



Johns Hopkins University Animal Care and Use Committee

Overcrowded Mouse Cage Management¹

Purpose:

Procedures for Animal Resources (AR) to use to manage overcrowded cages. To provide information to mouse researchers regarding the rules of cage population management. This is not to be used as a notification system for mouse breeders to use to manage their breeding colonies.

Definitions:

An overcrowded cage 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 (~10 days of age)
- more than one litter of pups when the pups are 21-23 days old
- an animal welfare concern due to too many animals in the cage

A severely overcrowded cage has:

- conditions that 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.

Options:

When the PI or contact person is notified regarding an overcrowded cage, the following options are available:

- A lab member may separate the animals into additional cages
 - A lab member 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-

¹ Approved by Johns Hopkins University Animal Care and Use Committee on April 17, 2003; current revision August 18, 2022

housed animals are indicated in the *Guide for the Care and Use of Laboratory Animals*².

2. **Contact information:** In addition to the PI's name and protocol number, the name and phone number of the contact person must be on the cage cards. Investigators are responsible for updating this information. AR 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 before delivery of litter B.
5. **Weanling housing:** Mice are not considered adults at weaning. Prior to 6 weeks of age, they are still pups. When weaned prior to genotyping they may be housed at a **maximum of 9 weanlings per cage**. This is based on the average weight of weanling mice and the size of the cages. The **date of birth must be clear on the cage cards**. If the age of the mice is unclear they must be housed at a maximum of 5 per cage. At 6 weeks of age the maximum mice per cage is 5 regardless of whether they have been genotyped or not.
6. **Trio breeders:** If more than one female has a litter, each dam with a litter must be separated before the oldest litter is moving about the cage, which begins at about 10 days of age. A cage will be marked as overcrowded when the oldest litter begins to move about the cage. The male may be kept with one of the females. Litters should be weaned when the pups are between 21-23 days of age.
7. **Harem breeders:** pregnant dams will be separated until a trio breeding setup remains, then #6 will be followed.
8. Alternatively, for trio or harem breeders, all visibly pregnant females are moved to their own cage to prevent housing multiple pre-weanling litters.
9. **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).
10. **Technical service fee:** If AR must separate the cage, due to the lack of availability or action by laboratory personnel, a technical services fee will be charged to the job number on the census sheet.
11. **Chronic overcrowding:** Chronic failure of a laboratory to respond to AR'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.
12. **Clinical call:** If at any time the animals require medical attention, a clinical call should be placed by calling 410-955-3273.
13. **Exceptions** to this guideline must be justified in the protocol or in the Mouse Breeding Colony form.

Procedures for Severely Overcrowded Cages:

1. A severely overcrowded cage is one in which a delay of separation could result in harm, illness, or extreme discomfort to the animals in the cage, such as: trampling or

² Guide for the Care and Use of Laboratory Animals, NRC. National Academy Press, 2011. P57.

cannibalizing of pups, fighting, or moisture build up inside the cage. AR 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 AR to euthanize.
3. AR 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. AR 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 AR will proceed with separating the animals and notify the supervisor. Males will be placed in separate cages from females. A technical services 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 numbers identified in this guideline.
2. On Day 1, using the contact information listed on the cage card, AR will notify the laboratory that there are overcrowded cages that must be separated within 2 days.
3. AR 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. AR 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 AR 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.