

Report: IAT Animal Welfare Group survey on the breeding of laboratory mice

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This report summarises the findings of the IAT Animal Welfare Group Survey regarding the breeding of laboratory mice. The survey was designed to understand how different establishments perform the fundamental task of breeding animals in their care.

Section 1: summary of participant demographics

Professional roles

Out of 123 participants, technicians, senior technicians and specialist technicians represent the largest group involved in breeding at 18.70%, 23.58% and 4.07% respectively.

Management involvement

Over 30% of respondents are managers, with another 12% identifying as deputy managers.

Named person roles

Over 50% of respondents hold a Named Animal Care and Welfare Officer (NACWO) role. Approximately 40% do not currently hold a named person role.

Industry experience

The workforce is highly skilled, with over 40% of respondents exceeding 21 years of experience.

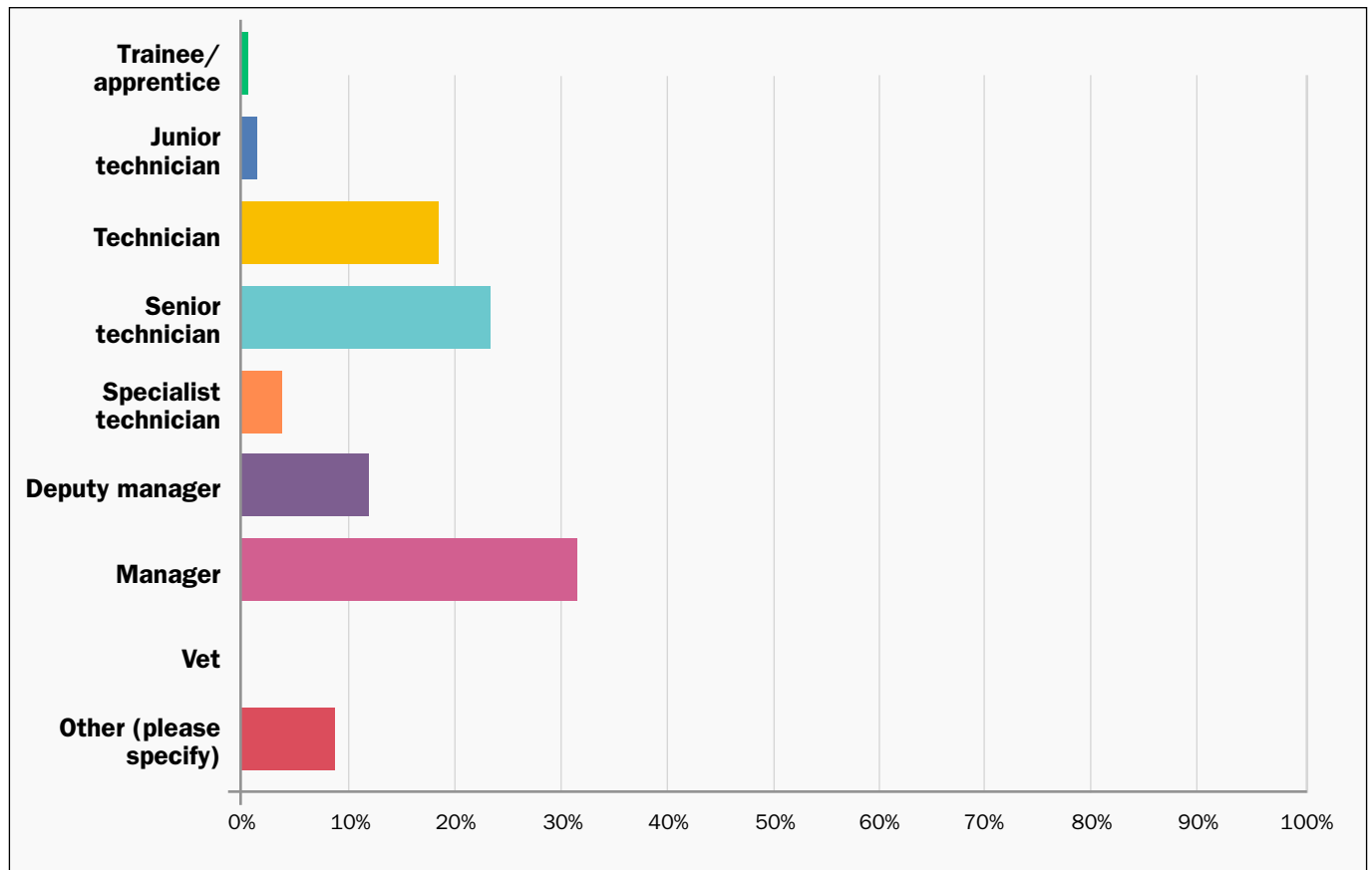
Experience gap

Only 12% of respondents had less than 5 years of experience which highlighted a potential need for future planning and recruitment of trainees.

