

# Survey of NH<sub>3</sub> Production in OptiMICE (OM) and double-size M.I.C.E. cages by Germain Rivard, DVM, PhD

- There is a direct impact of room humidity (RH) on generation of NH<sub>3</sub>
  - In any conditions, ammonia levels are below the unacceptable 22-25 ppm
- We produce 200 BALB/c per rack per week.  
We fail to observe cannibalization of the first litter.
- We produce 250 C57BL/6 per rack per week.  
We fail to observe barbering and ulcerative dermatitis.
- We produce 45 Fisher rats per S4 rack per week.

On-going bedding change occurs at

- every two weeks for breeders
- every three weeks for weanies



**Breeding Room:**  
6 OM set at 7-8 m/s ea. Vent Hose  
4 D8 set at 8-9 m/s ea. Vent Hose



**Breeding Room:**

**OM for C57BL/6 and BALB/c breeders**

**D8 for C57BL/6 and BALB/c weanies and Fischer breeders**



**C57BL/6 breeders**



**BALB/c breeders**



**BALB/c and C57BL/6 weanies**



**Fischer breeders**



**Room Conditions: 22 °C, 67% RH, 0 ppm NH<sub>3</sub>**



**Cage Conditions: 22 °C, 67% RH, 5 ppm NH<sub>3</sub>**  
Trio + 8 pups (12 days old); Bedding change 14 days ago



**Top: 3-week old weanies cage**  
**Bottom: 2-week old weanies cage**



**Cage Conditions: 22 °C, 67% RH, 19 ppm NH<sub>3</sub>**  
15 weanies (6 weeks old); Bedding change 20 days ago



**Room Conditions: 19.5 °C, 29% RH, 0 ppm NH<sub>3</sub>**



**Cage Conditions: 19.5 °C, 29% RH, 0 ppm NH<sub>3</sub>**  
Trio + 12 pups (14 days old); Bedding change 14 days ago



**Cage Conditions: 19.5 °C, 29% RH, 18 ppm NH<sub>3</sub>**  
15 weanies (6 weeks old); Bedding change 19 days ago



**Cage Conditions: 19.5 °C, 29% RH, 17 ppm NH<sub>3</sub>**  
RAT Trio + 8 pups (14 days old); Bedding change 13 days ago

