The use of floor pens for social housing naive rabbits

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Abstract

In 2024, Inotiv RMS UK created a new facility for social housing of New Zealand White rabbits. The current practice in our breeding barrier is to wean rabbits at five weeks old into pairs or trios and maintain them within cage housing until the point of sale.

The new facility allows rabbits to be housed in floor pens with rabbits weaned directly into groups of forty rabbits. The pens have been designed to allow rabbits to interact with each other across a 60,000cm^2 area. A variety of enrichment is provided and rabbits remain in these social groups until the point of sale, which is generally between ten and sixteen weeks of age.

Whilst floor pens have gained popularity in research facilities in recent years, we present here their successful use by a commercial breeder. Rabbits are gregarious animals and can form complex social relationships with each other. Social housing has been shown to reduce stress-related behaviours.

Introduction

Inotiv has been breeding and holding rabbits on the RMS UK site for 21 years held in cages readily available to purchase on the market. During that time, we investigated the use of floor pens for social housing but were unable to finalise a design concept we were completely happy with for both staff and rabbits.

During 2023 we realised an increase in rabbit sales which led to an increase in our production. To achieve the increase we required a second facility and decided to revisit the floor pen concept.

We present positive observations from technicians working in this facility. We have also received positive feedback from customers who have noted a calmer behaviour in the animals they have purchased. We have further plans for continuous improvements to rabbit welfare at Inotiv.

Enrichment

Our rabbits are currently given daily a range of reuseable and disposable enrichment which is rotated regularly, this includes:

- tray-liners, folded or balled up
- cardboard tubes of different sizes
- aspen bricks
- Bed r nest™
- rubber balls
- apple blocks
- Omelet™ rabbit hides

Hay is provided to enable the rabbits to mimic natural grazing behaviours and is essential to the rabbits' dietary requirements. It can also be a source of enrichment and allows nesting and digging behaviours. We have recently tried hay nets instead of just putting it on the floor and they like these, we still encourage grazing with providing a loose portion of hay and other enrichment ideas.

We are continually looking to evolve and introduce new types of enrichment via trials to reduce boredom and encourage natural behaviours

Design phase

Our veterinary and operations team (the technicians) worked together to gather information and concepts from around the industry. Coming together to discuss their findings and ideas.

During this phase, we noticed a few institutes were housing rabbits that were in use in small cohorts. Another small number of institutes used playpens to offer exercise and social groups to rabbits that were singly housed in cages.

We developed a working group consisting of vets, supervisors and technicians who worked with the code of practice to develop the most optimal floor space for the number of weaned rabbits to be transferred each week to the facility.

We considered the following:

- the size of the cohort we wanted to house
- the difficulties of housing large cohorts of rabbits
- allowing for natural behaviours
- feeding/foraging areas
- number of water drinkers per pen
- hiding areas
- paying special attention to the locomotive activity

Our design

Our standard working practice is to wean at five weeks old; these are then introduced into our new refurbished rabbit facility via the HEPA-filtered air wash built into our vapourised hydrogen peroxide (VHP) unit.

They are transferred to the facility in transport boxes in groups of five, they are unboxed and placed into their new groups of forty.

Each pen has a floor space of 20,000cm^2 and we allocate three of the pens which are connected by pop-holes to give sixty thousand 60,000cm^2 of floor space needed to house this cohort size.

The pop holes are designed so the rabbits can roam freely between the three pens allowing them to decide on their own social groups while remaining in the larger cohort.

These also allow the technicians the ability to close off the pens when required for husbandry tasks such as cleaning, health checking and weighing.

The pens have been designed with two drinkers and food hoppers this allows them the choice of where to eat and drink but also allows the rabbits a choice should there be a dominant rabbit in the pen.

Food hopper design

We tested various food receptacles, including chicken feeders and troughs. However these options proved unsustainable as the rabbits found it difficult to feed or their food became contaminated.

We have custom-designed food hoppers that attach to the sides of the pen, raising them off the ground to decrease the chances of rabbits defecating in them.

Conclusion and next steps

Based on our observations from both the veterinary team and the technicians working in the rabbit areas, we have noted the following:

- Dominance play has been observed starting at 12 weeks, which is expected.
- There has been increased interaction between the rabbits and the technicians.
- The rabbits appear more relaxed.
- The rabbits seem to be more inquisitive.
- Locomotive activity and play have both increased.
- In one of the three pens, rabbits typically use it as a toilet area.
- The rabbits tend to consume their diet more from one pen than the others.
- Digging behaviours have been observed.
- Rabbits are using the Omelet™ rabbit hides as raised platforms, we are currently designing and will be trailing the new permanent raised platforms soon.

External employees and technicians from other departments have visited the unit and commented on how relaxed the floor-penned rabbits are in comparison to those in cages. Data is still being collected and compiled as this process continues.