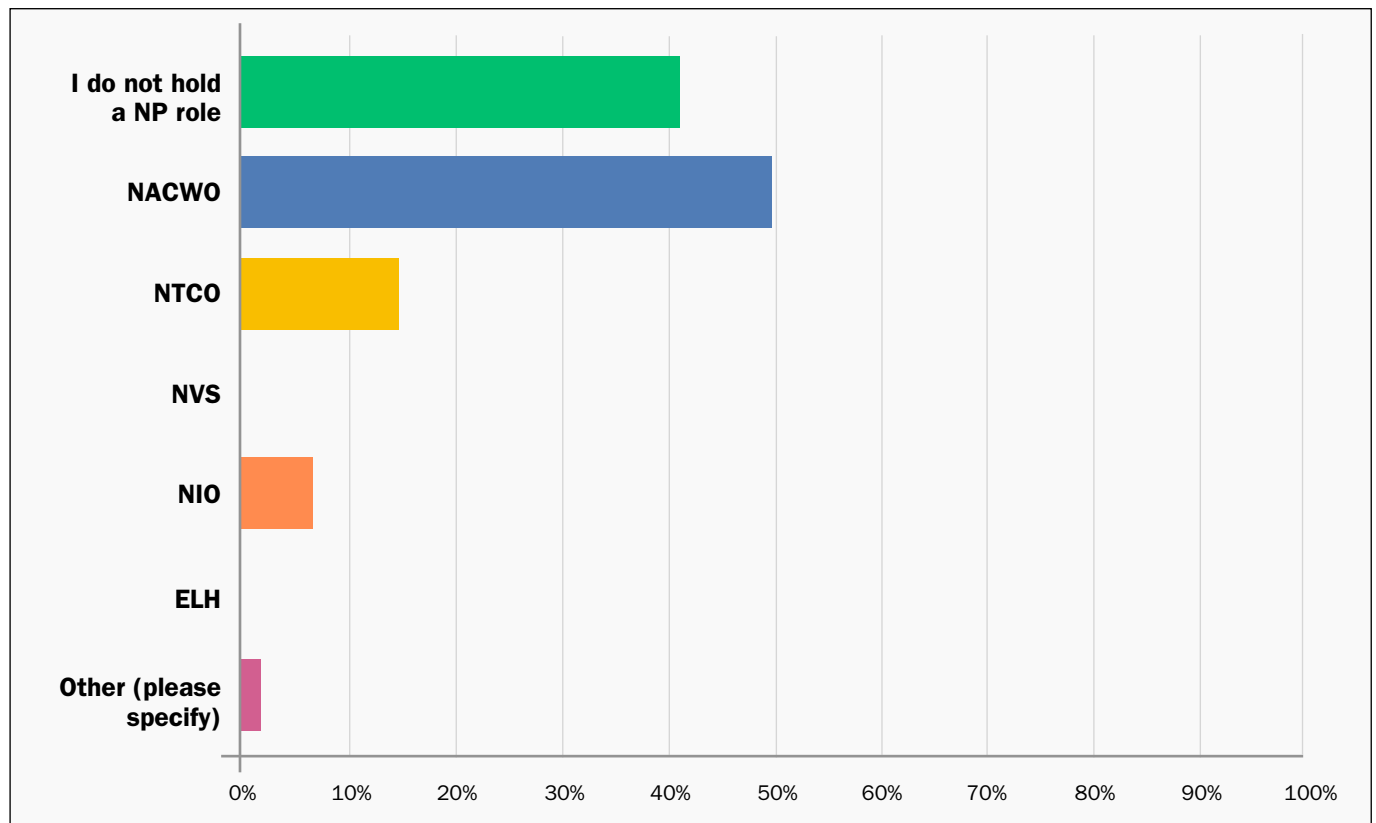


Graphics depicting actual answers to questions asked

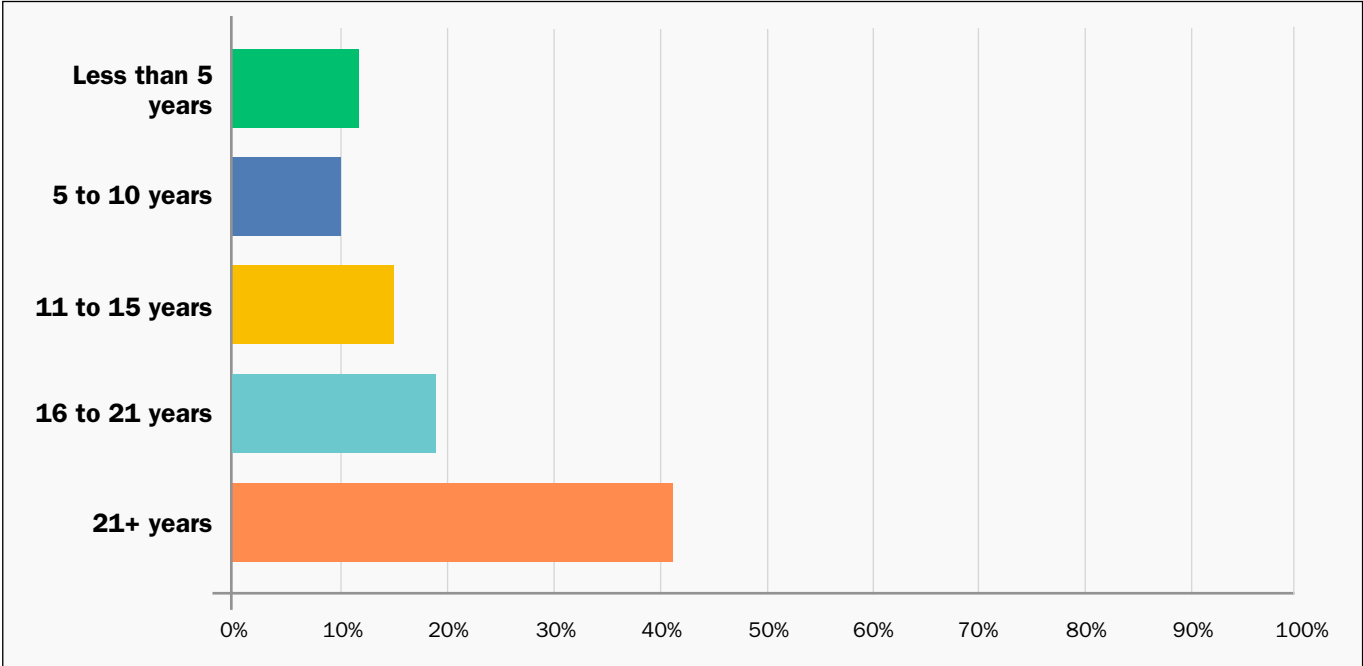
Positions held



Percentage holding named roles and what those roles were



Length of time working in the industry



Section 2: summary of facility and barrier types

Establishment type

Over 70% of respondents work for a university while commercial and private sectors make up the remaining 30%.

