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## Effects of Probiotics Feeding Levels on Meat Quality and Lipid Oxidation Stability of Breast Muscles from Heat Stressed Broilers.

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### ABSTRACT

Heat stress has negative impacts on meat quality attributes including oxidation stability. Since microbial probiotics supplementation results in positive impacts on growth performance and antioxidant property, it is hypothesized that this will improve quality of meat from broilers exposed to heat stress. The objective of this study was to determine the effects of probiotics levels on meat quality and oxidation stability of heat-stressed broilers. 336 1-day-old chicks were group-weighted and randomly assigned to 24 pens with three different diets (basal plus 0, 0.5, and 1.0g of PoultryStar [ $1.0 \times 10^5$  cfu/g of feed containing 4 strains of bacteria]). Heat stress began at 8 days up to 42d at 32 °C for 12 hr/day. At 42d, two birds were randomly selected from each pen and harvested. Breast muscles (*M. Pectoralis major*) were removed from carcasses at 24 hr postmortem. Measurements for cook loss, shear force, color, proximate analysis, peroxide value, 2-thiobarbituric reactive substances (TBARS), and phospholipid content were conducted. Probiotics feeding did not affect shear force, cook loss, or color ( $P > 0.05$ ). An increase in probiotic feeding level slightly decreased fat and ash contents of broiler breast muscles ( $P > 0.05$ ). In terms of lipid oxidation stability, an increase in probiotic levels led to a significant increase in peroxide values ( $P < 0.05$ ), whereas TBARS of breasts from broilers fed probiotic were lower than that of control broilers ( $P > 0.05$ ). This current study showed feeding probiotics to heat-stressed broilers could decrease fat content of broiler breasts and possibly inhibit formation of secondary lipid oxidation products.

### KEYWORDS

Probiotics, heat stress, oxidation stability, lipid oxidation, broilers, meat quality