



Johns Hopkins University Animal Care and Use Committee

Research Animal Resources (RAR¹) Policy and Procedures for Handling Overcrowded Mouse Cages²

Purpose:

1. To provide operating procedures for the animal care staff to use in the event a cage becomes overcrowded.
2. To provide information to mouse researchers regarding the rules of cage population management.

Note – The expectation is that lab personnel who manage breeding colonies will keep track of the colonies' weaning and separation needs. While the animal care staff play a role in alerting researchers when a cage has become overcrowded, it is intended only to be a backup system to keep the university in compliance with regulations. **It is the responsibility of the researcher to keep up with their colony management.**

Definitions - An overcrowded cage is a cage that has:

- More than 5 adult mice, adult being **6 weeks of age or older**
- More than 9 weaned mice that are **less than 6 weeks of age**
- More than one litter of pups where the oldest litter is fully furred and moving about the cage
- An animal welfare concern due to too many animals in the cage

Options: When the PI or contact person is called regarding an overcrowded cage the following options

are available:

- A person from the lab may separate the animals into additional cages
- A person from the lab may euthanize some or all of the animals in the cage
 - < It is **not** acceptable to mark the cage for euthanasia and leave it overcrowded >
 - < It is **not** acceptable to pool multiple cages of animals into one cage to be euthanized >
 - < It is **not** acceptable to **remove the overcrowded tape** unless the cage is no longer overcrowded >

Information:

1. **Maximum adult mice/cage:** The maximum number of adult mice in a cage is 5. This is based on the average weight of an adult mouse and the size of the caging used in the animal facilities. Recommended spaces for commonly used group-housed animals are indicated in

¹ RAR refers to all mouse housing at Johns Hopkins University

² Approved by Johns Hopkins University Animal Care and Use Committee on 4/17/2013; current revision 4/17/2014

the *Guide for the Care and Use of Laboratory Animals*³. For the purposes of this document an **adult is defined as 6 weeks of age or older.**

2. **Contact information:** In addition to the PI's name and protocol number, the name and phone number of the lab member responsible for that particular cage must be on the cage cards. Laboratories are responsible for updating this information. RAR uses this information to contact the laboratory if a cage is overcrowded.
3. **Birth/wean dates:** Investigators are responsible for marking the birth and/or weaning dates on their breeding cages. This date is critical for breeding programs with tight timelines for weaning and the birth of subsequent litters.
4. **Post-partum estrus:** Post-partum estrus is a 24 hour period after parturition during which the female is fertile and receptive to mating. A dam that is with the male when she delivers litter A will most likely be mated in the 24 hour period. Therefore, she will be due to deliver litter B at 21 days gestation. Litter A should be weaned concurrent with the delivery of litter B.
5. **Weanling housing:** Mice are not considered adults at weaning. For the purpose of the allowable number of mice per cage, mice are considered adults at 6 weeks of age and therefore are housed with a maximum of 5 mice per cage. Prior to 6 weeks of age they are not yet adults and when weaned prior to genotyping they may be separated by sex and housed at greater than 5 per cage with a **maximum of 9**. In this case the **date of birth must be written clearly on the cage** card to document that they are not yet adults. If the age of the mice is unclear, they must be housed at a maximum of 5 per cage.
6. **Trio or harem breeders:** If using trio or harem breeding schemes, and more than one female has a litter, the cage must be monitored for welfare concerns such as : trampling, fighting, high levels of filth, the ability of the animals to make normal postural adjustments³, or inevitable overcrowding as the pups grow. To avoid these conditions, one dam with her litter should be separated by the time the oldest litter is about 10 days old. The male may be kept with one of the females. If the birth date or wean date are not on the cage card the cage will be marked as overcrowded when the oldest litter begins to move about the cage.
7. **Timeline for separating:** Laboratory personnel must separate an overcrowded cage within 2 days of being notified. However, a severely overcrowded cage must be separated within 4 hours or sooner if indicated by the conditions (see below).
8. **Technical service fee:** If RAR must separate the cage, due to the lack of availability or action by laboratory personnel, a technical service fee will be charged to the job number on the census sheet.
9. **Chronic overcrowding:** Chronic failure of a laboratory to respond to RAR's request to separate overcrowded cages, or removal of "Overcrowded" tape without separating the cage will be referred to the Institutional Animal Care and Use Committee (IACUC) as a compliance concern.
10. **Clinical call:** If at any time the animals require medical attention, a clinical call should be placed by calling 410-955-3273.
11. **Exceptions** to this policy must be justified in the protocol or in the Mouse Breeding Colony form.

³ Guide for the Care and Use of Laboratory Animals, NRC. National Academy Press, 2011. P57.

Procedures for Severely Overcrowded Cages:

1. A severely overcrowded cage is one in which delay could result in harm, illness, or extreme discomfort to the animals in the cage, such as: trampling or cannibalizing of pups, fighting, or moisture build up inside the cage. RAR will use the contact information on the cage card to notify the laboratory immediately. The animals must be separated *within 4 hours*. In cases where a 4 hour period could result in animal death, the cage will be separated immediately and a technical services fee will be charged to the job number on the census sheet.
2. The lab **must separate or euthanized** the animals. It is **not acceptable to mark the cage for euthanasia and leave it overcrowded** for RAR to euthanize.
3. RAR will record whether they reached a person or left voice mail, the name and phone number of the individual in the laboratory that was contacted, and the date & time of the call.
4. RAR will mark the cage with an "OVERCROWDED" label and record the date, time and their initials on the label.
5. If someone from the lab cannot be located or does not respond within 4 hours, with supervisor or designee approval, RAR will proceed with separating the animals and notify the supervisor. Males will be placed in separate cages from females. A technical service fee will be charged to the job number on the census sheet.
6. Cage cards with information identifying the home cage will be placed on the new cages.

Procedures for Mild to Moderately Overcrowded Cages:

1. A mild to moderately overcrowded cage is one in which the number of animals exceeds the number identified in this policy.
2. On Day 1, using the contact information listed on the cage card, RAR will notify the laboratory that there are overcrowded cages that must be separated within 2 days.
3. RAR will record whether they reached a person or left voice mail, the name and phone number of the individual in the laboratory that was contacted, and the date & time of the call.
4. RAR will mark the cage with an "OVERCROWDED" label and record the date, time and their initials on the tape.
5. The lab will have 2 days to separate or euthanize the animals.
6. On Day 3, with supervisor or designee approval RAR will proceed with separating the animals and notify the supervisor or designee. Males will be put into separate cages from females. A technical services fee will be charged to the job number on the census sheet.
7. Cage cards with information identifying the home cage will be placed on the new cages.