

Effect of Enrich n'Nest on C57BL/6JLaw Breeding Production

Rodolfo Velazquez, LAT and T. Lane Watkins, B.S., RLATG

U.T. MD Anderson Cancer Center Houston, Texas

Introduction

We have a gnotobiotic mouse facility with a defined gut flora that was established at U.T. MD Anderson Cancer Center in 1968.

This facility is for Experimental Radiation Oncology use only and is a true barrier. We rederived C57BL/6J mice from Jackson Labs in 1994 and established a breeding colony. We are now on the 34th generation and have our own substrain with the designation C57BL/6JLaw. Different enrichment items have been tried to help with C57 breeding production, and we decided to try a new enrichment item from The Andersons, Inc. The new product is a rolled paper product called Enrich-n'Nest. We compared breeding production in cages with Enrich-n'Nest and cages without any enrichment.

Materials

Mice are housed in cages on a Animal Care Systems rack in which cage ventilation is assisted by the thermodynamics of low air inlet and high air exhaust. The bedding is 1/4" corn cob bedding from The Andersons, Inc. The mice had access ad libitum to acidified, autoclaved RO water and Prolab 3500 autoclavable mouse diet from Ralston Purina. These mice have a defined gut flora that is free from all urease positive bacteria. The mating was brother x sister in each cage with the use of post partum breeding in which the male stayed with the female at all times. The enrichment was added to the cage when the breeding pair was set up. The amount of Enrich n'Nest added was the equivalent of one shot glass to the cage. The mice would unroll the paper and form a nest.



The amount of Enrich n'Nest added to the cage.



RESULTS

The breeding without Enrich n'Nest, we had 462 litters which produced 2,036 weanlings in which 49 did not reach weaning due to cannibalism or were runts. The breeding with Enrich n'Nest produced 232 litters with 1,127 weanlings with 16 not reaching weaning. The litter average is the number of weanlings divided by the number of litters.

	<u>Without Enrich n'nest</u>	<u>With Enrichn'nest</u>
Litter Average	4.41	4.86
Weanlings Lost	0.11	0.08
Pregnancy (Days)	30.1	24.2
# Pregnancies/Yr	12.1	15.1

CONCLUSIONS

The use of Enrich n'Nest in the cages of our C57BL/6JLaw breeding program seems to increase our production. There was a slightly higher litter average and pregnancies occurred in fewer days than without the enrichment. This resulted in a 27% increase in the number of mice produced over those produced without enrichment over the same period of time.