

## ETHOLOGICAL AND BIOCHEMICAL STUDIES IN BROILER TURKEYS WITH HERBAL ADDITIVES OF OREGANO, ROSEMARY, AND LAVENDER

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### Abstract

In poultry farming, various herbs are used due to antibacterial, antifungal, and antitoxic actions, as well as to reduce stress and to stimulate growth in broilers. The aim of the present study was to monitor behavioral changes, some stress hormones (corticosterone, testosterone, and glucagon), and biochemical blood parameters under the influence of 1% dry herbal supplements of oregano, rosemary, and lavender in male turkeys broilers.

The experiment was included 60 male turkeys, divided into 4 groups - one control (I) and three experimental, with 1% dry additives of oregano (II OR), rosemary (III RZ), and lavender (IV LV) to an age of 18 weeks. The behavior of broilers was studied by a video camera and ethograms. Blood levels of corticosterone, testosterone, and glucagon were determined using commercial ELISA kits (for the relevant hormones) and an ELISA-reader. Biochemical parameters - blood glucose, cholesterol, total protein, triacylglycerol's, ASAT, ALAT, and GGT were determined by an automatic biochemical analyzer in the Laboratory Diagnostic Center. The statistical analysis processing of the results was performed by means of ANOVA using the GraphPad InStat 3.06 software at a level of significance  $P < 0.05$ .

After 18 weeks of treatment with 1% dry herbal supplements of oregano, rosemary, and lavender, no significant differences in the studied hormones were found, but a tendency to decrease corticosterone and glucagon levels was observed in the experimental broilers. Investigating their behavior, significantly more intensive behavior of feather cleaning was found in experimental groups: II (OR), III (RZ), and IV (LV), ( $P < 0.01$ ;  $P < 0.05$ ;  $P < 0.01$ ) and were observed in larger numbers of birds performing dust bath ( $P < 0.01$ ;  $P < 0.001$ ;  $P < 0.001$ ), compared to the controls. The number of aggressive acts in the control birds was significantly higher than in the experimental groups ( $P < 0.01$ ;  $P < 0.05$ ;  $P < 0.001$ ).

All these behavioral changes were the indicators of the more comfortable behavior in the experimental turkeys. Under the influence of 1% dry herbal supplements of oregano, rosemary, and lavender, the ethological and biochemical parameters of broiler turkeys during their puberty were improved.

**Key words:** Turkey broilers, Corticosterone, Glucagon, Behavior, Biochemical parameters.