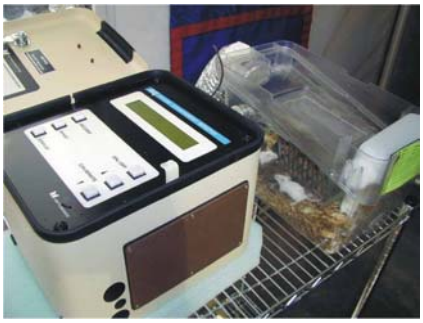
ANIMAL CARE SYSTEMS Inc.

Enrichment

Environment Appropriate to the Species

The M.I.C.E.® system's key components are vented isolation containers with enrichment structures and devices (M.I.C.E.). It has adequate and filtered passive ventilation that assures microenvironmental comfort, isolation, containment, and enrichment at cage level. The environmentally enriched cage/rack closed-system uses filtered passive ventilation by convection and HVAC-assisted direct exhaust venting to provide adequate air changes per hour without drafts or metabolic contaminants buildup. It safeguards animal and occupational health and well being.

Figure 1: We assess Good Air Quality for several bedding types. We use a Metrosonic AQ-502 to monitor CO_2, NH_3, temperature, and relative humidity in the cage. Various graphs and datasheets on aspen, corn cob, carefresh, etc. are available. Good air quality and movement combined with a NO particle generation and NO metabolic heat, moisture, and gases buildup fail to cause discomfort and biologic consequences.



Cage's structural features are the ridge across the front of the cage, the stainless steel screen in the back air exhaust, and the properly angled and located sipper tube. Enrichment devices include the optional tunnel-shape trough and the V-shaped feeder hanging in the middle of the cage. The enriched environment creates compartments in the cage that increase welfare of rodents. Enrichment improvements enhance social interaction, thigmotactic, exploring, burrowing, nesting, hiding, and climbing behaviors while reducing confinement-related stress. The M.I.C.E. caging system promotes expression of normal behaviors. It minimizes stereotyped behaviors while increasing behavioral repertoire to be used as phenotyping tool. Newly-arrived animal acclimation is faster (2 days) in M.I.C.E. cages. Because cage-changing periods can extend up to three weeks (6 mice per cage), these minimal disturbances alleviate stress in the animals. Reproductive performance increases significantly. There are more pups per litter, higher pup survival rate, faster weaning period, and much healthier, docile mice. Moreover, up to six males can be housed per M.I.C.E. cage without aggressive or barbering behaviors.

Testimonial by Robert Matyas, DVM, Director at Institute of Genetic & Molecular Biology, Strasbourg, France.

- We monitored temperature, relative humidity, ammonia and CO2 concentration in the cages occupied by more than 6 adult mice or with breeding trio. After 2 weeks, there are no significant accumulations of waste gases and bedding is still dry. The cage-changing period has been set up to every two weeks. An exception with breeding cages containing 2 females nursing more than 20 pups (more than 2 weeks old) is that we change every week.

- The enrichment features are great for the mice. We observed up to 10 adult males per cage or 2 mothers with their litters to find out that the cages features decrease aggression and increase maternity significantly.

The environment surrounding the animal is species-appropriate for size, space, temperature, humidity, ventilation, illumination, noise, husbandry and veterinary care.

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Vented M.I.C.E.™ Caging System

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