

Clear **H<sub>2</sub>O**<sup>®</sup>

# Breeding Support and Pup Health Survey Results



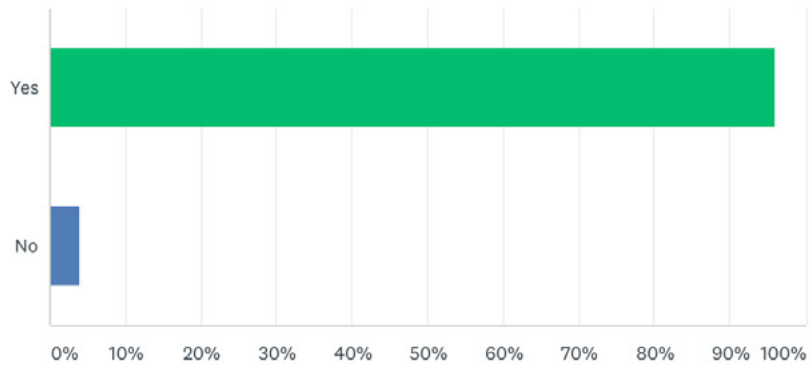
## Background

In March 2019, ClearH<sub>2</sub>O conducted a survey among AALAS members to gain insights into rodent breeding and pup health challenges among animal researchers.

At ClearH<sub>2</sub>O, we are committed to designing nutritionally fortified gel formulation products that improve research outcomes while putting animal health and welfare at the forefront. We are using the insights from the survey to help our product development efforts so we can provide products that fit the needs of our customers. We have also interpreted the raw data from these survey results to help develop the guide: Best Practices for Rodent Colony Planning, Breeder Support, and Pup Health. [Download the guide today](#) and contact us if you have any questions.

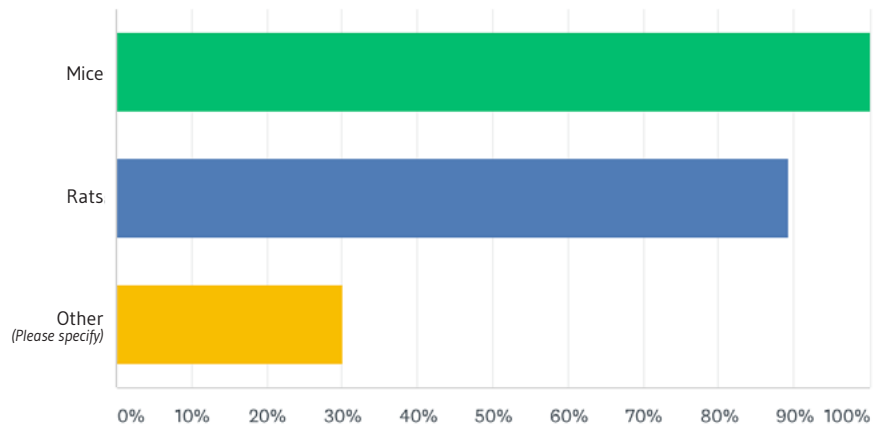
We would like to thank everyone that participated in the survey, we value your input immensely. Enjoy this digital copy of the compiled results of the Breeding Support and Pup Health Survey.

# 1. Do you work with rodents?



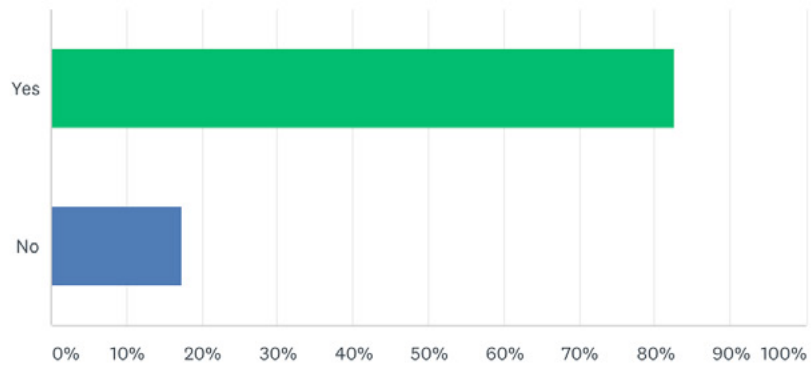
ANSWER CHOICES	RESPONSES
▼ Yes	96.03%
▼ No	3.97%

