THE UNIVERSITY OF ADELAIDE
ANIMAL ETHICS COMMITTEE

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RODENT BREEDING AND WEANING GUIDELINES

Guideline No: MSAH #78
Prepared by: Pacita Wissell and Denise Noonan
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Authorised By: Andrew Bartlett, Manager and Denise Noonan, Animal Welfare Officer

Signed: _____ **Date:** 11/12/12

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Any animal breeding to supply animals for scientific research and teaching that is conducted on University of Adelaide premises, or by University staff or students, requires approval by the University of Adelaide Animal Ethics Committee (AEC). **The animal housing equipment and husbandry systems used must ensure animal wellbeing and meet species-specific physiological and behavioural requirements.** These AEC guidelines apply to all rodent breeding and weaning undertaken at or by the University of Adelaide.

FOR REFERENCE: BREEDING PARAMETERS FOR LABORATORY RODENTS

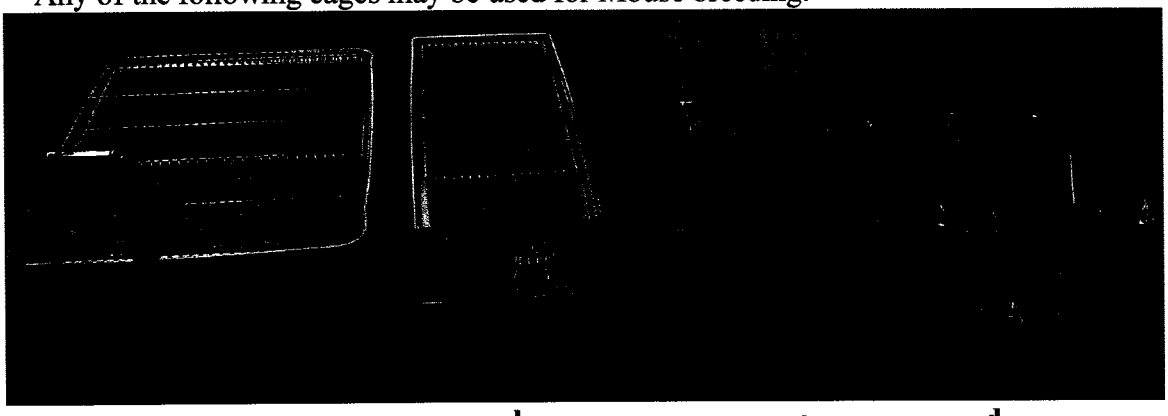
	Mouse	Rat
Breeding age:	Male = 6-8 weeks Female = 6-8 weeks	Male = 5-7 weeks Female = 7-14 weeks
Oestrus cycle length:	4-5 days	4-5 days
First Oestrus:	25-28 days	40-65 days
Duration of Pregnancy:	18–21 days	20-21 days
Weaning age:	21-28 days	21 days

Note: When breeding pairs and harem groups are permanently housed together, fertile mating can occur soon after the birth of a litter. The period of lactation required by the offspring may exceed the duration of pregnancy of the mother (dam). This will result in two unweaned litters requiring maternal care simultaneously. This is undesirable as there is a high risk of overcrowding, mismothering, injury and aggression, particularly for newborn (neonate) offspring. **By following the husbandry and weaning procedures described below, the welfare of the animals can be optimised.**

HOUSING BREEDERS:

1.1 Mouse Breeding Cages

Any of the following cages may be used for Mouse breeding:



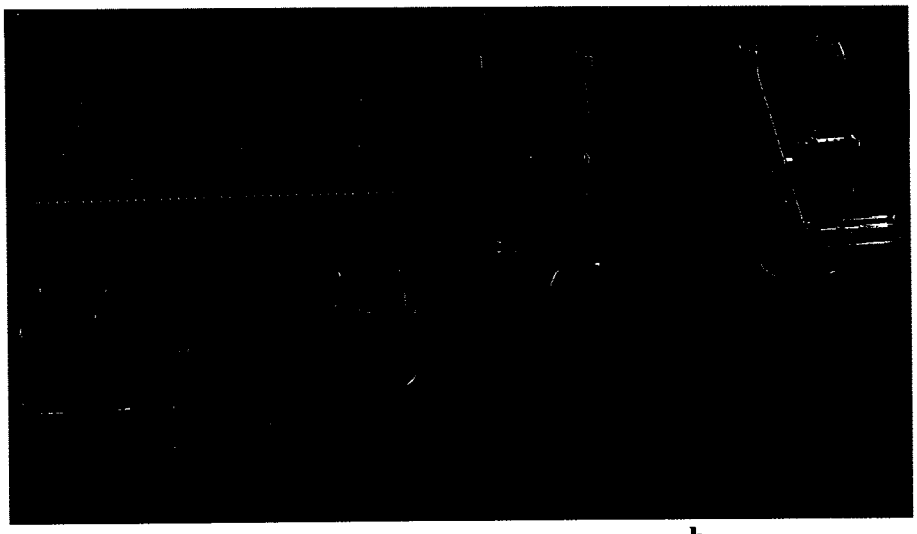
a **b** **c** **d**

a) Large rectangle cage; Monogamous pairs or Trios 1 Male : 2 Females (Harem) *
b) Long Narrow Cage; 1 Male : 1 Female (Monogamous Pair)
c) Static Micro Isolator cage; 1 Male : 1 Female (Monogamous Pair)
d) Individually-Ventilated (IVC) microisolator cage; 1 Male : 1 Female or 1 M : 2 F Harem*; (with pregnant animals or the male removed if there are concerns for pup welfare)*

