IACUC POLICY
MOUSE BREEDING AND CAGE DENSITY

The Public Health Service (PHS) and the Association for Assessment and Accreditation of Laboratory Animal Care International (AAALAC) require that institutions base their animal care and use programs on the Guide for the Care and Use of Laboratory Animals (Guide).

PHS Policy (IV.A.1.)
The PHS requires institutions to use the Guide for the Care and Use of Laboratory Animals (Guide) as a basis for developing and implementing an institutional program for activities involving animals.

The University of Pennsylvania Institutional Animal Care and Use Committee (IACUC) must comply with the national standards and recommendations contained within the Guide when establishing mouse cage populations. The IACUC and the University Laboratory Animal Resources (ULAR) have established the following policy for mouse housing and breeding.

DEFINITION OF AN ADULT MOUSE
An adult mouse is any mouse that is of weaning age or older and able to eat solid food and reach the water source. Regardless of the cage size used, a litter of mice from birth up to weaning age will be counted as ONE (1) adult mouse.

There may be instances where large litters are nearing the weaning date and the increased pup numbers have resulted in a heavily soiled cage. In these cases, ULAR Veterinarians or Husbandry Management may authorize that breeding cages be changed prior to the scheduled weekly cage change.

BREEDING

In order to provide for the best welfare of the research animals and to allow investigators opportunity to generate data without undo restrictions, several breeding schemes are permitted. The investigator should choose the best breeding scheme for each particular project. Responsible colony management is required.

- **Monogamous Pairing** of ONE (1) adult male and ONE (1) adult female.
  - Offspring generated by this breeding scheme **may be weaned at 25 days, but definitely before 28 days**.
  - Preferred method to prevent overcrowding
  - Offers an extended nursing time for inbred strains known to be small and slow growing
  - Maximizes productivity of females by utilizing post-partum estrus; allows for the identification of the dam for the litter

- **Breeding Trio** of ONE (1) adult male and TWO (2) adult females.
  - Pups **must be weaned at 21 days** by investigators’ staff in order to prevent excessive pup numbers after 3 weeks.
  - Maximizes productivity of females by utilizing post-partum estrus.

- **Harem Breeding** with ONE (1) adult male and up to FOUR (4) adult females.
  - **Pregnant females must be removed** and placed into another cage before parturition.
  - There may be **no litters born** into cages with harem breeding.
  - Provides an option for projects that require an intensive breeding programs
  - Maximizes the progeny of an individual male; does not utilize post-partum estrus

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It is the Principal Investigator’s responsibility to record accurate birth dates on the cage cards for all litters in order to calculate weaning dates. If cage cards become cluttered with information, new cage cards may be required to be ordered by the investigator through the Polaris cage-card system.

In any breeding cage, TWO (2) or more adult males must never be housed together due to the very frequent occurrence of inter-male aggression and competition for the female(s). Males may fight to the death if they remain co-housed. Furthermore, once males have been used for breeding, they must not be group-housed with males again.

Standard mouse ventilated and static cages used in University of Pennsylvania rodent facilities typically have a floor area of 67-75” sq. and are designed for a maximum of FIVE (5) adult mice. If litters are present, regardless of age:

- Standard cages with 1 Male + 2 Females + 2 Litters must be weaned at or before 21 days.
- Standard cages with 1 Male + 1 Female + 1 Litter may be weaned at or before 28 days.

An exception for standard mouse housing may be the allowance of large mouse cages when there is scientific justification for breeding a large number of female mice. These cages typically have a floor area of approximately 150” sq. and are designed for a maximum of TEN (10) adult mice. Within these cages, only ONE male mouse is allowed. The capacity to maintain large mouse cages is only available in a limited number of vivaria.

OVERCROWDED CAGES

Overcrowded cages are those standard mouse cages that have more than 5 adult mice or large mouse cages with more than 10 adult mice housed within them. It is the Principal Investigator’s responsibility to have a system in place to be able to receive timely communications from husbandry and veterinary staff regarding his/her mice (e.g. a voicemail that is routinely checked and/or a number that is routinely attended) and to assure that the telephone number of the lab contact placed on the cage cards is accurate.

It is the Principal Investigator’s responsibility to assure responsible colony management to allow for swing space for separating newly generated litters. The Principal Investigator should not set up breeding animal cages unless there is available space for the cages of weaned animals. If adequate vacant spaces are not available within the same housing room, the investigator must discuss options with ULAR management.

REFERENCES

Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS Policy)
Guide for the Care and Use of Laboratory Animals (Guide)