2. If you answered yes, what type of rodents do you work with? (check all that apply)



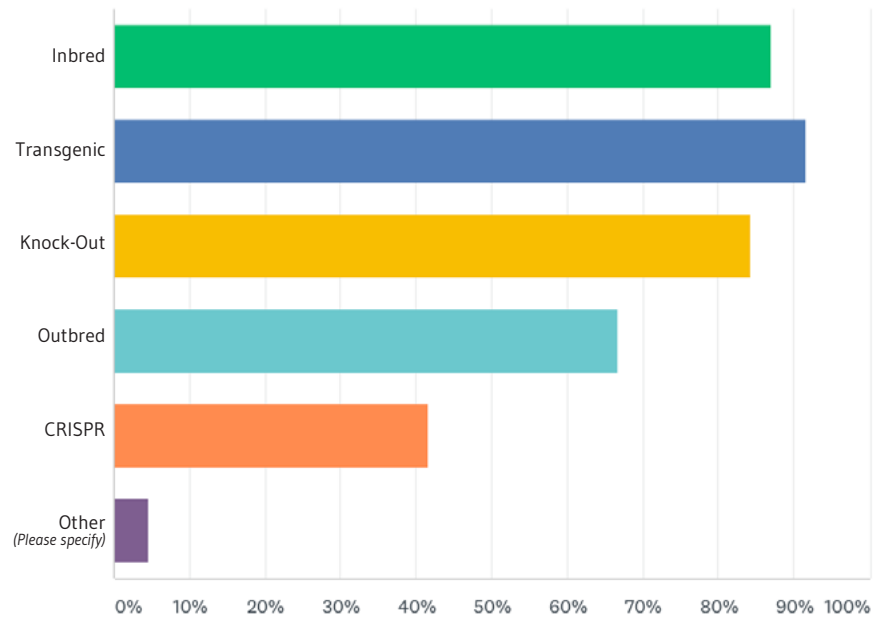
ANSWER CHOICES	RESPONSES
▼ Mice	100.00%
▼ Rats	89.43%
▼ Other (please specify)	30.08%
RESPONSES INCLUDED:	
Voles	Gerbils
Guinea Pigs	Ground Squirrels
Chinchillas	Spiny Mice
Rice Rats	Hamsters
Cotton Rats	Naked Mole Rats
Peromyscus	Monodelphis Domestica
Sand Rats	Kangaroo Rats
	Nile Grass Rats

### 3. Do you breed your rodents?



ANSWER CHOICES	RESPONSES
▼ Yes	82.54%
▼ No	17.46%

4. What type of rodent strains are you breeding? (check all that apply)



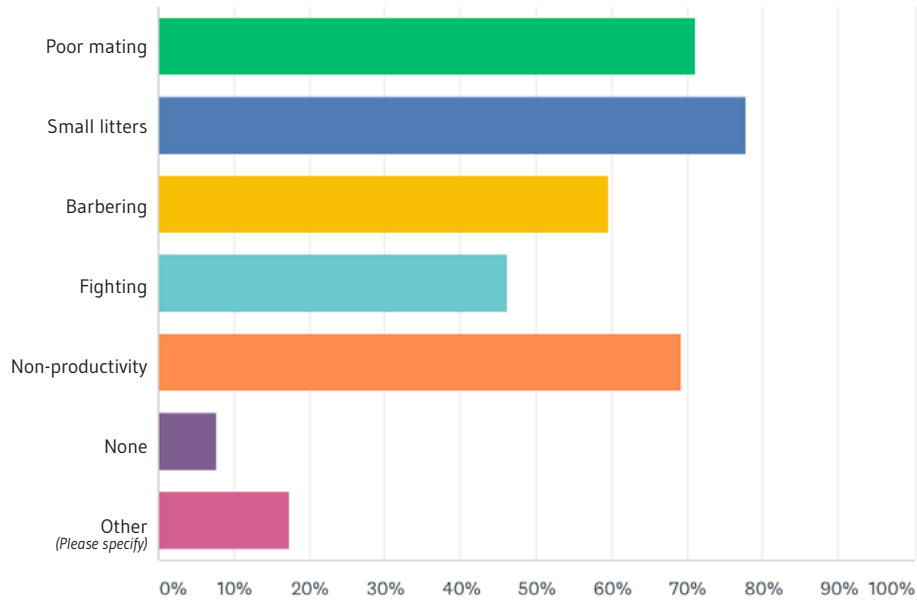
ANSWER CHOICES	RESPONSES
▼ Inbred	87.04%
▼ Transgenic	91.67%
▼ Knock-Out	84.26%
▼ Outbred	66.67%
▼ CRISPR	41.67%
▼ Other (please specify)	4.63%

RESPONSES INCLUDED:

