



Submission

Report for the Draft Code of Welfare (Rabbits) 2021



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Introduction

Please note: This is an explanatory report for the draft Code of Welfare submitted to NAWAC for consideration. This document has not been issued by the Minister for Agriculture and is not a current Code of Welfare.

Codes of welfare are developed by the National Animal Welfare Advisory Committee (NAWAC). Under section 70 of the Animal Welfare Act 1999 (the Act), the Minister, NAWAC, or any other person may prepare a draft code of welfare. If a specific industry or organisation believes a new code, or an updated code, is needed, they can invest their own resources to develop a draft code before sending it to NAWAC for consideration. NAWAC Guidelines for Writing a Code of Welfare can be found [here](#).

Please note that as such, the draft code released by SPCA is a revised version submitted to NAWAC after initial review by NAWAC.

1. Why is a code of welfare for rabbits important?

Rabbits are a popular companion animal in New Zealand. There are over 120,000 companion rabbits in New Zealand homes (CANZ, 2020). Rabbits may also be reared for breeding for the companion animal industry, research, meat, and fur.

In all instances where rabbits are kept, their welfare may be compromised if their physical, health, and behavioural needs are not met.

The number of complaints that SPCA receives about rabbits is rising each year. In the 2020/21 year, we received 245 calls about rabbits, compared to 199 the year before and 176 the year before that. Compared to other hot-button issues considered by MPI, the decision to regulate backrub in livestock in the transport industry in 2018 was based on an average of 30 calls per year.

In the first quarter of 2022 alone, the following has occurred:

- SPCA has reported its concern about a [rising trend of rabbit hoarding](#), stating that it is not uncommon for our inspectors to come across hundreds of rabbits stacked in cages in backyards;
- Auckland Council removed nearly [400 rabbits from one house in Mt Eden](#), and an independent rescue spent \$30,000 caring for them;
- Another independent rescue [reported paying for rabbits advertised for meat](#) and took dozens of rabbits from a situation where they were kept in stacked cages on wire floors.

SPCA has informed Helping You Help Animals (HUHA) that a rabbit Code of welfare has been submitted to NAWAC and they await the next steps. HUHA advised that they helped SPCA [rescue nearly 50 rabbits](#) from a hoarding situation in late 2021. In 2017, [they bought an entire meat rabbit operation](#).



The rabbits were housed in wire cages and were hosed down to keep them clean. Some of the rabbits had injuries such as broken legs, facial injuries, and urine scalding.

Rescues may be opting to buy rabbits out of these situations, rather than report them, out of fear that the situation cannot be investigated properly because there are no applicable standards that people can easily view and understand.

This is a concern that SPCA has raised repeatedly with MPI and NAWAC. Failing to address companion animal welfare standards risks undermining public trust in the effectiveness of animal welfare inspectors and the animal welfare system.

Rabbits are sentient animals that are covered by the Animal Welfare Act. According to [New Zealand's Animal Welfare Strategy](#), New Zealanders have strong animal welfare values. Animals play an important part in many aspects of New Zealand life, including as companions. New Zealanders believe that it matters how animals are treated – it matters to the animal and it matters to us.

The Act establishes the fundamental obligations relating to the care of animals and provides for the development and issue of codes of welfare. Codes of welfare expand on the basic obligations of the Act by setting minimum standards and recommending best practices for the care and management of animals.

As described on [MPI's website](#), it is important to have codes for different species because with so many species and situations, it is impractical to cover all standards in the Act itself.

MPI further explains that codes of welfare are intended to be flexible enough to be implemented, modified and improved as community expectations, good practice, scientific knowledge and technical advances allow.

SPCA notes that a rabbit code of welfare is already on NAWAC's code review programme, with a timeline "to be determined". NAWAC has been discussing a rabbit code, which people can observe via publicly available minutes, since 2019.

Codes of welfare also provide guidance for owners that act as a definitive government source of information that can be adapted and shared. For rabbits, this is important as they are often incorrectly considered to be "starter" or "easy" pets that do not have needs as complex as dogs and cats. Recent research out of the United Kingdom has raised concerns about possible owner attitudes towards rabbits as pets: *"rabbits regarded as cheap and replaceable may be less likely to be provided with appropriate veterinary care (such as vaccinations), may be left to children as the main person responsible for animal care and contributes to both relinquishment to shelters and reduced life expectancy."* (Rioja-Lang et al., 2019).