Barrier environments

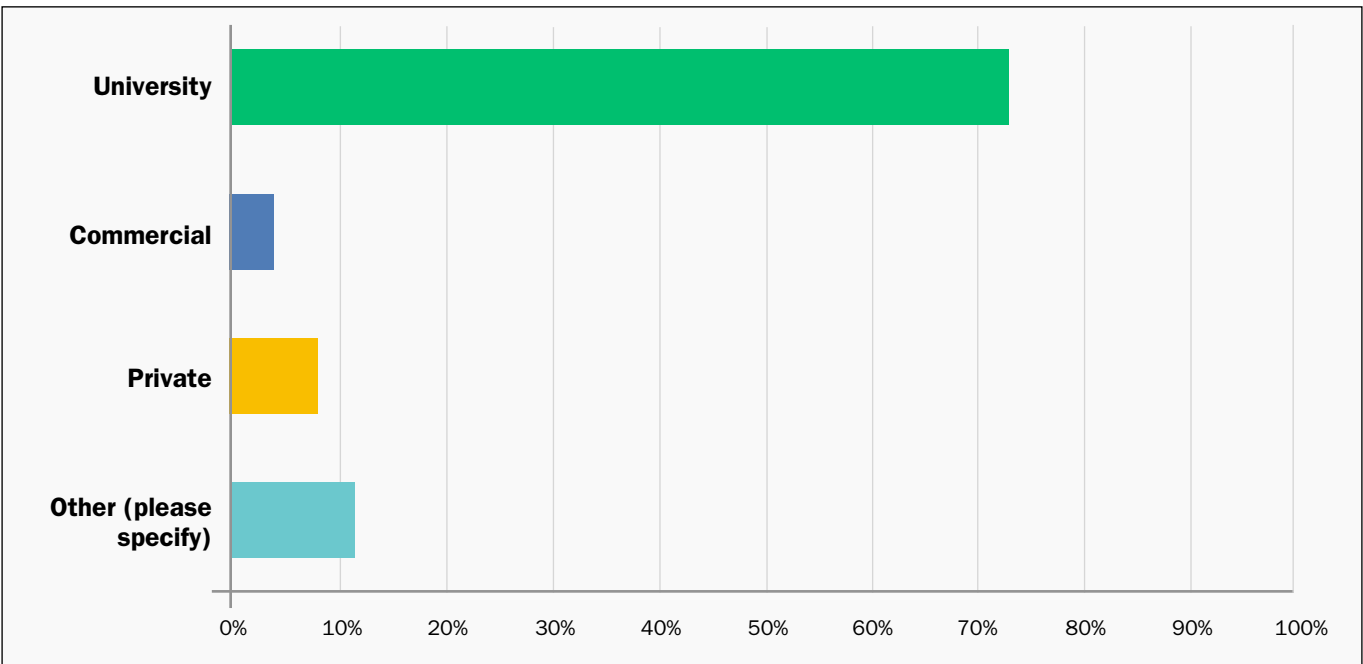
Over 50% of respondents work in high-health status barriers, such as specified pathogen free (SPF), full barrier or containment.

Conventional housing

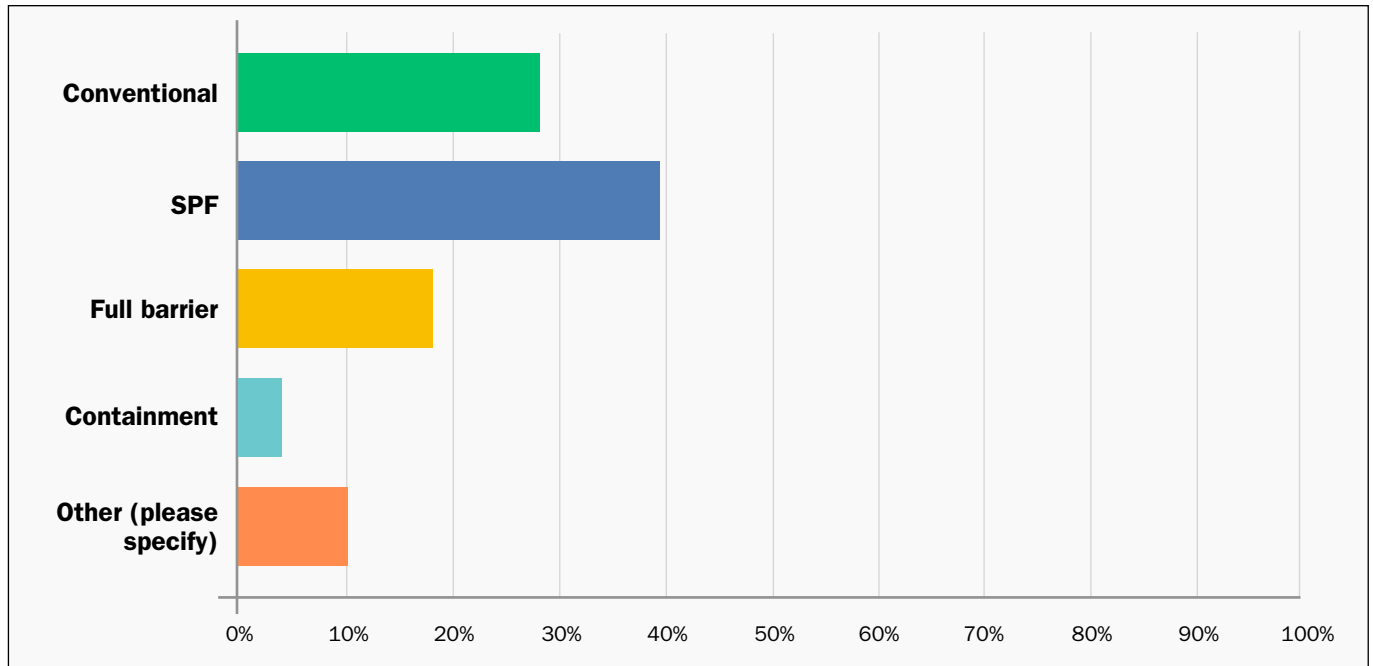
30% of respondents work in conventional areas.

