



Research Summary

Attracting young turkey poults to feeders to avoid litter-eating

March 3, 2020

Purpose of the study

Litter-eating in turkey poults is a key concern during brooding as it can result in starvation and/or mortality caused by impaction of the digestive tract. The most common litter substrate reported to cause mortality in poults is wood shavings. High mortality rates during brooding can cause economic losses and raise welfare concerns for turkey poults. During brooding, poults may benefit from attractants to the feed to prevent litter-eating and direct consumption to the feed, thus avoiding mortality and aiding in adequate body weight gain during this period.

The objective of this study was to identify an effective feed-based enrichment that will encourage feed consumption and deter litter-eating during brooding. The feed-based enrichment used consisted of feed dyed green or red, LED lights on feeders, or red colored paper, top dressed with feed, used as a supplemental feeder.

What we did

This study consisted of one trial with 620 Nicholas Select turkey hens that were placed in pens with brooder rings and heat lamps during brooding (31 birds/pen; day 1-11). The birds were brooded on wood shavings and were provided with a primary metal tube feeder, a supplemental feeder to be used for early brooding only, and a drinker. Group body weight was measured at day 0 and 11 to determine average body weight. Bird behaviour was observed for 10 min intervals in each pen twice a day at day 1, 4, 7, and 10. On day 5, 2 birds/pen were euthanized, and contents

of the gizzard were removed and dried, then wood shavings were separated to determine the percent of wood shavings in the gizzard on a dry matter basis.



Feed-based enrichments (a) Feed dyed green (b) Feed dyed red (c) Red colored paper top-dressed with feed (d) LED lights on feeder (e) control pen

What we found

BODY WEIGHT. The feed-based enrichments used did not statistically impact day 11 body weight, however, numerical differences were noted. The LED light treatment poults had a higher body weight of 320g compared to the control, red feed, green feed, and colored paper treatment poults, which had average body weights of 311, 309, 301, and 314g, respectively.

BEHAVIOUR

DAY 1

The LED lights on the primary feeder drew poult to the primary feeder more so than any other treatment.

For the color paper top-dressed with feed treatment, poult preferred feeding at the paper (used as the supplemental feeder) compared to the primary feeder, which could be a concern as litter tended to accumulate on the paper feeder.

Poult with LED lights on the primary feeder spent the least amount of time feeding at the supplemental feeder on day 1 (but more at the primary feeder, which has less opportunity of being mixed with shavings).

DAY 4

On day 4 of brooding, poult continued to spend more time feeding at the colored paper than the primary feeder compared to the birds in the LED light and red feed treatments. From behaviour observations, the different feed-based enrichments did not impact the poult drinking behaviour or time spent pecking at the litter.



WOOD SHAVINGS IN THE GIZZARD. On day 5 of brooding, the percent of wood shavings in the gizzard contents was highest in the control group (58.4% of gizzard contents on a dry-matter basis) compared to poult given red dyed feed which had the lowest percentage of wood shavings in the gizzard (28.2%). All other treatments were intermediate.

Conclusions

Overall, our results indicate that feed-based attractants may be effective at reducing litter-eating in poult with feed dyed red being most effective at reducing litter-eating during brooding (based on gizzard contents).



(Left image) Gizzard contents showing presence of wood shavings from poult in control pen

(Right image) Gizzard contents showing little presence of wood shavings from poult in red feed pen

Numerically, body weight at 11 days was highest in the birds given LED lights on their feeders, which suggests that birds given this treatment were attracted to the feeders and may consume more feed, however, it was not completely effective at reducing litter eating as poult had wood shavings present in the gizzard (41.7%). Green dyed feed was not effective as birds had a numerically lower body weight and 43.5% of gizzard contents were wood shavings. Colored paper treatment poult had the second highest body weight and spent more time feeding at the supplemental paper than the primary feeder, however, wood shavings were still present in the gizzard (41.4%).

Who we are



Sameeha Jhetam is a masters student studying under Dr. Karen Schwean-Lardner at the University of Saskatchewan. She conducted this research in addition to her

M.Sc. research on the effect of stocking on the performance, health, and welfare of turkey hens.



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