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COMPARISON OF NESTING MATERIAL FOR C57BL/6J AND BALB/cJ

Poh, J. , Jaffar, M. & Bethur, N. , Depart. Production, Invivos Pte Ltd, Singapore

Having to spend majority of their lifetime in an enclosed space as compared to their wild counterparts, enrichment is essential for laboratory mice and one such form is the nesting material. It is to enhance their well-being by providing them with sensory and motor stimulation, through nesting materials that facilitate the expression of nest building behaviors. Mice build nest to have a secure place to rest and rear young. We focus on materials that can be autoclaved without compromising the quality and also, easily be used in existing housing systems which in this case, Individually Ventilated Cages (IVC). The nesting material used in this project will be C-fold tissue, Enviro-Dri and Cellu-nest.

Introduction

Mice in the wild build dome-shaped, complex, multilayered nests, this behavior is observed in the laboratory when provided the appropriate nesting material. In this experiment, we used materials that can be autoclaved without compromising the quality and also, easily be used in existing housing systems which in this case, using Individually Ventilated Cages (IVC). The nesting material used in this project are C-fold tissue, Enviro-Dri and Cellu-nest. Cellu-nest is a cellulose bedding made from pre-consumer specialty paper which is soft, clean, and comfortable. Enviro-dri is a controlled, manufactured product made up of cleanly cut 1/8-inch strips of 100% virgin kraft paper fibers. We first determine whether C57BL/6J and BALB/cJ mice build sustainable nests when given either of the nesting materials.


C-fold


Cellu-nest


Envrio-Dri

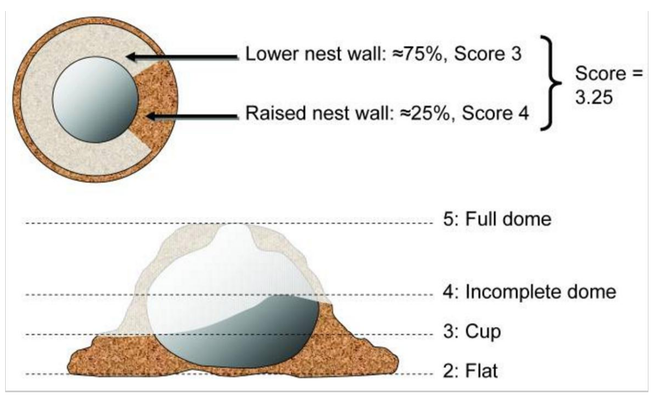
Methodology

Trio mating mice are placed in a clean cage with respective nesting materials at Day 1 for both BALB/cJ and C57BL/6J. They are split into 3 groups of 5 cages. Group 1 has 2 pieces of C-fold tissue while group 2 and group 3 with 8 grams of Enviro-Dri and Cellu-nest respectively. Nests are scored in a system ranging 1 to 5 whereby 5 is the most ideal nest for 5 days at the same time every morning. Experiment was carried out thrice and an average of the scores was used to obtain more accurate result.


C-fold


Enviro Dri

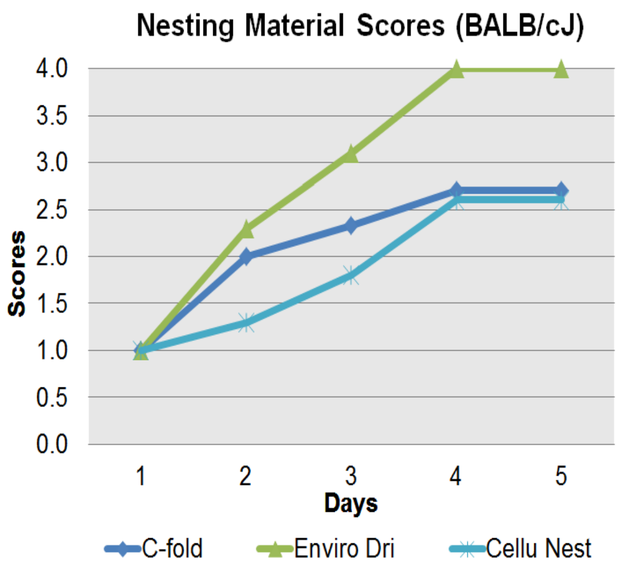

Cellu Nest

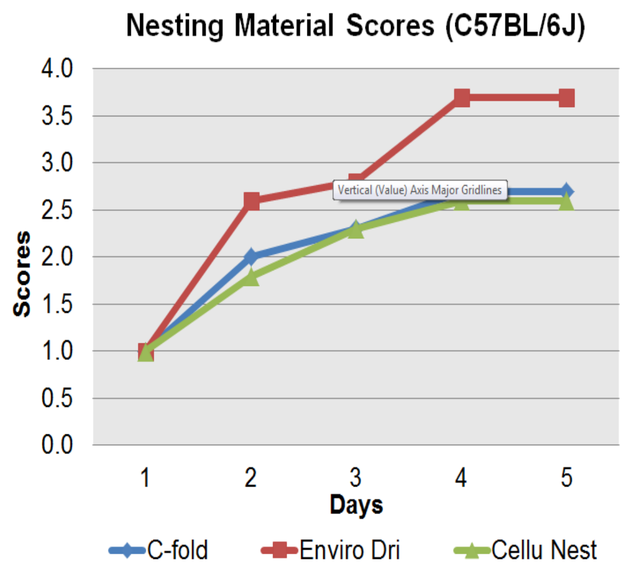


Nest scoring system

Results

Based on net scoring system, in BALB/cJ, Enviro-Dri shows the best nesting score of 4, followed by both C-fold and Cellu nest at 2.6. In C57BL/6J, Enviro-Dri shows the best nesting score of 3.6, followed by both C-fold and Cellu nest at 2.6. The nests with Enviro-Dri have raised walls built up around the nest cavity to form an incomplete dome shape while the other two have lower nest wall and a cup shape.
Enviro-Dri had a higher average scores among the 3 nesting materials in both BALB/cJ and C57BL/6J respectively. Interpreting the result, Enviro-Dri is the better nesting material for the mice to build up their nest.





Conclusion

In the 3 weeks experiment, it was observed that mice with Enviro-Dri made the best nesting material displaying better nest building characteristics compared to other 2 materials.

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