Graphics depicting actual answers to questions asked

Establishment type

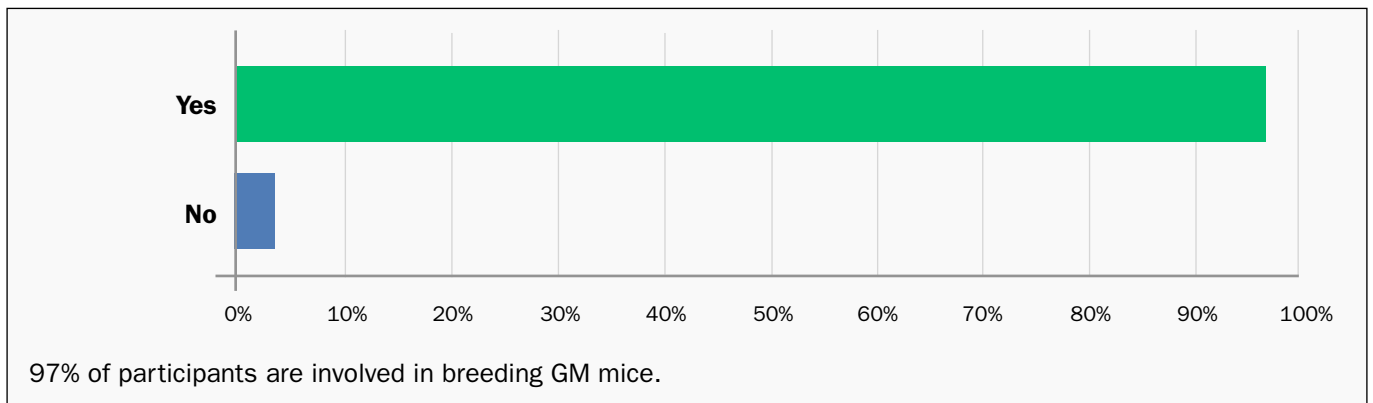


Type of barrier facility worked in

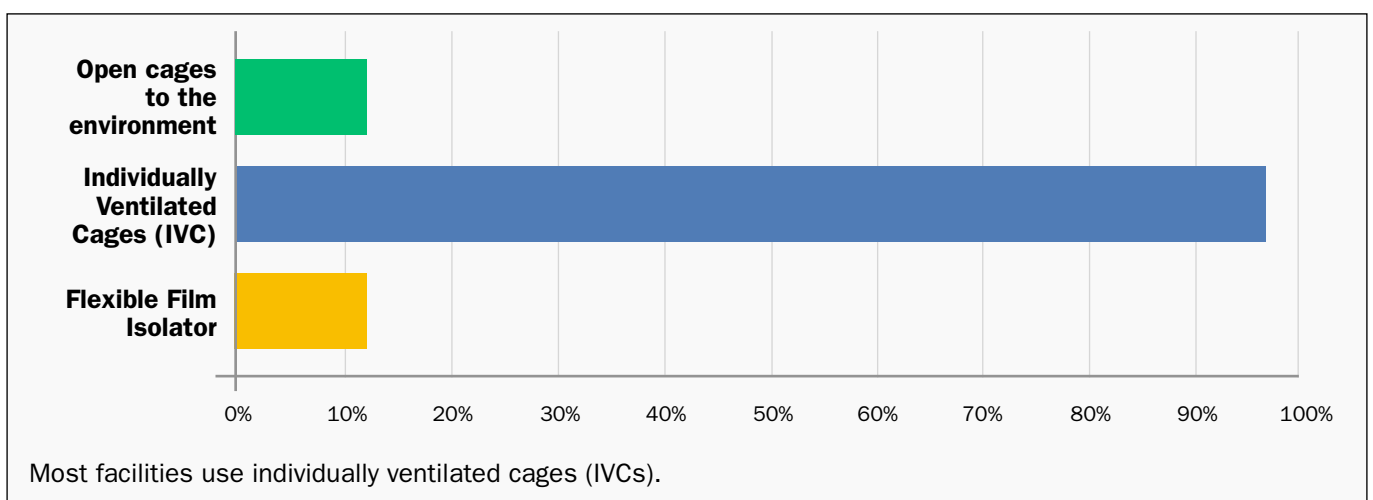


Section 3: summary of breeding practices and caging

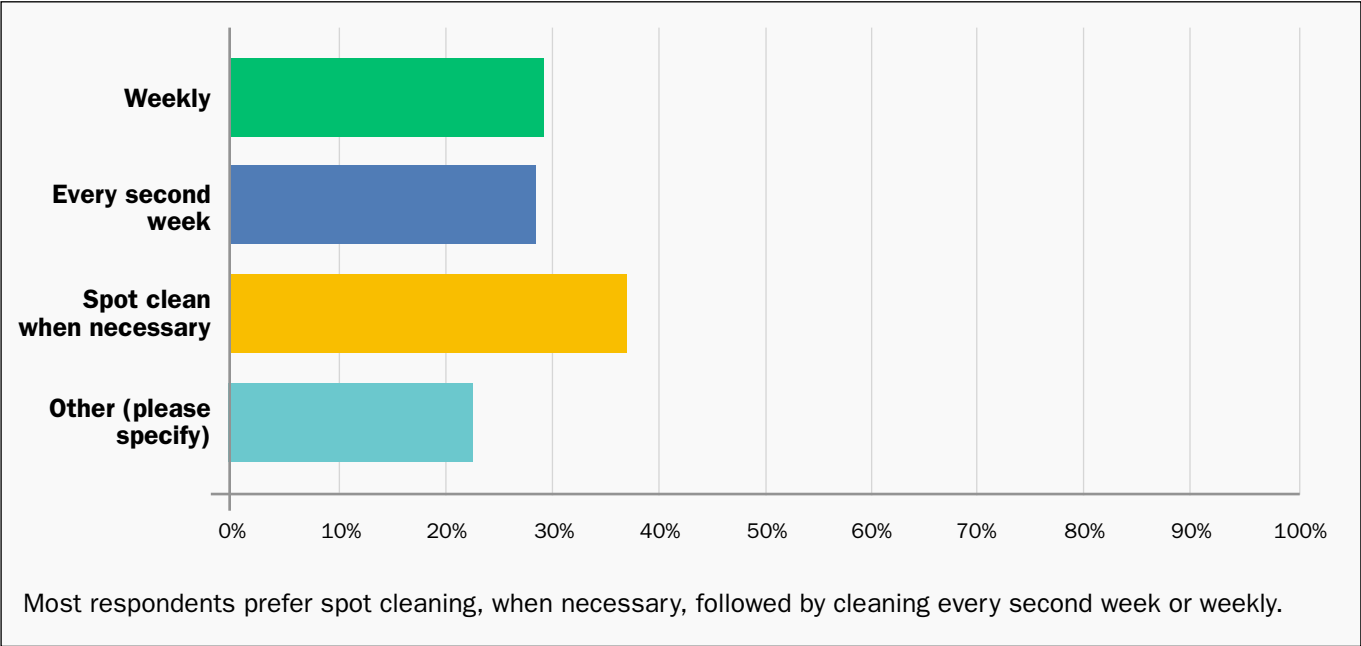
Genetically Modified (GM) mice breeding



Why types of caging systems do you use?



How often do you clean out breeding cages?



Pairing age

Over 50% of respondents pair mice for breeding at 6 weeks of age.

Economic breeding life

92% of respondents use the number of litters as the primary endpoint for breeding and 81% used a set period for breeding as the primary endpoint for breeding. Between 73% and 81% used mixed methods to determine an economic breeding life.

Record keeping

80% of respondents record pregnancies on cage cards, while less than 40% utilise a computer system.

Litter monitoring

93% check for new litters daily. 70% count and record litter sizes between 0–5 days of age.