Knock-in

Gnotoiotic/Germ-free

5. What breeding difficulties do you encounter ? (if any, check all that apply)

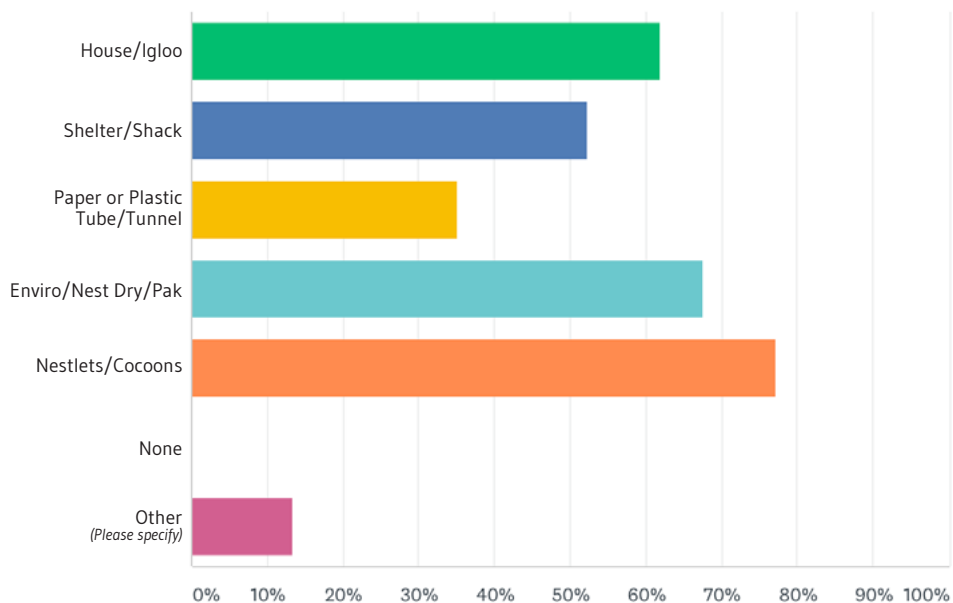


ANSWER CHOICES	RESPONSES
▼ Poor mating	71.15%
▼ Small litters	77.88%
▼ Barbering	59.62%
▼ Fighting	46.15%
▼ Non-productivity	69.23%
▼ None	7.69%
▼ Other (please specify)	17.31%

RESPONSES INCLUDED:

- Dystocia
- Ulcerative Idyopathic Dermatitis (on B6)
- Cannibalism
- Loss of pups before weaning
- Malformations
- Neonatal Death

6. What type of nesting enrichment do you use ? (if any, check all that apply)



ANSWER CHOICES	RESPONSES
House/Igloo	61.90%
Shelter/Shack	52.38%
Paper or Plastic Tube/Tunnel	35.24%
Enviro/Nest Dri/Pak	67.62%
Nestlets/Cocoons	77.14%
None	0.00%
Other (please specify)	13.33%
RESPONSES INCLUDED:	
Tek Fresh	Sunflower Seeds
ClearH <sub>2</sub> O Gel	Trapeze
Crinkle Paper	Swing
Wood Bars	Nylabones
Tissue Paper	Lofts
Enviro Dry Paper	Condiment Cups
Paper Towels	Enrich-N'Nest
Rolled Paper	
STH	
Crink-I'Nest	

