

## Changes in the Serum Enzyme Levels and Liver Lesions of Broiler Birds Reared Under Different Management Conditions

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**ABSTRACT:** *Metabolism of living organisms can be diverted with the changes in environment and nutrient intake causing serious diseases such as sudden deaths of broilers. High temperature and ad libitum feeding were the suspected etiological factors inducing sudden deaths. The objective of the study was to determine the occurrence of liver degeneration due to different management conditions. COBB 500 broiler strain was (n=90) divided into three groups and managed as control group (n=30), Treatment 1 (n=30, 35<sup>o</sup>C for 12 h per day) and Treatment 2 (n=30, fed ad libitum) from 26 days to 40 days of age. The blood samples (1.5 ml) were withdrawn from wing vein of birds with 6 replications. The serum Alkaline Phosphatase (ALP), Alanine Transaminase (ALT), Aspartate Aminotransferase (AST), Total Protein and Albumin were analyzed with commercial kits. Data were analyzed using General Linear Model in Minitab 14. Liver tissues of 14, 20, 33 and 38 days old birds were stained with Haematoxylin and Eosin for histopathological assessment. The ALP levels were increased in control group and Treatment 1 group with age but decreased in the Treatment 2 group. The ALT levels were decreased in control group and Treatment 1, whereas, increased in the Treatment 2 group. AST levels were increased in all three groups. The total Protein levels were increased in Treatment 2 but Albumin levels were remained similar throughout the lifespan of birds. Histopathological studies revealed that hepatic necrosis became common with the age of broilers.*

**Keywords:** *Broiler, liver function test, histopathology*

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