Weaning

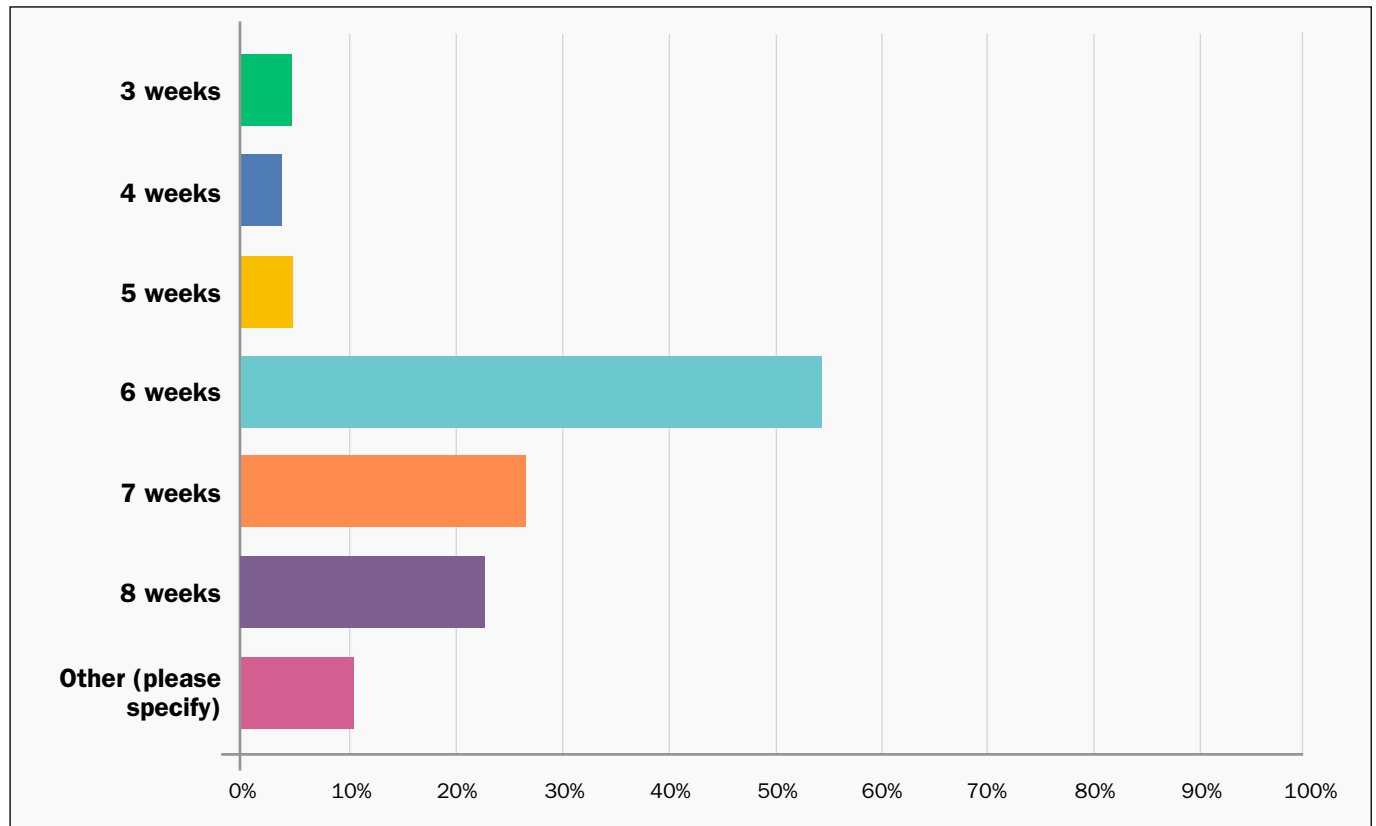
Close to 70% of litters are weaned at 21 days old. Weekend weaning is split nearly evenly, with 52 respondents saying yes and 54 saying no.

Section 4: summary of breeding strategies and selection

Strategy	Usage observations
Monogamous pairs	Widely used; standard practice for many facilities.
Trios and harems	Common strategies to suit specific research needs.
Timed matings	Employed for specific research requirements.
Plug checking	58% do not check for plugs, likely due to the use of permanent pairing.
Breeder selection	Over 80% of the time, the researcher selects new breeding animals to reduce technical errors.
Performance tracking	91% of respondents track breeding performance to monitor colony health.

Graphics depicting actual answers to questions asked

Age at which mice are paired for breeding



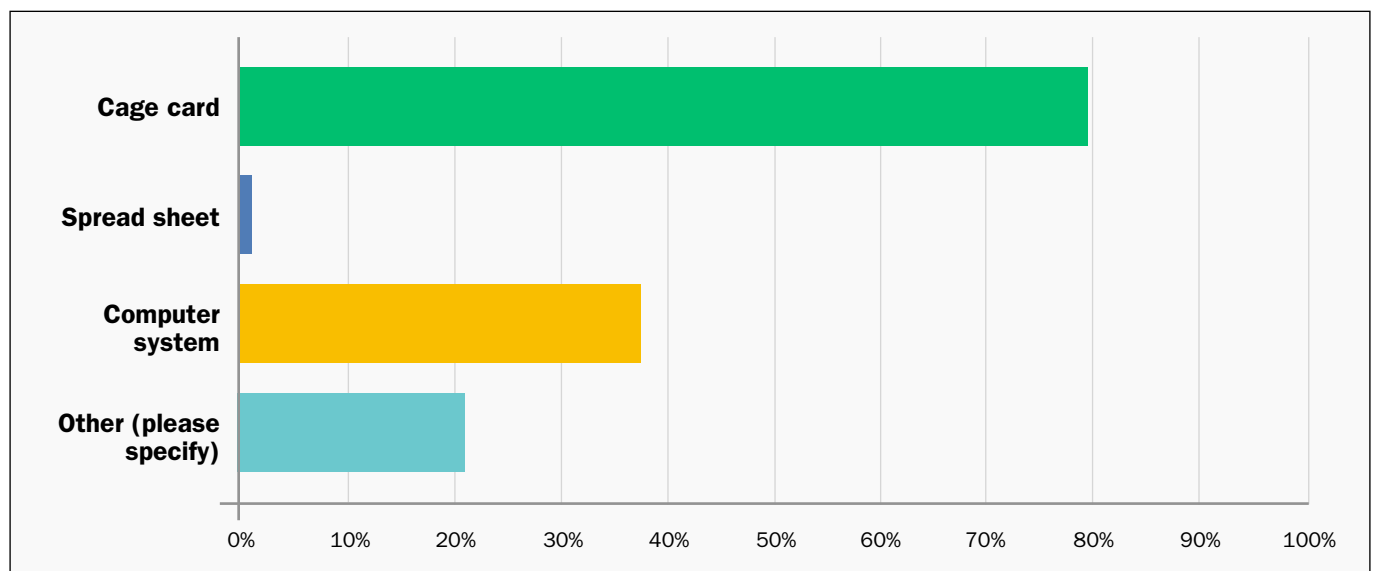
Judgement of economic breeding life

- by number of litters – 92%
- by a set time period – 81%

Between 73% and 81% of respondents used both methods where one method was more applicable than the other.