The latest report from Companion Animals New Zealand (CANZ, 2020) indicates there are gaps in knowledge of owners providing for the physical, health, and behavioural needs of rabbits. These gaps include:

- While rabbits are social animals, only 46 % of rabbits live with other rabbit companions, and less than half of owners think that rabbit companionship is important;
- Just 19 % of pet rabbits are microchipped, and only 22 % of owners think it is important. In addition, only 35 % are desexed;
- Just 56 % think vaccination is important.



2. What will it be used for?

The purpose of all codes is to provide guidance to the owners and persons in charge of rabbits about the standards they must achieve to meet their obligations under the Animal Welfare Act.

This code sets minimum standards for the care and management of rabbits. It also includes recommendations for best practices to encourage the adoption of the highest possible standards of husbandry, care, and handling. Advice is given to encourage a high level of welfare. Explanatory material is provided where appropriate.

Failure to meet a minimum standard in this code may be used as evidence to support a prosecution for an offence under the Animal Welfare Act. A person charged with an offence against the Animal Welfare Act can defend him or herself by showing that he or she has equalled or exceeded the minimum standards in this code.

Our inspectors are requesting a New Zealand-specific set of standards that will assist them with issuing mitigation or compliance notices. Without a supporting (evidence-based) document, it can be difficult to direct charges.

3. Who will it apply to? What animals will it apply to?

This code of welfare is intended for all persons responsible for the welfare of domesticated rabbits, including those kept as companions, for breeding, farming, or any other purpose. Under the Act the “owner” and every “person in charge” of an animal are responsible for meeting the legal obligations for the welfare of animals under their care. For rabbits, the owner of the animals may place them in the care of others who become the persons in charge, but this does not derogate from their responsibility to ensure that the requirements of the Act are met. The owner and person in charge of the animals will ensure the meeting of minimum standards relating to the provision, design and maintenance of the facilities and equipment, allocation of operational responsibilities, and ensuring competence and supervision of employees.

4. What would happen if you didn't have the code?

Rabbits experiencing sub-optimal or poor welfare will continue to do so. The absence of a code of welfare for rabbits means that there is limited guidance available on how rabbits should be kept and farmed so that their physical, health and behavioural needs are met.

The SPCA Inspectorate will continue to have very few tools to address welfare cases related to rabbits. The inability to refer to a resource that provides information to the owners and persons in charge of these species about the standards they must achieve can result in subjective assessments being made by inspectors and veterinarians, which makes it difficult to achieve national consistency in enforcement. It reduces the ability to impact wider industry changes if each investigation has to start from scratch without appropriate benchmarks in terms of minimum standards.

Additionally, not having a Code of Welfare for Rabbits will signal that these popular companion animals are not considered important by the government, despite the fact that New Zealanders care about their pets. According to the latest Companion Animals New Zealand survey, 50% of rabbit owners in New Zealand consider their rabbits to be ‘a member of the family.’

SPCA is concerned about NAWAC's recent statement, in the draft code report for the dairy cattle code of welfare, that codes are being prioritised according to industry prominence in the economy and reputational



risk. We are also alarmed by MPI's latest Strategic Intentions document that appears to indicate that "accelerated efforts for pastoral livestock welfare", to "increase access to high-end international markets", is essentially the only animal welfare priority for the country until 2025.

New Zealanders expect that our animal welfare system is effective for all animals, not just those that contribute to the majority of our primary industry exports. Companion animals, animals in research, animals in the wild, animals used in entertainment and farmed animals such as fish, pigs and chickens must receive adequate consideration.

At this time, it is not clear to SPCA how the codes for animals that are not central to New Zealand's exports, such as rabbits, will ever reach the "front of the queue" within MPI. Nevertheless, SPCA will continue to advocate strongly for companion animal welfare on behalf of companion animals and the New Zealanders who care about them.

