Research Summary

Understanding the effects of beak blunting and its potential to be used as an alternative to current beak treatment methods

Introduction

There is increasing pressure to ban the practice of beak treatment in the commercial egg industry and with this comes the need to find viable alternatives. Natural beak blunting by the inclusion of an abrasive material in the feeder or by using abrasive enrichment devices has been suggested as an alternative, but its effectiveness and impacts are not yet fully understood. Studies have found that the inclusion of abrasive materials in the feeder reduces beak length and sharpness in some poultry species, but does not affect body weight, feather cover, or behaviour. Enrichment devices such as blunting boards and pecking stones do not appear to cause a reduction beak length or sharpness and may not be effective methods of beak blunting.

Recently a feeding system for broiler breeders has been developed that promotes "natural beak smoothing" (Figure 1), which has been reported to result in a less sharp beak shape, decreased feed waste, and lower mortality compared to infrared beak treatment. However, to date there are no published scientific studies that verify these benefits in terms of reducing injurious feather pecking and cannibalism.

The objective of this study was to examine the effects of beak blunting on the beak characteristics, production, and welfare of Lohmann Brown-Lite and Lohmann LSL-Lite pullets and hens.

Methods

900 Lohmann Brown-Lite and 900 Lohmann LSL-Lite chicks were assigned to 1 of 3 beak treatments: sham untreated control (C), infrared beak treated (IR), or provided with a specialized beak blunting feeder, which had an abrasive inner feed pan (B; Figure 1). Pullets were housed in floor pens from 0 to 16 weeks of age. Data collected at 0, 2, 4, 10, and 16 weeks of age included body weight, beak length, beak histology, behaviour, heterophil/lymphocyte (H/L) ratios, and mortality. At 17 weeks of age, birds were transferred to conventional layer cages. During the laying period, body weight and feather cover were measured at 36 weeks of age. Mortality was monitored throughout the rearing and laying period. Due to increasing hen mortality resulting from cannibalism, the study was terminated at 36 weeks of age.

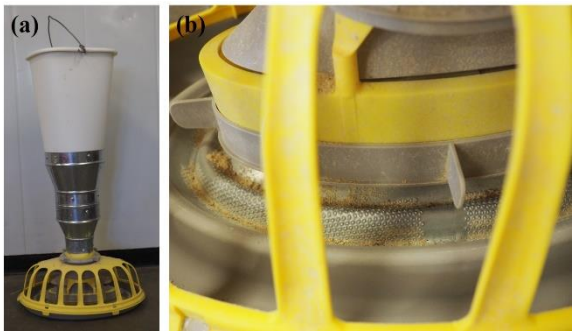

Figure 1. (a) Roxell® Vitoo feeder. (b) Abrasive surface of the inner feed pan.

Findings

Body weight. Body weight did not differ between except at 4 weeks of age when C pullets were heavier than B pullets.

Beak length and histology. Over the 16 weeks, IR pullets had shorter beaks compared to C and B pullets, with the latter two remaining similar. At all ages, B beaks showed no histological differences from C beaks. At 4 weeks, all IR beaks except one had healed completely.

Behaviour. No changes in behaviour were noted in pullets of any treatment at 10 wk of age. At 16 wk of age, only minor differences in low-incidence behaviours were noted.

H/L ratios. H/L ratios did not differ between the beak treatments at any age, indicating no differences in stress levels.

Feather cover. At 36 weeks of age, IR hens had better feather cover (important for thermoregulation and skin protection) compared to C and B hens.

Mortality. Mortality was highest in the C compared to B pullets (0-16 wk), although the primary cause of mortality was yolk sac infection and unrelated to beak treatment. During the laying period, there were no differences in total mortality between the three beak treatments; however, significantly more B hens died from cannibalism (10.42%) compared to IR hens (0%).

Conclusions

The results suggest that while the specialized feeder did not negatively impact body weight or welfare, it was not effective at blunting the beak, which poses welfare risks for outbreaks of severe feather pecking as the pullets mature and enter lay. The feeding system did not stop cannibalism during the lay period.

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About us

Special thanks to Egg Farmers of Alberta for funding this research.