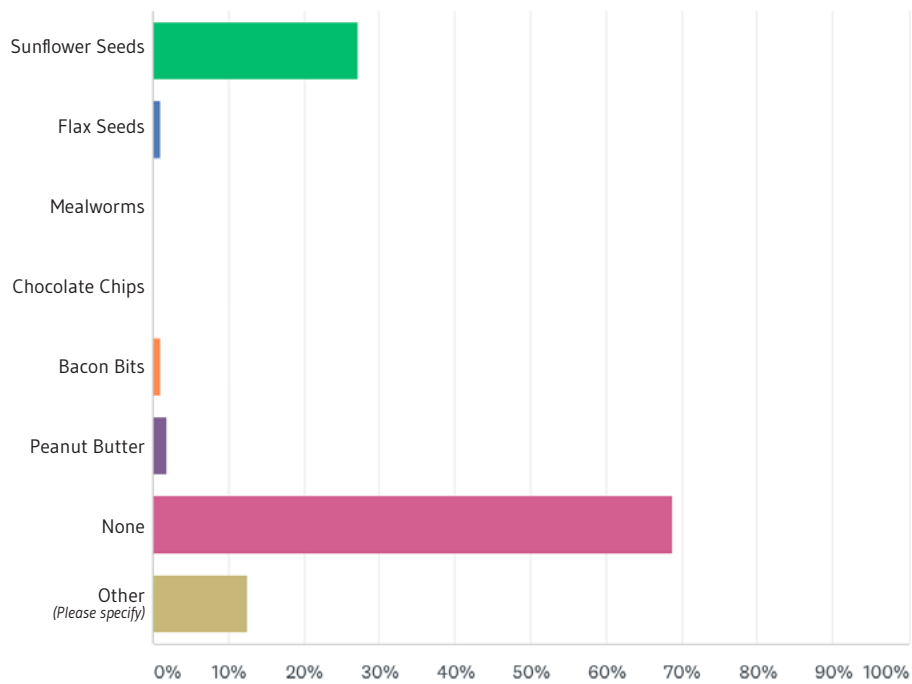


## 7. Please specify which breeder chow you use (if any).

### RESPONSES INCLUDED:

Envigo 7904	Lab Diet 5053	2918 or 2919	Envigo 2019	Teklad 7904
Envigo 7004	Lab Diet 5021	SDS RM3	Harlan Teklad 2018	Purina 5015
5058 Lab Diet	Envigo 2919	SDS Transbreed	Picolab 5053	5LJ5
Lab Diet Irradiated 5V5M 7904	Envigo 2918	Teklad Global 2018	Picolab 5058	
NIH31	Teklad 2019	Altromine	Harlan Diets	
Lab Diet 5056	Lab Diet 5008	Purina Lab Diet Irradiated	76a	
	Isopro 3000	Purina 5058	BioServ Love Mash	

8. What type of nutritional enrichment and/or foraging do you use in your breeding cages ? (if any, check all that apply)

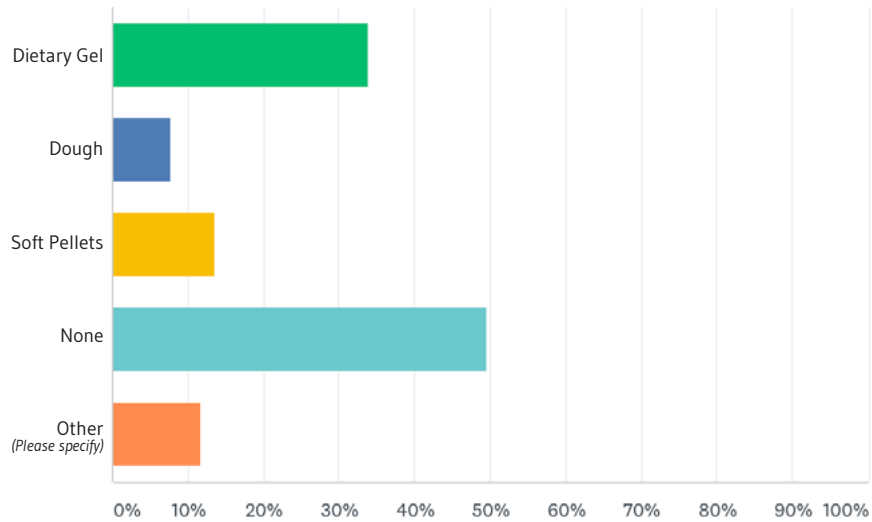


ANSWER CHOICES	RESPONSES
▼ Sunflower seeds	27.18%
▼ Flax seeds	0.97%
▼ Mealworms	0.00%
▼ Chocolate chips	0.00%
▼ Bacon bits	0.97%
▼ Peanut butter	1.94%
▼ None	68.93%
▼ Other (please specify)	12.62%

RESPONSES INCLUDED:

- Love Mash
- BioServ Certified Enrichment Items
- 2918 or 2919 Mash
- Napa Nectar
- Boost Dietary Gel, Sunflower Seed
- DietGel® 76A for Weak Producers
- Nutri-blocks
- Various ClearH<sub>2</sub>O DietGels
- Dough
- Fruit Crunchies

