



Group housing for does

BACKGROUND

Rabbits are the second most farmed species in Europe¹ and are largely reared in the most intensive of conditions, in barren cages, restricted for both height and space, with only uncomfortable wire for flooring. While the meat rabbits are kept in groups, the does are typically kept in individual cages with her kittens until they are weaned (Image 1); she remains in the cage throughout her reproductive life. Recently there has been a move in the EU, in countries such as Belgium and Germany, away from barren cages for meat rabbits towards pen or 'Park systems'. These provide the rabbits with space to run and hop, height to stretch and jump, as well as enrichment for occupation, such as gnawing and hiding, and long fibre to forage, enhancing rabbit welfare.

Unfortunately, developments in the housing for does are less advanced, even with Belgium's legislation aiming for group housing by 2021², focussing on 'enriching' the individual cage (Image 2). The cage has slightly more height at 40cm with a platform giving an additional lying area of 25%. The platform may have plastic covering the wire for increased comfort. Gnawing objects and hay may also be provided.



Image 1: The majority of rabbits in the EU are farmed in Italy, Spain and France where does are typically kept in these small barren cages.



Image 2: This is an enriched cage for does. The platform allows her to escape her young and the plastic covering over the wire provides increased comfort. Gnawing material is also given.

Keeping does in cages, either barren or enriched does not adequately provide for the behavioural needs of the doe – particularly positive social interactions with other adult rabbits, and activities such as running, hopping and stretching. Restriction of these behaviours often leads to stereotypic behaviour (such as repetitive bar gnawing or fur plucking), characteristic of bored and frustrated animals.

To date, the main reason for housing does individually has been to prevent aggressive behaviours which occur when does defend their litter, territory or social position³ from other does. This behaviour can be severely detrimental to their mental wellbeing leading to stress and anxiety, as well as physical injury and even death (for both the kittens and does). It is often stated that the cost of group housing outweighs the benefits⁴ and there has been little investment in science to investigate alternative housing systems, so individual housing still prevails.

A COMMERCIALY SUCCESSFUL DOE HOUSING SYSTEM

Kani-Swiss GmbH, Swiss rabbit producer for Coop Switzerland



Kani-Swiss have been farming rabbits for over 25 years. Their ambition was to rear animals as humanely as possible and over the years they developed their own higher welfare doe group housing system as well as park systems for meat rabbits. Kani-Swiss is a commercially successful company that supplies into Coop Switzerland, one of the two main retailers in Switzerland.

Kani-Swiss also have their own slaughtering and processing facilities, producing around 85% of their meat for Coop Switzerland with the remaining meat marketed under their own brand and sold in local butcheries and as pet food (under their own pet food label).

This case study highlights how to manage group housing of does.

Table 1. An overview of information about Kani-Swiss's farms

Certification scheme	Swiss animal protection law and BTS (Besonders tierfreundliche Stallhaltung) Swiss Animal Protection
Breed of rabbits	White French Hybrid – 'Hycote'
Number of farming sites	42
Number of does	3800 across farms
Number of fatteners slaughtered per year	Approximately 150,000
Slaughter weight	2.7 – 2.8kg live weight (LW)
Time to reach slaughter weight	80 – 90 days
Number of stock persons per farm	2
Space allowance	Fatteners: min. 1,500cm ² /rabbit Does: min. 1000cm ² /doe (first 12 days) min. 6000cm ² /doe
Group size	Fatteners: 25 – 28 rabbits Does: 8 does
Age of fatteners at weaning	28 days old
Environmental Enrichment (image 3 and 4 below)	<ul style="list-style-type: none"> • Multiple Platforms • Gnawing sticks • Straw • hay/silage • Natural light • Shelter



Images 3 and 4: A doe carrying straw to build her nest. In the park system (right) the platforms and other enrichment material are visible. The varying levels and the length of the pen allow for more natural behaviours such as running, jumping, hopping and hiding.

DOE HOUSING

The Kani-swiss system keeps the does in individual enriched cages from 2 days prior to kindling to 12 days post-partum – replicating the individual nest building of the doe in the wild, and protecting the young from aggression from other does.

After this the cages are opened and the rabbits are free to move around and socialise with each other (image 6). The breeding females are reared together from when they are young and kept in groups of 8 to maintain group hierarchy and stability. Even with this stable grouping there can be aggression when does are mixed again after 12 days of being enclosed. At that time it is important for stockman to watch over and prevent any overt aggression that might lead to injury. They watch the pens for at least an hour after mixing to ensure aggression is kept to a minimum and dealing with any obvious overt signs of fighting. While the does are enclosed in the kindling area (image 5) they are given free access to their litter (this does not always occur in standard intensive systems). Does will typically nurse their young once a day.

Image 5 - This is the mother doe with her litter at 16 days old. At this point she is free to join the group. The kittens are too small to leave. She is provided with straw, hay, gnawing wood and solid and plastic slatted flooring. She will be enclosed in the enriched cage for the 12 days (10 days) post-partum. The cage provides 1000cm² area for the doe and her litter. Once the kittens are around 18 days old they are big enough to leave the cage if they wish. They must be returned at night to ensure they get fed by their mother.