Methods of tracking mouse meaning records across surveyed facilities (n = 101). Percentages exceed 100% due to respondents utilising multiple recording methods, highlighting a widespread reliance on concurrent physical (cage card) and digital (computer system) logging workflows.

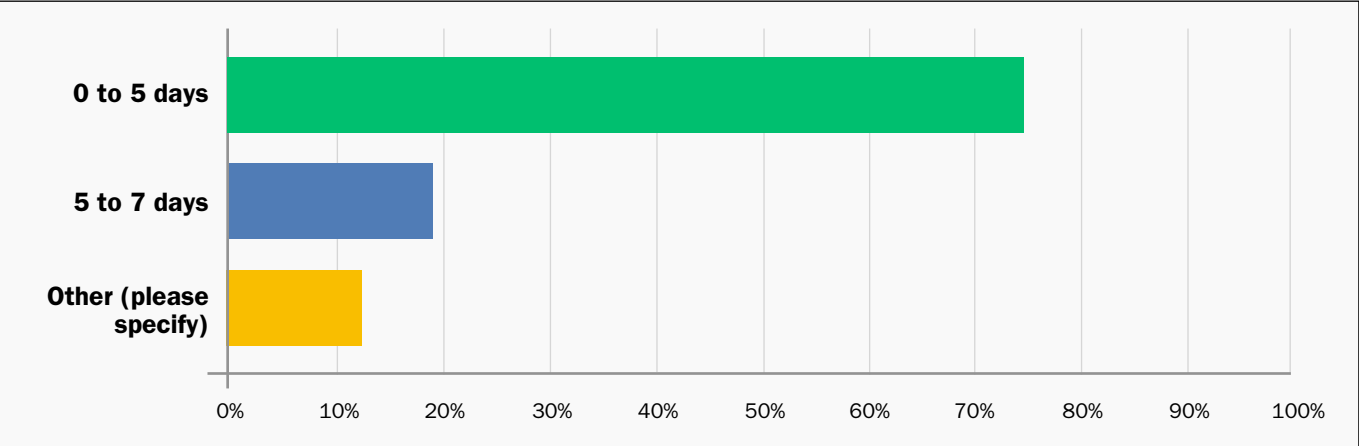
How is pregnancy recorded?



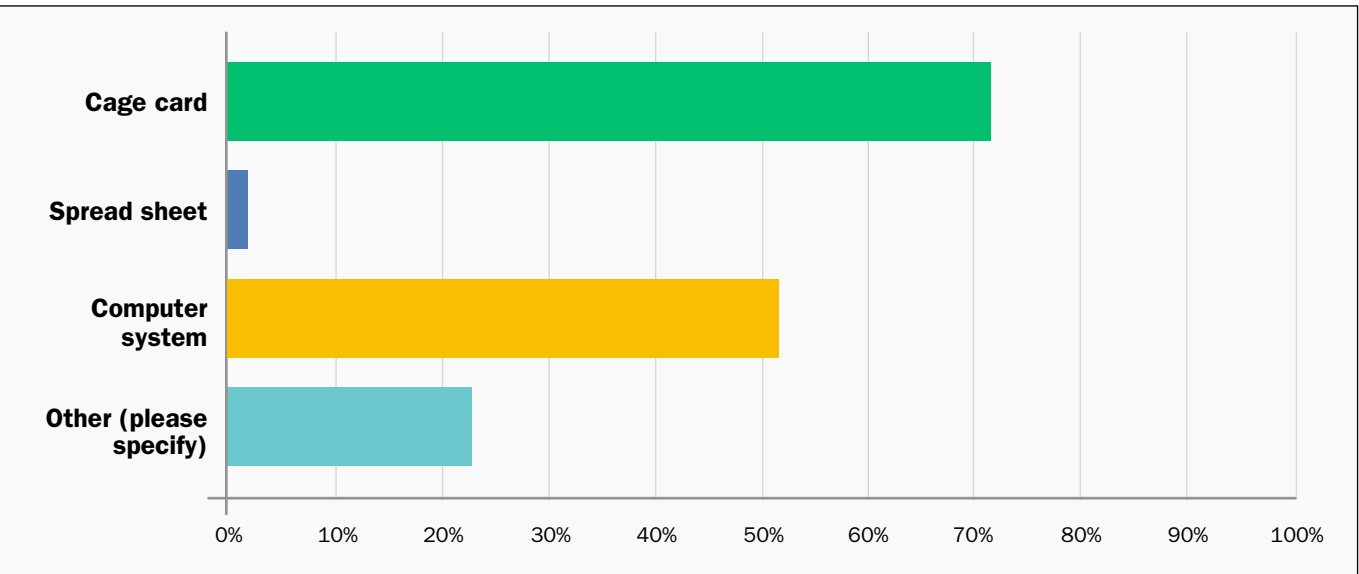
How often are cages checked for litters?

93% of respondents check daily.