9. What type of dietary supplements do you use in your breeding program ?  
(if any, check all that apply)

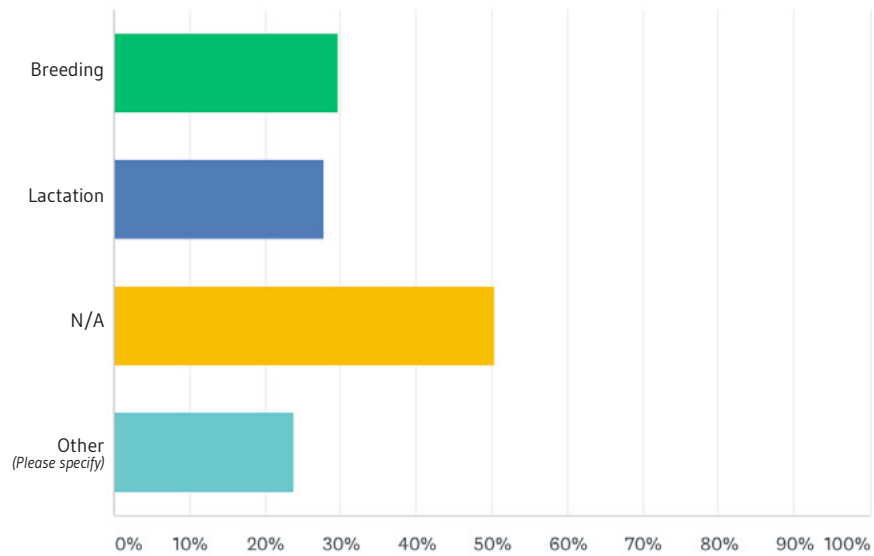


ANSWER CHOICES	RESPONSES
▼ Dietary gel	33.98%
▼ Dough	7.77%
▼ Soft pellets	13.59%
▼ None	49.51%
▼ Other (please specify)	11.65%

RESPONSES INCLUDED:

- Love Mash
- Sunflower Seeds
- Breeder Chow 2019
- Nutri-blocks
- DietGel Prenatal when litter is stressed
- Napa Nectar
- HydroGel
- DietGel recommended by veterinary staff to investigators for poor breeding performance or neonatal challenges
- Laxatone for monodelphis
- Wet pellets or wet powdered feed as "mush" supplement

10. At what stage do you provide the dietary supplements to your breeders?



ANSWER CHOICES	RESPONSES
▼ Breeding	29.70%
▼ Lactation	27.72%
▼ N/A	50.50%
▼ Other (please specify)	23.76%

RESPONSES INCLUDED:

- |   |  |   |
|---|--|---|
| After 14 days pregnant  | Last week of gestation and then during lactation                                   | Post-weaning for smaller pups   |
| Weanlings when showing low weight or poor coat  | I give DietGel to animals that have low birth weight and or smaller at weaning age | DietGel is recommended during breeding and lactation                  |
| Clinical problems   | Weanlings  | Mush at or just prior to weaning                                      |
| Weaning to pups   | DietGel/Prenatal gel only when litter is stressed                                  | Small phenotypes and poor breeders                                    |
| Not done as a normal diet supplement for breeders—usually sick, debilitated, or early weaned mice | When sickness presents itself  | As needed for trouble strains   |
| At weaning time of pups   | If needed due to health concerns   | Some lines get dough diet prior to timed matings and for 5 days after |
|   | When weaned if small litter  |   |

## 11. What benefits or improvements have you observed while using those supplements for breeders?

### RESPONSES INCLUDED:

Less stress on the female and healthier pups,

Reduction in dystocia and cannibalism,

Higher quality breeding numbers

Larger litters and healthier pups

I've had good feedback from the labs with the prenatal diet

The labs aren't losing a lot of pups

Some increased breeding productivity

Very consistent breeding

Maintain hydration and provide caloric support

Improved survival of pups

Better health/recovery from pregnancy

Depends on the strain

Better pup weights / better pup thriving

Some improved lactation—we find that some breeding mice eat and get fat, but it does improve their reproductive performance

For low birth weights I can definitely see an increase in weight when using the diet gel

I believe it helps with nursing moms

I'm not sure if it helps much with strains that have trouble reproducing overall

Better coat condition

Quicker to rebreed

Better survivability of weanlings

Helps pups transition

Faster growth in pups

We have had mixed results but most of the time, the litters have a higher survival rate

We have seen strains become more productive after being given supplemental feed

Use has decreased food grinding and increased breeding without extra calories of higher fat diet

Reports from investigators that the dietgels are helpful at improving breeding performance

It seems to help smaller pups or weaker pups

The laxatone is so the monodelphis moms don't get a cloacal prolapse due to hard stool during nursing