(1) Platform with comfortable solid flooring and straw for bedding. It also provides an opportunity for the doe to escape the kittens. (2) Individual ad libitum feeder for each doe (3) Nest box which provides a good environment for the kittens and substrate for nest building (4) comfortable slatted plastic flooring instead of wire (5) Gnawing opportunities such as wooden blocks. Hay is placed on the roof.





Image 6 - Does are kept in groups of 8. From 10 days post-partum they are free to move around the pen. There are many hiding places for rabbits if they need to escape an aggressor. The multiple levels allow much more movement for the does, which improves bone strength⁵. Here you can see does socialising. Rabbits enjoy allo-grooming as well as body contact². The solid flooring gives better comfort and hock lesions are not seen in this system (they are typical in caged systems).

(1) Barrier between individual kindling areas (2) wire lid is lowered for 12 days to enclose the does (2 days pre- and 10 days post-partum) (3) Nesting box (4) Ad-libitum pellet feeder (5) Open space on solid flooring for does 10 days post-partum (6) Platform and shelter for additional hiding if needed to escape an aggressor or to rest.

By enclosing the does in the kindling areas for the first 10 days post-partum, does cannot exhibit negative behaviours such as multiple does nesting in one box and cannibalism of kittens by competitive does. At mixing through injuries can occur and this system suffers around 9% of rabbits with minor injuries (typically scratching or biting injuries). If rabbits are seen to be fighting at mixing time they are either closed up in the kindling area again until they are calmer or removed from the group. The does are then in groups for 28 days.

Antibiotics are not used unless an individual rabbit requires treatment. The only medication routinely used is an anthelmintic coccidiostat for the fatteners as systems with solid or part slatted flooring increase the risk of infection by the intestinal parasite coccidiosis. This is only used in the weaned rabbits as the mothers acquire immunity by the time they are adults.


Table 2. Statistics on average mortality, kindling rate and replacement rates.

Average mortality rate of does	0.5%
Average mortality rate of fatteners	6 – 7%
Kindling percentage rate	95%
Doe replacement rate per year	90%
Culling rate due to aggression	<10%

Kani-Swiss have their own slaughterhouse and processing line. Rabbits will not travel further than 100km and typically it is less than 30km to reach the slaughter house. The rabbits are individually stunned before slaughter with a pressurised air captive bolt.

KEY LEARNINGS AND TAKE HOME MESSAGE

Kani-Swiss run a successful commercial system across many farms in Switzerland and deliver higher welfare rabbit farming for both does and fattener rabbits. The table below details the key challenges and solutions:

Challenges	Solutions
Aggression with does	<ul style="list-style-type: none"> - A genetic strain of rabbit with a calmer temperament was chosen. - Additional space - Multiple hiding areas - Plenty of straw and hay - Stable groups of does - 12 days enclosed to reduce the worst forms of aggression around post-partum.
Higher workload, especially during mixing.	<ul style="list-style-type: none"> - Highly experienced trained staff - Acceptance that the system requires more work but there is a premium paid for this.
Soiled litter	<ul style="list-style-type: none"> - Platforms cleaned daily and litter on floor is cleaned weekly to prevent too much spoilage - Fattening rabbits are given coccidiostats to reduce the risk of coccidiosis (adult rabbits are immune).
Air quality management, due to the close proximity of animals with their faeces and bedding	<p>The air extraction is made at ground level, where the major concentration of ammonia is (extraction tubes are closer to the ground- see image below – the grey pipe attached to the green pipe removes the air).</p> 
Stable groups of does	<p>Female rabbits destined for breeding are often placed in their groups from an early age. Regardless of this fighting may still occur and therefore careful watching at mixing time is required, as well as fresh enrichment like straw to occupy the rabbits.</p>
Increased cost of production	<ul style="list-style-type: none"> - By supplying to a retailer that is willing to pay and charge for the additional cost of rearing higher welfare rabbits. With the higher animal welfare standard is declared on the product and visible for the consumers. - Kani-Swiss also have their own brand of products and have built up a brand that provides hypo-allergenic food for pets which is very popular.

REFERENCES

¹FAOSTAT (2012) Food and Agricultural Organization statistical database. Available at:

<http://faostat3.fao.org/faostatgateway/go/to/download/Q/QL/> Last accessed 10/10/15.

² Federal Public Service Public Health, safety of the food chain and environment – 29 June 2014 – Royal Decree concerning the welfare of rabbits in farms

<http://www.vvsg.be/veiligheid/brandweer/brandweershervorming/Documents/KB%202014.06.29%20personeelsplan.pdf>

³EFSA (2005) European Food Safety Authority, Scientific Panel on Animal Health and Welfare The Impact of the current housing and husbandry systems on the health and welfare of farmed domestic rabbits. The EFSA Journal, 267, 1-31.

⁴Szendro, Z., McNitt, J.I. (2012) Housing of rabbit does: Group and individual systems: A review. Livestock Science, 150, 1-10.

⁵ Buijs *et al.* (2014) – Effects of semi-group housing and floor type on pododermatitis, spinal deformation and bone quality in rabbit does. Animal, 8, 1728-34.