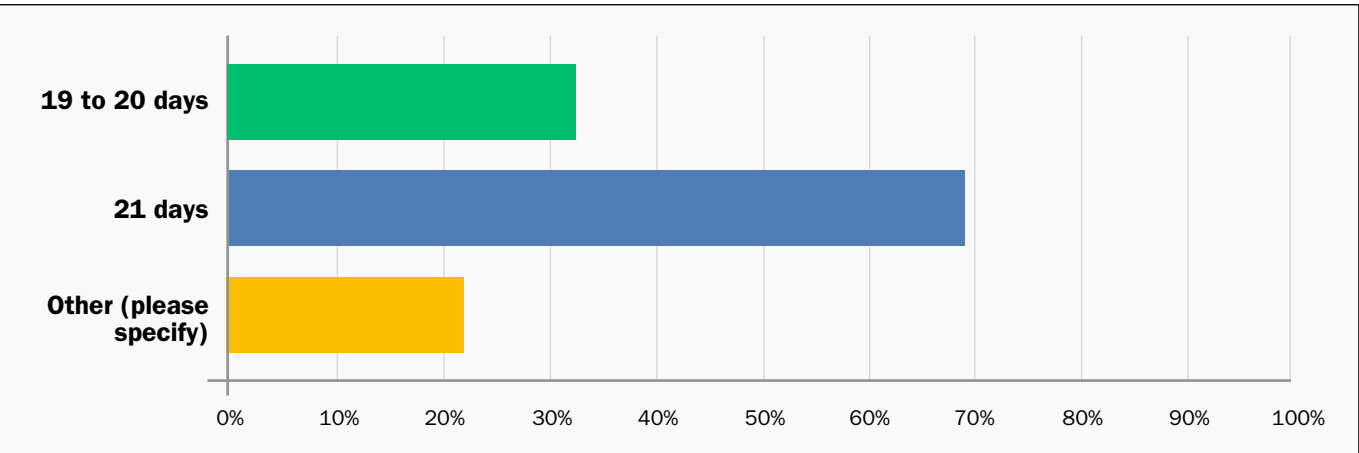
Age of pups when counted and recorded



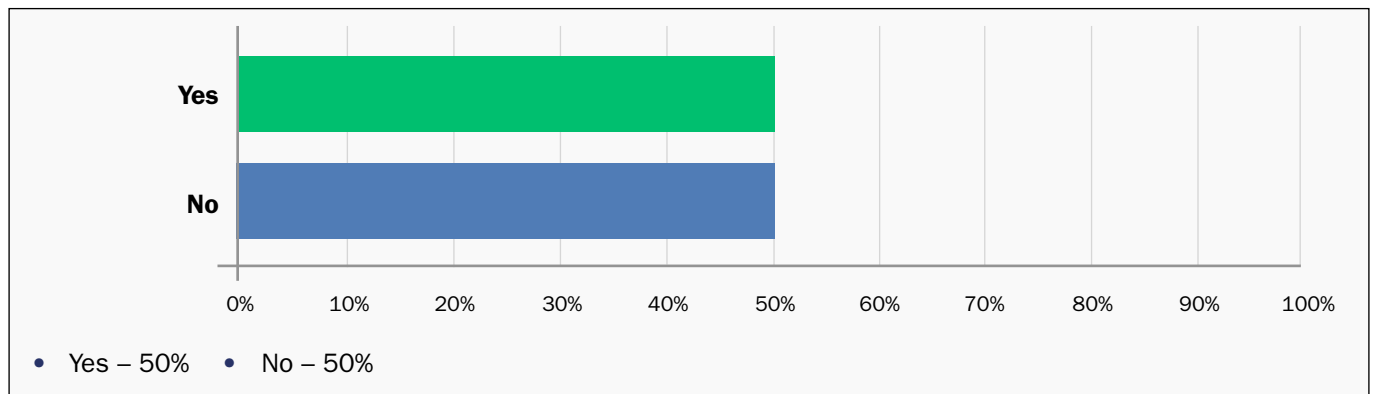
How weaning is recorded



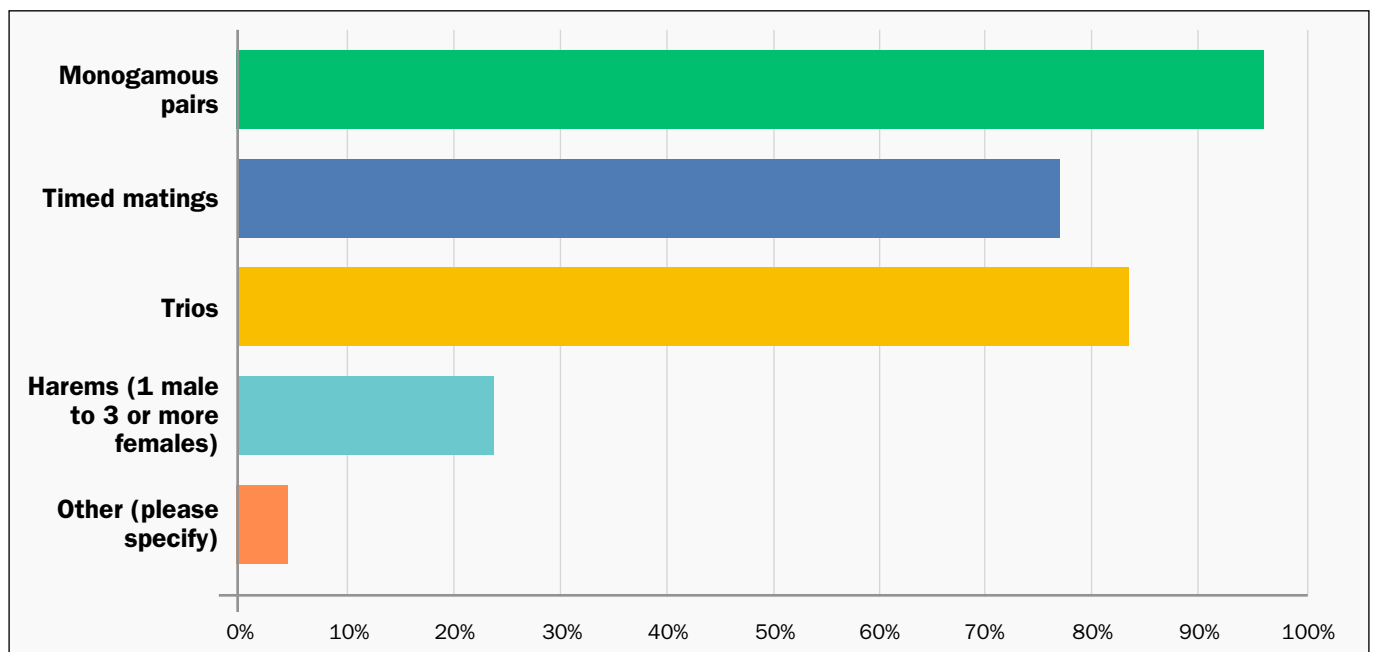
Age at weaning



Is weaning performed at weekends and Bank Holidays?



