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# -Behavioral and Physiological Effects of Mannan oligosaccharide and $\beta$ -glucan Prebiotic Combination on Heat Stressed Broiler Chickens

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## Abstract:

This study was conducted to evaluate the effects of mannan-oligosaccharides (MOS) and  $\beta$ -glucan (BG) prebiotic (agrimos) on the behavioral and physiological parameters in heat stressed broiler chickens. One hundred sixty eight of one-day-old broiler chickens of Ross 308 strain were obtained from a local hatchery. The experiment was started at 28-day old; where birds were exposed to heat stress (HS) and were randomly allotted to four dietary treatments containing 0 (control), 0.5, 2, and 4 g/kg MOS and BG prebiotic, respectively. Each treatment consisted of three replicates of 14 birds each. The results revealed that 0.5, 2 and 4 g/kg significantly increased walking, panting, wing elevation, and wing and leg but 4 g/kg agrimos only significantly increased drinking and preening, and decreased resting. Dietary inclusion of agrimos at a dose of 4 g/kg caused a significant increase in the percentage of lymphocyte, and decrease in phosphorus level. While at doses of 2 and 4 g/kg, treated chickens had a significant decrease in cortisol level together with a significant increase in hemoglobin level. Chickens fed with agrimos, regardless of dose, had significantly lower percentage of heterophils and heterophil/lymphocyte ratio. In conclusion, the current results support that MOS and BG prebiotic dietary supplementation may be considered as a protective management practice in the broiler chickens to control the negative effects of HS.

## Keywords:

Agrimos, Broiler, Heat stress, Behavior, Physiology

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