

EFFECTS OF FLUORESCENT LAMP AND TWO DIFFERENT LED LIGHTING ON THE RELATIVE WEIGHT OF HATCHING EGGS AND ONE DAY OLD CHICKENS IN BROILER BREEDING PAIRS

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Light has a significant effect on the reproduction of birds. In addition to the length of illumination, the wavelength of light can also play a significant role. Our study was to investigate two different wavelength LEDs (LED1: UV supplement, light intensity between 500-650 nm, 50% compared to LED2) of broiler breeding pairs and a fluorescent lamp (FL) in a large-scale, deep litter (6000 birds/house- 6 birds/m² - 9:1 sex ratio). The breeding egg weight (weight of 162 breeding eggs per group) and the relative weight of hatched chickens (weight of chickens hatched from 162 breeding eggs under the same hatching conditions in proportion to the weight of eggs per group) at 23, 31, 39 and 47 weeks of age were investigated. At 23 weeks of age, the highest egg weight was measured in the FL group (50.02 g). At 31 weeks of age, the LED2 (60.25 g) group had the highest egg weight, with significant differences ($p < 0.0001$) between LED1 (58.25 g) and FL (59.85 g) and between LED1 and LED2. At 39 weeks of age, the LED1 group (64.89 g) achieved the highest egg weight, with a significant difference ($p < 0.05$) between LED1 and FL (63.22 g) and between LED1 and LED2 (63.75 g). At 47 weeks of age, LED2 (65.94 g) achieved the highest egg weight. The relative weights of hatched chickens were highest at 23 weeks of age in the LED1 group (68.7%), at 31 weeks of age in the LED2 group (69.5%), at 39 weeks of age in the LED1 group (66.9%), and at 47 weeks of age in the LED1 group (69.5%). Although the highest egg weights were not always found in LED-lighted birds, the relative weights of hatching chickens were still the most prominent in LED1 and LED2 groups.