

## Lighting program as a management tool for broilers raised without antibiotics – impact on productivity and welfare

### Purpose of the study

An increasing number of broiler producers are switching to raised without antibiotic (RWA) production. Removing antibiotics from the feed can decrease performance and increase mortality in the flock. Providing conventionally raised broilers with longer dark periods has been shown to have positive impacts on bird production and mortality.

Therefore, the objective of this study was to determine if lighting program can be used to reduce the negative effects of removing antibiotics on the productivity, health, and welfare of broilers.

### What we did

We raised 8,064 as-hatched Ross 308 broilers until 36 d at a stocking density of 21kg/m<sup>2</sup>. Chicks were vaccinated at the hatchery against coccidiosis. Pen size was reduced until 10 d, and chick paper was put under supplemental feeders and drinkers so that chicks would come into contact with their excreta, with the aim that this would result in chicks ingesting the coccidiosis oocysts and increase their immunity.

Lighting treatments:

- 14L:10D
- 17L:7D
- 20L:4D
- 23L:1D



## What we found

**Body weight.** Final body weights were heaviest under 20L:4D.

**Feed intake.** Birds raised with 20L:4D ate more feed.

**Feed efficiency.** From 21-36 d birds given 17L:7D were most efficient and overall, from 0-36 d, birds under 14L:10D had the best FCR.

**Uniformity.** Birds raised with 23L:1D were more uniform.

**Mortality.** There was no impact on mortality.

**Dead on arrivals.** No difference in the number of DOAs was found.

**Condemnations.** The lowest incidence of condemnations were found with the 17:7D treatment, while the highest was in the 23L:1D treatment.

**Litter quality.** Litter quality was unaffected.

**Footpad score.** Providing 23L:1D resulted in more severe footpad dermatitis.

**Gait score.** Gait scores tended to be worse under 23L:1D and 20L:4D.

**Behaviour.** Birds reared with 23L:1D spent more time at the feeder and drinker. Birds given 20L:4D were least active, but spent the most time performing comfort behaviours

**Stress.** Birds reared under 17L:7D were the least stressed.

## Take home message

Our results suggest that the beneficial impacts of providing broilers with dark periods observed in conventionally reared broilers are still evident in RWA flocks.

Providing a minimum of 4 h of continuous darkness improves performance in RWA flocks. Longer photoperiods had negative impacts on bird well-being, as evidenced by poorer mobility, higher chronic stress, more severe footpad lesions, and changes in behaviour.

## Who we are



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