

## Breeding Troubleshooting Questionnaire

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- What have the room environmental conditions been in this room during the times of deaths or breeding problems?
- Supplement enrichment, e.g. igloos, Shepherd shacks extra Nestlets, EnviroDri, chewing sticks, treats, etc.?
- Vibration problems? Consider anti vibration pads. Address source of vibration.
- Energy dense supplementation:
  - Bacon Softies ([www.bio-Serv.com](http://www.bio-Serv.com)).
  - DietGel Boost (<http://clearh2o.com/research-products/dietgel/dietgel-boost-2.html>): High calorie supplement to quickly move pups forward.
  - Mix 50:50 with powder rodent chow and moisten with water for weak pups or mothers in needs of extra energy.
- What is the fat and protein % of the diet they are on? e.g., BALB/c tend to need higher fat than other strains for breeding. Consider a higher fat diet. In some cases may need to actually decrease fat content. This is frequently done in males with diminished breeding performance from being overweight.
- What breeding scheme are they using (timed? monogamous, trio, harem?)
- Are males taken to female cage or vice versa? Usually the female should be taken to the male's cage.
- Are cages being left undisturbed a 2-3 days before parturition and at least 3-5 days pp?
- Is anyone opening or disturbing the cage during critical times (peri partum period)?
- What's the ave # of pups delivered?
- At what post partum age do pups die?
- Cannibalism?
  - If so, who is doing the cannibalism?
  - First-time mothers or experienced mothers? Often first-time mothers cannibalize but will not subsequent litters
  - If experienced how old are they when the deaths are occur? If cannibalism is occurring, decreasing the dark cycle (which is when the mice are most active) by 2 hours may decrease cannibalism, e.g. 14 hr light/10 hr dark may help.
  - Are males kept in the cage during peri partum period? They may be the guilty party, however with some strains males may actually help raise the young.
  - Is there another female in the cage to help raise pups during this time?

- First time moms?
- Is anybody coming into the room during the dark cycle?
- Any noise or excessive traffic in the room?
- Anybody coming into the room that wears perfume?
- Extra enrichment?
- Love Mash™ Rodent Reproductive Diet, Bio-Serv* given to pregnant rodents have been shown to prevent cannibalism of litters in some dams.
- How old are males?
- How old are the moms?
- Is this a shared room or is it assigned to one PI only?
- Who all go into the room? Are practices consistent? Too many people going into the room? Are the same people going in the room?
- What's the background of these mice? Have you looked up breeding issues related to this background?
- Age/weight at weaning. Using the 10-gram weight could help in deciding when to wean.
- Affected mice, is there an overcrowding issue? e.g., multiple litters or generations? If so, older pups may be trampling on younger pups. Mom may not be able to sustain both litters
- Health issues?
- Any experimental manipulations during this time?
- Where are the breeding cages located in the room? If close to the door, move to the back of the room
- Light too intense in the room? Does light need to be attenuated or cages placed on lower shelves of the rack?