Animals do better with Nutragel

They can reach the feed easily

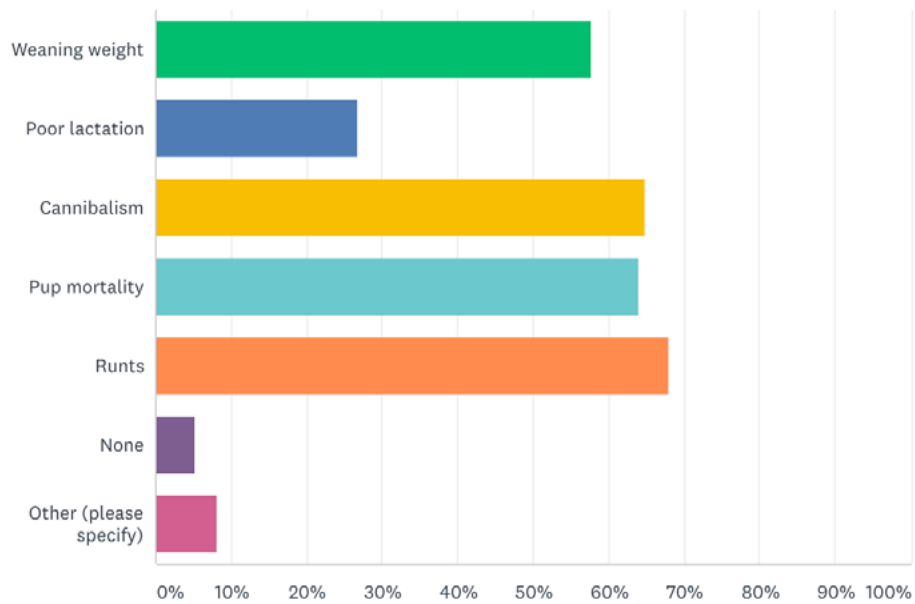
Some of our researchers have reported better production when "fatchows" are used

Mice who are weak tend to eat the gel better than pelleted diet

More viable litters

Better maternal care

12. What type of challenges related to the health of the pups do you encounter ?  
(if any, check all that apply)



ANSWER CHOICES	RESPONSES
▼ Weaning weight	57.73%
▼ Poor lactation	26.80%
▼ Cannibalism	64.95%
▼ Pup mortality	63.92%
▼ Runts	68.04%
▼ None	5.15%
▼ Other (please specify)	8.25%

RESPONSES INCLUDED:

Occasional strains have smaller pups and/or reduced weight at 21 day  
—in these cases we supplement and wean at 28 days

Poor selection of breeders by investigators with continued dental  
malocclusion and hydrocephalus issues

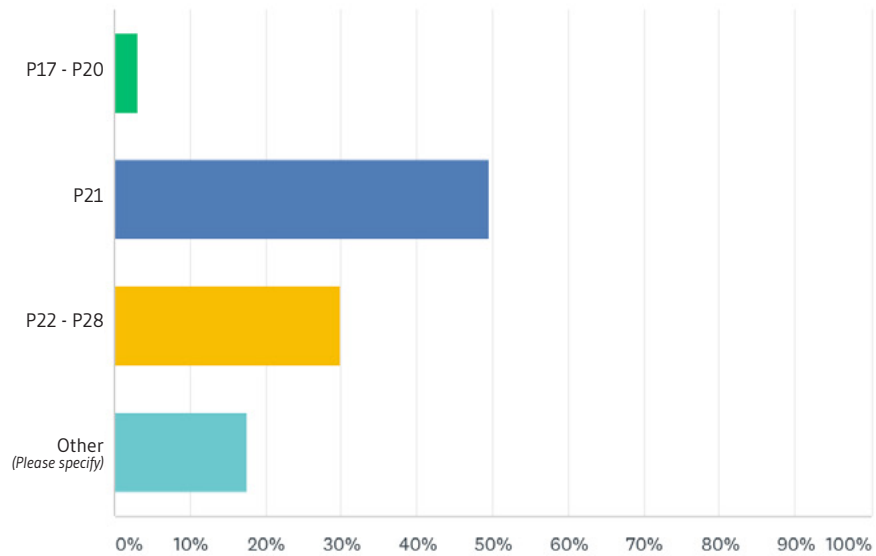
Abandoned pups

Malformations

Hydrocephalus

Malocclusion

### 13. At what age do you wean the pups?



ANSWER CHOICES	RESPONSES
▼ P17 - P20	3.09%
▼ P21	49.48%
▼ P22 - P28	29.90%
▼ Other (please specify)	17.53%

RESPONSES INCLUDED:

P18-P28 depending on the strain

Depends on how well they are doing between P21-P24

P21 +/- 2 days

Most before or at 21 days but there are provisions to go out to 28 days

19-21 days

Depends on strain and genetic background

P21-P28

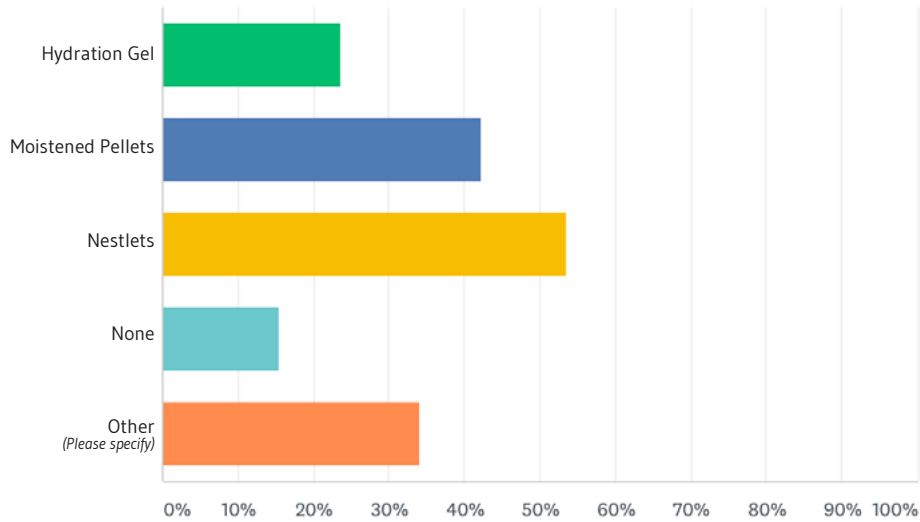
P21 for SPF mice, P28 for Germ Free

Occasional strains at P28

From 21 days up to 35 days

Standard is P21, but will extend up to P28 if needed to support developmental delay

14. What are your institution specific requirements for weaning cage set up, in addition to standard chow and water bottle ? (if any, check all that apply)



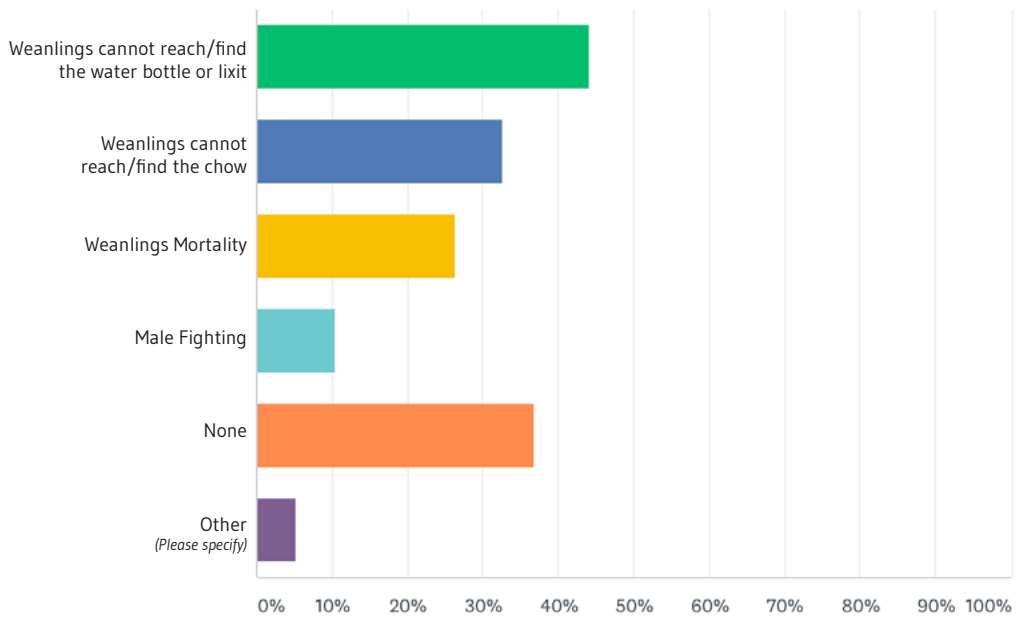
ANSWER CHOICES	RESPONSES
Hydration gel	23.71%
Moistened pellets	42.27%
Nestlets	53.61%
None	15.46%
Other (please specify)	34.02%

RESPONSES INCLUDED:

Enviro	Mash	Gel or other additions on a case by case basis for small weanling animals	Hydrogel and boost if weaning small animals	Sunflower seeds
Bacon softies	Food pellets on the cage bottom	Envirodri nesting material	Tap the lixit x 7 days	Shacks
Food pellets on floor	All our cages have nesting material	Vent racks w/ automatic watering	Moistened pellets	Enrichment
Water bottle with long sipper provided	Gel diet for early weaning	Diet gel recovery	Treats	
Crinkle paper	Longer sipper tube for small or early weaned or small pups	Shelter and nesting material that is the same as breeder cage environment	Mush	
Tissue paper	Water bottle in addition to automated watering system	Hydration gel	Enviropaks open	
Food on floor			Chow on floor	
Igloo			Lixits primed and gel diet for some lines	



15. What issues do you face when weaning your animals? (if any, check all that apply)

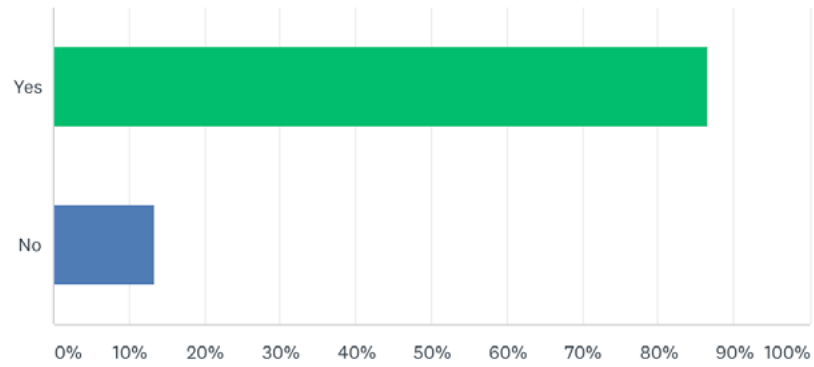


ANSWER CHOICES	RESPONSES
▼ Weanlings cannot reach/find the water bottle or lixit	44.21%
▼ Weanlings cannot reach/chew the chow	32.63%
▼ Weanling mortality	26.32%
▼ Male fighting	10.53%
▼ None	36.84%
▼ Other (please specify)	5.26%

RESPONSES INCLUDED:

- Small litters
- Males from different litters sometimes fight
- Encourage delayed weaning of small animals or supplementation with hydrogel and/or boost
- Weanlings can get cold in IVC racks

16. Are you aware of gel hydration and nutritional supplements for weanlings?



ANSWER CHOICES	RESPONSES
▼ Yes	86.60%
▼ No	13.40%

**17.** If you answered yes, what supplements are you currently using, or have you used in the past for your weanlings?

RESPONSES INCLUDED:

HydroGel

DietGel

Transgel and moistened chow

Recovery gel and boost

Hydrogel PRN

DietGel 76a

Nutragel

Love mash

DietGel Boost

BioServ dough diet, softened normal chow

Napa nectar-water gel only

Gel meal

(bacon and cherry flavored),

BioServ gel diet

HydroGel for all weanlings

DietGel for specific runted strains of mice prior to weaning

31M

Gel packs

Hydrogel for animals that are runted/appear dehydrated and DietGel as a dietary supplement for the first week

DietGel Prenatal

Food pellets soaked in water

## 18. What benefits or improvements have you observed while using those supplements for weanlings ?

### RESPONSES INCLUDED:

Most thrive

Some use as source of hydration while others don't touch it

Stronger pups

It assists the weanlings for the first few days until they acclimate to using the water bottle

Mice use the empty gel cup as extra enrichment

Maintained litter

Faster growth/better coat condition

Better pup survival

In the instances where animals have poorly developed, or cases of malocclusion this is a bridge to get them to a development point of dental development for them to be utilizing/efficiently ingesting normal pelleted diet, it gives them time to figure out the lixit

Usually within a few days of weaning, it just gets them over that hump

Some of our transgenics wean on the small side, so it helps support them

Animals are able to access water in the event that they are too small to reach the lixit

DietGel Recovery has increased weanling survival

Weanlings will put on weight quicker when using Boost

We lose less mice to dehydration when a water gel is available

Improved overall health

It really does help improve their weight and overall survivability

Boost was for a line that could not gain weight and they survived for almost 2 years

Easier transition to using automatic water valve

They seem to recover if given in a weak state

Pups grow faster and have more energy

A few lines with weak breeding do slightly better with gel diet added at weaning

Increase in size, especially for large litter where moms are not able to nurse everyone

## Survey Insights

Thank you for your interest in the results of the Breeding Support and Pup Health Survey. Not only have insights from the survey been used to help our product development, they have also been used to support the best practices detailed in the guide: Best Practices for Rodent Colony Planning, Breeder Support, and Pup Health. **Download the guide today** and contact us if you have any questions.

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