This Draft Code of Welfare for Rabbits will help ensure that people have access to up-to-date information on rabbit care while the code progresses through MPI's process, which in SPCA's most recent experience with the temporary housing code can take a very long time. However, until the code is issued by the Minister, the document will not have any legislative backing.

5. What alternatives to a code of welfare (for example, industry administered quality assurance system) did you consider and why are they not appropriate?

An industry-administered quality assurance system is not relevant to companion animals. Assurance schemes such as SPCA Certified apply only to businesses.

The New Zealand Rabbit Council Inc. is the only industry group for rabbits and is aimed at people who show and breed rabbits. The group has the following objectives (RCNZ, n.d.):

- To protect, further and co-ordinate the interest of all New Zealand rabbit breeders.
- To assist and extend the exhibition of rabbits.
- To encourage the production, marketing, and consumption of the products of the rabbit (i.e., fur, wool, and flesh).
- To influence authorities, departments, education and other committees and schools in promoting the extension of breeding rabbits.
- To promote and encourage education and research of a scientific and/or practical nature.

These objectives do not include the promotion of rabbit welfare.

SPCA has developed multiple guidance documents for rabbit care, including:

- A [Rabbit Care Guide](#)
- Rabbit care articles [on our website](#)
- A rabbit foster guide, currently in development.

Guidance is not the same thing as standards under the Act. As described on MPI's website, MPI "leads and facilitates the management of animal welfare policy and practice in New Zealand." SPCA looks forward to engaging with MPI to ensure that the enforcement of companion animal welfare in New Zealand remains robust.



Our organisation considers that a code of welfare is required to provide information to the owners and persons in charge of rabbits about the standards they must achieve to meet their obligations under the Animal Welfare Act and assist our inspectorate.

Publishing a code of welfare for this popular companion animal will assist in addressing public concern for rabbits in New Zealand.

6. Are the minimum standards in the code the minimum necessary to ensure the physical, health, and behavioural needs of the animals will be met? Do they reflect good practice, scientific knowledge, and available technology? Please provide supporting evidence. What alternative minimum standards did you consider and why did you decide against them?

In the following section, we provide the rationale for minimum standards in the code based on the current scientific knowledge, good practices, and available technology for rabbits. The section corresponds to the different sections in the Code of Welfare for Rabbits. There are no Minimum standards or recommended practices in Parts 1 or 2 of the Rabbit COW, and the section below begins with Part 3.

PART 3: Food and Water



3.1 Food and Feeding

Food and nutrient requirements of rabbits vary widely. Factors to be considered include the rabbit (i.e., its age, sex, size, state of health, growth rate, level of activity and exercise, and physiological state), and the food (i.e., its nutritional composition, quality, frequency of feeding, and whether it is a new food for the rabbit).

Rabbits need a balanced daily diet in quantities that meet their requirements for health and welfare and to maintain their ideal body weight (Bradley, 2004; Clauss & Hatt, 2017). Rabbits are herbivores and need a plant-based, high-fibre diet (Bradley, 2004; Clauss & Hatt, 2017; Prebble & Meredith, 2014; Prebble et al., 2015b; Irlbeck, 2001). While good quality, balanced commercial rabbit food can be purchased, this must be supplemental to a diet of high-quality hay or grass and fresh leafy greens (Bradley, 2004; Clauss & Hatt, 2017; Prebble & Meredith, 2014; Prebble et al., 2015b). Leafy greens such as spinach, cabbage, and kale should be offered sparingly (Clauss & Hatt, 2017). Pelleted or extruded feeds are preferred and more nutritionally complete than grain mixes because different items in the mix have different nutritional compositions (Bradley, 2004; Clauss & Hatt, 2017). Hay and grass should form 85% of a rabbit's diet, 10% should be a variety of leafy greens, vegetables and herbs, and 5% pellet feed specifically designed for rabbits (Bradley, 2004; Clauss & Hatt, 2017; Prebble & Meredith, 2014; Prebble et al., 2015b; Sayers, 2010). The provision of hay as a forage cannot be overstated as important for rabbit health and welfare due to multiple benefits including (reviewed by Clauss & Hatt, 2017):

- It is ideal for the provision of nutritionally balanced feed;
- Rabbits are kept more occupied with consuming hay as it is less energy-dense and requires longer feed times;



- Can be enriching;
- Reduces wounding of cagemates, excessive grooming, and fur-chewing, which also benefits the digestive system;
- Reduces risk of obesity
- Aids appropriate tooth wear
- Reduces chewing on other objects such as bedding; and
- Promotes urinary tract health through association with increased water intake.

