

CONSTRUINDO SABERES, FORMANDO PESSOAS E TRANSFORMANDO A PRODUÇÃO ANIMAL

NUTRITIONAL ALTERNATIVES FOR IMPROVING CARCASS CHARACTERISTICS OF BROILERS SUBMITTED TO HEAT STRESS

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In tropical countries, heat stress in broiler chickens is a routine problem for production, causing productive and quality losses. Among the problems generated in poultry carcass quality is the increase in abdominal fat. The present assay evaluated the supplementation with L-arginine in diets with different levels of metabolizable energy (ME) to improve the carcass characteristics of birds submitted to the heat stress. A total of 384 chickens aged 29 days, males of the Cobb 500® lineage were used. The birds fed diets in a factorial schedule 2 (with or without supplemental L-arginine - 0.66%) x 3 (3000, 3150 and 3300 kcal ME kg⁻¹), with eight replicates of eight birds per experimental unit. The birds were submitted to heat stress in the range of 34 to 36°C for 6 hours (midday to 06:00 pm) throughout the experimental period (29 to 42 days). At 42 days of age the birds were slaughtered, evaluating the carcass (CY), breast (BY), thigh and drumstick (T+D) yields and the abdominal fat (AF). There was no interaction (P>0.05) of the factors for the evaluated characteristics evidencing that the possible action of supplementary arginine is independent of the energy level of the diet. For CY, BY and T+D no effects of dietary energy level (P>0.05) or supplemental L-arginine (P>0.05) were observed. Nevertheless, an increase of 11.2% in AF was observed to the rising the energy level of the feed from 3000 to 3150 and 20.2% when the energy was increased to 3300 kcal ME kg⁻¹ of feed. In addition, supplementing the diet with L-arginine, regardless of the level of ME used, there was a reduction (P<0.05) of 9.8% in AF, evidencing the positive effect of supplemental L-arginine on fat deposition in the carcass of broilers. Studies have shown that the use of supplemental L-arginine in the diet has an effect as a lipidic modulator in normal conditions of rearing of the birds. In the present study, it was possible to evidence this effect as a lipidic modulator also when the birds are under heat stress conditions, being an alternative for the reduction of AF by reducing the rates of lipid metabolism and deposition of fat in the carcass. It was concluded that the use of lower energy levels or supplementation of the diet with L-arginine allows the reduction of AF in birds raised under heat stress conditions from 29 to 42 days of age.

Keywords: abdominal fat, L-arginine, lipid metabolism, poultry, supplementation

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