



## Supplementation of a combination of lysolecithins, a synthetic emulsifier and monoglycerides on broiler performance and profitability during heat stress

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Faster growth and higher metabolic rates of modern broiler genetics result in more body heat produced, increasing predisposition to heat stress. A study was conducted to assess the impact of supplementing the diet of broilers subjected to heat stress with a combination of lysolecithins, a synthetic emulsifier and monoglycerides (LEX), on improving performance and ultimate production profitability. A total of 640 one-day-old males Ross 308 broilers were randomly assigned to two dietary treatments for 42 days: Control (corn-soybean-wheat diet) or LEX (Control + 500 ppm of LEX). Each treatment consisted of 16 pens of 24 birds each. Diets were produced in mash and fed in 3 phases: starter (0-15 d), grower (15-30 d) and finisher (30-42 d). A heat stress protocol was applied from 21 to 42 days. All birds were weighed at their arrival from the hatchery and at days 15, 30 and 42. Feed bags, as well as feed remaining in the feeders, were weighed at the same time to calculate feed intake and feed conversion ratio (FCR). An economic analysis was carried out to determine the income over feed cost (IOFC), considering the broiler price per kg of live weight, the feed intake and feed cost for every growing period (0-15 d, 15-30 d and 30-42 d), and the body weight at 42 d of both treatments. The heat stress challenge did not seem to affect broilers as expected because the performance as well as mortality achieved by both treatments was in line with Ross 308 performance objectives. At the end of the first feeding phase (0-15 d), birds from the LEX group tended to have higher BW than birds from the Control group (538 vs. 524 g;  $p=0.0985$ ). After 42 days, birds fed LEX tended to have a higher BW than birds from the Control (3094 vs. 3033 g;  $p=0.058$ ). ADG was significantly higher from 30 to 42 d (105 vs. 100 g/d;  $p=0.0172$ ) and tended to be higher over the entire study (71.4 vs. 69.9 g/d;  $p=0.0610$ ) for birds fed LEX compared to Control. Regarding the FCR, after the first 15 days LEX tended to show a lower FCR than Control (1.53 vs. 1.57;  $p=0.0983$ ), a trend which became significant from 30 to 42 d (1.80 vs. 1.85;  $p=0.0412$ ) but not for the overall trial period (1.54 vs. 1.55;  $p=0.1220$ ). The IOFC of the LEX treatment was 43 €/1000 birds higher compared to the Control group. These findings indicate, that adding LEX to diets of broilers raised under heat stress conditions, can support their average daily gain and final body weight resulting in a positive economic impact.