in both environments. Plasma corticosterone (CTC) level was markedly increased in the high temperature and the polyphenols significantly reduced this effect. The abdominal fat was decreased significantly by the polyphenols in the high temperature and, interestingly, a same trend was obtained for hepatic thiobarbituric acid reactive substance (TBRAS), which is an index for lipid peroxidation. Plasma glucose level was increased by the high temperature but not by the polyphenols.