

# WHAT YOUR LAB SHOULD KNOW: MOUSE & RAT BREEDING & CAGE DENSITY CHANGES

## New Policy Goes Into Effect December 1, 2016

To ensure the continued health and well-being of mice utilized in research at the University, and to remain consistent with federal standards governing animal use activities, the U-M Policy on Mouse and Rat Breeding and Cage Densities has been updated. In order to allow adequate transition time, the new policy's implementation will begin with a five-month grace period on December 1, 2016.

The easiest way to adjust to this policy change, with the least risk of non-compliance, is to house monogamous pairs in a standard mouse cage. Trio and/or harem breeding is still admissible under certain circumstances and with adequate scientific justification. Laboratories should discuss these options with their ULAM Faculty Veterinarian before proceeding.

A summary of the key changes resulting from this policy are outlined below.



### CURRENT PROCESS

The current trio breeding process consists of the following three steps:

- 1: Housing more than 2 adults and 1 litter per cage
- 2: Unless mice are poor breeders (4 or less pups per litter) cage density is exceeded 10 days after birth and the litters must be separated
- 3: Weaning the pups

This approach presents several **areas of concern** for both labs and the animals under their care:

- Often results in overcrowded cages
- Studies have shown that overcrowding can lead to an increase in stress behaviors, reflecting poor animal welfare
- Requires additional cage handling, which results in increased disruption and added laboratory oversight to prevent cage overcrowding
- It is often difficult to discern which pups were produced by which dam
- The presence of two females can result in suppression of reproduction in one of the dams resulting in lower pup yield per female



### NEW PROCESS

The new process eliminates one step and consists of the following:

- 1: Housing monogamous pairs in a standard mouse cage
- 2: Weaning the pups

Under the new policy, housing monogamous pairs eliminates the need to split the litter following birth. Now, pups will only need to be separated once they are ready to be weaned.

The new approach **provides many benefits** to labs and the animals under their care:

- Less likely to result in overcrowded cages, therefore minimizing the laboratory's risk of non-compliance or being assessed a technician time fee
- Causes minimal animal disturbances, which often leads to improved overall animal health and well-being
- Always clear which female produced which litter
- Lack of competing females allows for the greatest number of mice per female produced in the shortest amount of time

Learn more at [research.med.umich.edu/cage-density-policy](https://research.med.umich.edu/cage-density-policy)



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