



*Research Summary June 24, 2020*

## **Hatchability and embryo mortality of birds provided red, white, or blue LED light during incubation**

### ***Purpose of the research***

It is no surprise that hatcheries want to maximize their production, with optimal hatchability, minimal embryo mortality and late hatching. Historically most incubation units are not equipped with lights, which could be of value to the developing embryo. The objective of this study was to determine if the use of LED lighting during incubation of multiple strains of chickens affected hatchability and embryo mortality

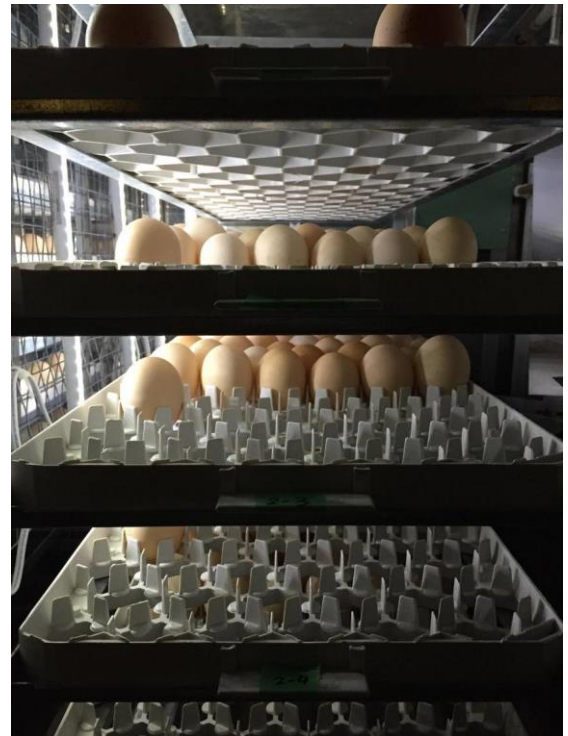


Photo: Xujie Li

### ***What we did***

We performed two replicate hatch's using the following strains: Ross 308, Cobb 500, Lohmann LSL Lite and a 1978 random bred broiler line from the University of Alberta (AMC). Eight incubators were used, setting 50 eggs per strain per hatch. Incubation lighting consisted of 4 treatments: dark (no light), white LED (4100K), dim to red LED, and dim to blue LED's from Once Innovation. Photoperiod used for incubators with light was 12L:12D. Chicks were pulled from the incubators at 512 h and counted to calculate hatchability, both as percent of set eggs and fertile eggs. All remaining unhatched eggs were opened to classify stage of embryo development.



Photo: Kayla Graham

## ***What we found***

- No differences were found between light treatments for hatchability or any of the embryo mortality categories.
- However, we approached statistical significance for the number of chicks found live after 512h represented as a percent of set eggs. Indicating there may be reason to re-evaluate the impact of incubation in the dark (10.3%) compared to incubation with red light (2.7%).
- Significant differences were found between strains for: hatchability, mid and late dead and chicks hatching late.
- Strain differences were expected as the genetic background differs greatly between the older genetics and current day broilers and layers.



## ***Conclusion***

The results of this study can conclude that lighting was not found to be detrimental to hatchability or embryo mortality in the strains of chickens studied.

## ***Funding***



## ***Who we are***



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