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Blood chemistry of medium-growing male and female chickens supplemented black soldier fly live larvae

Valentina Bongiorno[2], Marta Gariglio[2], Valeria Zambotto[3], Eleonora Erika Cappone[1], Ilaria Biasato[1], Sara Bellezza Oddon[1], Marwa Gaddés[4], Dominga Soglia[2], Manuela Renna[2], Laura Gasco[1], Francesco Gai[3], Claudio Forte[2], Carl Coudron[5], Stefania Bergagna[6], Lucrezia Dellepiane[6], Giulia Pagliasso[6], Achille Schiavone[2]

[1]Department of Agricultural, Forest and Food Sciences, University of Turin, Grugliasco 10095, Italy, [2]Department of Veterinary Sciences, University of Turin, 10095 Grugliasco, Italy , [3]Institute of Sciences of Food Production, National Research Council, Grugliasco 10095, Italy, [4]Higher Institute of Agronomic Sciences of Chott-Mariem, University of Sousse, Tunisia, [5]Inagro vzw, Ieperseweg 87, 8800 Rumbeke-Beitem, Belgium, [6]Veterinary Medical Research Institute for Piemonte, Liguria and Valle d'Aosta, 10154 Turin, Italy

Corresponding author: valentina.bongiorno@unito.it

Effects of live larvae provision on poultry chemical blood parameters have been poorly investigated. This study aims to evaluate the changes in blood chemistry parameters in medium-growing chickens supplemented black soldier fly (BSF) live larvae. Two hundred and forty 21d old sexed Label Naked Neck birds were divided into 4 experimental groups: females fed basal organic feed (BOF), males fed BOF, females fed BOF + 10% BSF live larvae supplementation based on the expected daily feed intake (DFI) and males fed BOF + 10% BSF live larvae supplementation based on the DFI (6 replicates/diet, 10 birds/replicate). Blood samples were collected at slaughter (82d old) from 2 birds/pen (12 birds/treatment). Serum samples were used for biochemical analysis. A compact liquid chemistry analyzer system (BT 1500 vet–Futurlab) was used to determine the concentrations of alanine aminotransferase (U/I), aspartate aminotransferase (U/I), creatinine total proteins (mg/dl), uric acid (mg/dl), cholesterol (mg/dl), triglycerides (mg/dl), gamma glutamyltransferase (GGT, U/I), phosphorus (mg/dl) and magnesium (mg/dl). Data were analyzed by GLMM (SPSS software, $P<0.05$). Overall, the blood parameters were not affected by the live larvae supplementation ($P>0.05$) in both sexes, thus being indicative of a good health status of the birds. Moreover, the GGT was detected in lower concentrations in the supplemented groups than in the control groups ($P<0.05$), suggesting a positive effect on the hepatic function. In conclusion, the live BSF larvae provision did not negatively affect the blood parameters of medium-growing chickens and could be beneficial for bird hepatic activity.

Keywords: poultry nutrition; medium-growing chickens; live larvae; blood chemistry.