

## The effect of *Sanguinaria canadensis* and/or mannan-oligosaccharide on body weight and serum total antioxidant activity in broilers under heat stress

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*Sanguinaria canadensis* L (bloodroot), a herbalceous perennial that contains benzophenanthridine alkaloids, including sanguinarine and dihydrosanguinarine, has attracted interest for their antioxidant, antimicrobial and anti-inflammatory properties. Mannan-oligosaccharides (MOS) is derived from the cell wall of the yeast *Saccharomyces cerevisiae*. It was reported that MOS had effects on digestive system in animals such as protection of microfloral balance, activation of immune system and binding of mycotoxins. The aim of the study was to investigate the effects of the supplementation of *Sanguinaria canadensis* and/or MOS on body weight and serum total antioxidant activity in broilers under heat stress. A total of 72 one-day-old Ross 308 broilers were randomly assigned to 8 pens in two environmentally controlled rooms (4 pens per room). The dietary treatments were: Basal diet (control), basal diet plus 1 g/kg of the *Sanguinaria canadensis*, basal diet plus 1 g/kg of MOS, basal diet plus 1 g/kg of the *Sanguinaria canadensis* and 1 g/kg of MOS. At 15 days of age, the chickens in one of the two rooms were exposed to heat stress ( $34\pm 2$  oC) for 6 hours, while the chickens in another room were continuously kept in normal thermal environment, serving as control treatment ( $22\pm 2$  oC). Chicks were provided with ad libitum access to feed and water during the experimental period (42 days). The live weights of chicks were recorded at 21 and 42 day of the experiment. The blood samples were collected on day 42. During the study, body weights were significantly different and these differences were depended on diet and heat ( $p<0.001$ ). Groups exposed to heat stress had lower body weights, however, the supplementation of *Sanguinaria canadensis* and MOS improved this situation positively. During the study, it was also determined that there was an interaction between diet and heat (respectively,  $p<0.024$  and  $p<0.001$ ). With regard to serum antioxidant analysis, differences between groups were significant for CUPRAC analysis results ( $p<0.01$ ) and non-significant for ABTS analysis results. However, it was determined that heat exposure had significant effect in both method (respectively,  $p<0.001$  and  $p<0.05$ ).

### Biography

Tanay Bilal has completed her PhD from Istanbul University. She is a Lecturer and Chief in the Department of Animal Nutrition & Nutritional Diseases. She has published more than 59 papers in various journals.

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