Breeding strategies



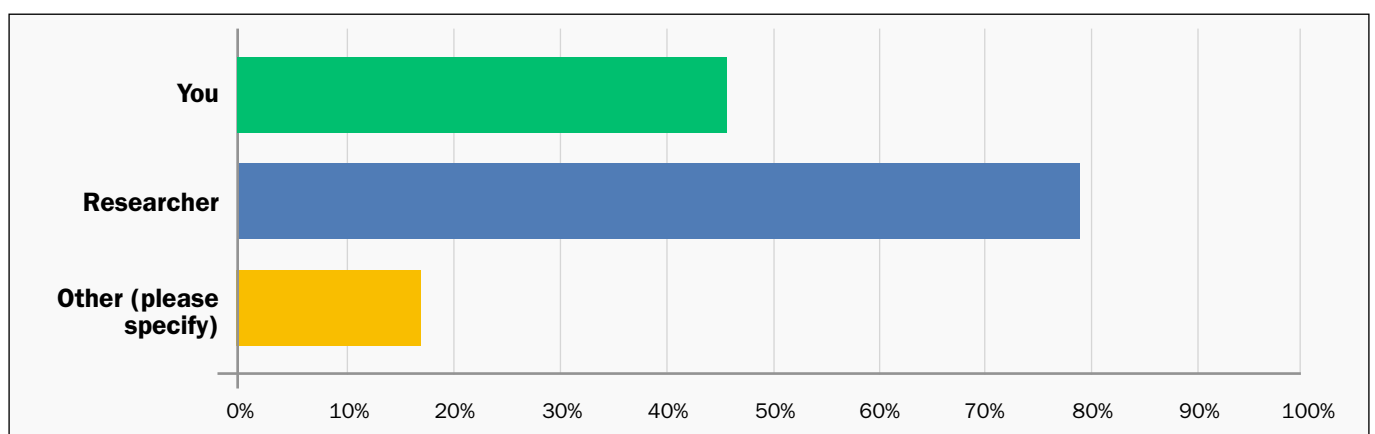
Are pedigree charts monitored and updated?

• Yes – 38% • No – 62%

Are breeding females plug checked?

• Yes – 41% • No – 59%

Who selects new breeders?



Is breeding performance tracked?

- yes – 91%
- no – 9%

Almost all surveyed facilities (91%) actively monitor breeding performance, making it a standard routine. Only 9% do not track these metrics. When compared to how data is recorded, this high rate shows that Animal Technicians are not just keeping passive records; they are facing strict demands to collect data which actively drives the double handling of information across both physical cage cards and computer systems (see weaning records).

Nutritional protocols and dietary disparity

Survey data reveals a notable operational split in nutritional management, with 64% of facilities utilising a standard maintenance diet compared to 45% implementing a specialised breeding diet. This may suggest that many facilities are either prioritising the prevention of parental obesity and the stabilisation of baseline metabolic variables or standardising diet to prevent human error in feeding or for economic reasons. The remaining 4% is likely to account for highly specialised facility workflows likely encompassing custom purified formulas for fragile mutant strains, medicated chows for gene activation, or gel-based recovery supplements on the cage floor.

Section 5: summary of regulatory standards (Directive 2010/83)

Facilities must adhere to minimum space allowances to ensure Animal Welfare.
For mice, the following standards apply:

Environmental standards for mice (Directive 2010/63/EU)

Parameter	Recommended range	Regulatory notes
Temperature	20°C to 24°C	Maintain stability; nesting material is required to allow for thermoregulation.
Relative humidity	45% to 65%	Must stay above 40% to prevent 'ringtail' and respiratory distress.
Air changes	15–20 per hour	Minimum rates to ensure ammonia and CO ₂ levels remain low.
Light cycle	12h Light / 12h Dark	Gradual transitions (dawn/dusk) are recommended to reduce stress.
Noise levels	< 50 dB	Avoid sudden loud noises and high-frequency (ultrasonic) interference.

Category	Bodyweight (g)	Min. Enclosure Size (cm ²)	Floor Area per Animal (cm ²)	Min. Enclosure Height (cm)
Breeding	N/A	330	For monogamous pair or trio. Add 180 cm ² per additional female and litter.	12
In Stock	Up to 20	330	60	12
In Stock	20 to 25	330	70	12
In Stock	Over 30	330	100	12

Section 6: conclusion and recommendations

1. Workforce composition and expertise

The survey results confirm that the breeding and management of mouse colonies are primarily driven by a highly skilled technical workforce, specifically technicians, senior technicians and specialist technicians. A notable subset of managers and deputy managers also remains active in these operations to ensure that high-level oversight is paired with practical expertise. Furthermore, the integration of junior technicians into colony care suggests a healthy framework for professional development and internal progression within facilities.

2. Professional accountability and Named roles

A significant finding is that over 50% of respondents hold a Named Person role, most commonly as a Named Animal Care and Welfare Officer (NACWO). This indicates that frontline technical staff are deeply integrated into the regulatory and welfare leadership of their institutions. While 40% of respondents do not currently hold such roles which is likely due to their status as junior staff members, this represents a clear opportunity for professional growth and future certification as they gain the necessary experience.

3. Industry sustainability and knowledge retention

The industry currently benefits from a veteran workforce, with a high proportion of staff possessing a minimum of 21 years of experience. However this demographic trend presents a looming risk to institutional memory. With only 11% of respondents having between 5–10 years of experience, the industry faces a potential skills gap as senior staff approach retirement. Strategic future planning is essential to ensure that the nuanced skills required for mouse breeding are effectively transferred to the next generation of technicians.

4. Facility standards and animal health

University settings remain the dominant sector for breeding, accounting for 70% of respondents. The data also reflects a clear shift toward high-health-status environments, with most animals housed in SPF, full barrier or containment facilities. The relatively low use of conventional areas (30%) underscores an industry-wide commitment to minimising biological variables and maximising animal health through sophisticated barrier systems.

The people and the future: opportunities and risks

Category	Current Strength	Future risk	Strategic opportunity
Experience levels	Over 40% of staff have 21+ years of industry experience.	Only 12.30% of respondents have less than 5 years of experience.	Formalise knowledge transfer protocols before senior staff retire.
Professional roles	High technical proficiency; 46.35% are technicians or senior technicians.	A low percentage of junior technicians (1.63%) and trainees (0.81%).	Increase recruitment at the apprentice level to build a sustainable talent pipeline.
Regulatory oversight	Over 50% of frontline staff hold NACWO roles.	40% of the workforce does not currently hold a Named Person role.	Create career progression maps for the 40% to move into Named Person roles.
Operational setting	Strong presence in universities (70%) with high-health status barriers.	Potential non communication/ demonstration of skills if commercial/ private sectors (30%) are not as integrated.	Encourage inter-sector collaboration to share best practices in SPF and containment.

Recommendations

1. Future planning: Establish formal mentorship programmes to transfer knowledge from the 40% of experts with a minimum of 21 years of experience to new staff.
2. Digital transition: Encourage the adoption of computer systems for recording pregnancies and weaning to improve pedigree tracking, which is currently performed by only 37% of respondents.
3. Welfare refinement: Continue using spot cleaning to minimise social disruption, particularly for pregnant animals and females with litters.
4. Training Pathways: Create opportunities for the 40% of staff not in Named Person roles to grow into NACWO positions.