* ***Note:*** Harem mating allows the pregnant females to be moved to a littering cage or stay in the harem. If they remain in the harem this may be less successful, due to more disturbance and less tolerance when two females are present. Most inbred strains will not tolerate permanently mated groups with more than two females in the cage. **If severe or persistent aggression occurs, animals must be separated.**

1.2 Rat Breeding Cages

Only these cages may be used for Rat breeding:



a **b**

a) Large cage with high lid; 1 Male : 1 Female (Monogamous)
b) Rat double decker IVC microisolator cage; 1 Male : 1 Female (Monogamous)

2. WEANING PROCEDURE:

1. **Monitoring by researchers and personnel responsible for the breeding animals.** Researchers managing their own breeding colonies are to attend to their animals daily to check for newborn animals, weaning, separating females, and a general check of the animals' health and wellbeing.

2. The date of birth of litters, and the numbers born alive and dead, should be recorded on the cage card and with the other breeding records.

3. Prior to day 21, food pellets should be placed at the bottom of the cage to provide unweaned offspring with easy access to supplementary food.

4. **Rats and Mice are to be weaned at 21-23 days of age,** unless this will compromise their welfare. The number weaned of each sex, the date and other relevant observations of health and behaviour should be recorded on the cage card and with the other breeding records.

5. **If offspring are small, slow in developing or otherwise compromised at 23 days of age, you may request *exemption from point 4 from the Animal Welfare Officer***, Dr Denise Noonan (contact details below, point 3.2).

   If exemption is granted, *mice* may be left up to 28 days before weaning, providing the following conditions are adhered to:
   a. **The Dams (mothers) are not with the sire and/or pregnant, otherwise they are to be weaned at 21 days.** (Once litters are weaned, the dam can then be returned for breeding.)
   b. **Litters are not left any longer than 28 days. This is the maximum and there will be no exceptions.** (N.B. If day28 falls on a Saturday or Sunday, you must wean all of them Friday)

6. **Prior litters/progeny must always be separated from the mother before she gives birth to a new litter.** (Animals not weaned by the appropriate time can result in overcrowding, mortality, unplanned breeding among littermates and females with multiple litters.)

7. **Laboratory Animal Services (LAS) will wean any litters that are not weaned by the appropriate time, at a charge to the researcher.**

8. **Easy access to a food and water source must also be provided.** In the first 1-2 weeks after weaning an additional source may be required if the rodents can't easily reach the food hopper or the water bottle sipper tube**. Soaked Food in a little dish of water can help during this period, but needs to be changed daily to as it can quickly become contaminated with faeces and mould. **It is the responsibility of the person responsible for the breeding animals to give their weaned animals a dish of soaked food, and to change the soaked food daily.** Contact LAS Animal Care staff for supplies of this food.

   **N.B. Long sipper tubes, soaked food and moisture packs are available from LAS if required.

3. AVAILABLE ADVICE AND ASSISTANCE:

3.1 Laboratory Animal Services qualified animal technician staff are available to provide animal care, and also to provide advice on animal husbandry procedures such as sexing, weaning, record-keeping and the maintenance of breeding colonies. Technical assistance is also available for these and other routine animal procedures including daily change of soaked food, tail tipping (for genetic analysis) and identification of animals. The Animal Facility Coordinator should be contacted to arrange this. (Email: las.manager@adelaide.edu.au / Tel: 8313 5340)

3.2 The Animal Welfare Officer is available to provide veterinary advice and assistance with animal health and welfare matters.
(Mobile: 0421615147 / Tel: 83134107 / Email: denise.noonan@adelaide.edu.au)

REFERENCES

- The *Australian Code of Practice for the Care and Use of animals for Scientific Purposes* (2004) –Section 4 Acquisition and care of animals in breeding and holding facilities.
- Guidelines correspond with recommendations from the "Code of Practice for the Housing and Care of Laboratory Mice, Rats, Guinea Pigs and Rabbits"(2004) Victorian Government Department of Primary Industries
- The UFAW handbook on the care and management of laboratory Animals Seventh Edition, volume 1, 1999

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Revision 2012 endorsed by the AEC at its meeting on 04.12.2012