Hay is vital to a rabbit's health and digestive system. Hay provides dietary fibre and helps to wear down a rabbit's teeth (Clauss, 2012; Clauss & Hatt, 2017; Müller et al., 2014; Prebble et al., 2015b). Fresh hay should be provided ad libitum (Clauss, 2012; Prebble & Meredith, 2014; Prebble et al., 2015b), and feeding two or more different types of hay can provide more nutritional diversity for a rabbit (Clauss, 2012). Damp or mouldy hay must never be given due to the health problems that arise (Clauss, 2012). Dusty hay should be avoided (Varga, 2014c). Grass or other fresh greens fed to rabbits must not have been sprayed with herbicides, fungicides, and antisprouting agents (Johnston, 2008; Varga, 2014c). Mown grass should not be provided to rabbits because it ferments rapidly and there are risks of transmitting parasites or viral haemorrhagic disease (Varga, 2014c).

Many vegetables and fruits commonly fed to rabbits are detrimental to gut health and contribute to obesity (Clauss, 2012; Clauss & Hatt, 2017). Ensure vegetables, herbs, or garden greens provided to the rabbits are safe to consume, as some can be poisonous. Carrots and fruit should only be provided in small amounts as treats, as rabbits do not naturally eat root vegetables or fruit in the wild (Bradley, 2004; Clauss, 2012; Clauss & Hatt, 2017). New food should be gradually introduced to minimise the risk of diarrhoea (Clauss & Hatt, 2017). Juvenile rabbits under twelve weeks of age have particularly sensitive stomachs, so additional caution should be taken for young animals (Varga, 2014b). Adult rabbit foods can be introduced from four to six months of age (Prebble, 2014).

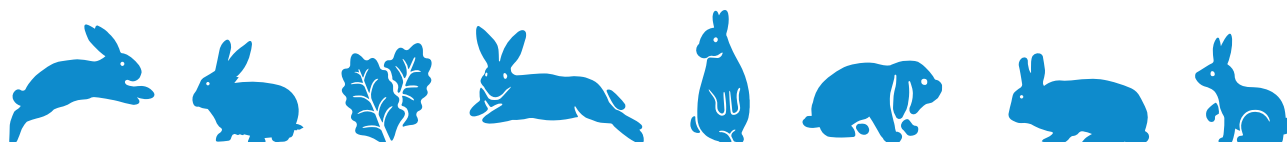
Pellets that contain dried fruits, nuts, grains and coloured pieces made from fat, sugar and salt should not be provided as they can cause intestinal blockages (Clauss & Hatt, 2017). Pellets should have a fibre content of 18-25 % and less than 16 % protein than fibre (Bradley, 2004). Growing, pregnant, nursing, and underweight rabbits may require a larger amount of pellets.

Rabbits should never be given food produced for humans, such as bread, rice, potatoes, biscuits, chocolate and other sweets as these can cause serious digestive problems (Bradley, 2004). Seed and grain-based treats and yoghurt drops should be avoided, as these are high in fat and rabbits tend to show a high sensitivity to such items (Bradley, 2004).

Food is passed through a rabbit's gut and is eliminated in two types of droppings:

1. round, fibrous 'pills', and
2. caecotrophs which are 'grape-like' bunches.

Caecotrophs are re-ingested by rabbits to ensure that the nutrients are not wasted and to maintain their gut flora. Consumption of caecotrophs can be indicative of nutritional balance; when caecotrophs are not consumed completely, then the diet should be assessed and adjusted (Clauss & Hatt, 2017; Sayers, 2010; Varga, 2014b). Caecotrophs that are uneaten and soft can be related to a number of diet problems, health issues, pain associated with ingestion, physical inability to reach or groom the perineum, and factors such as coat type, stress, change in routine (Varga, 2014b).



Rabbits in meat production systems should not be subjected to a restricted feed regime where the rabbit's welfare is compromised. Group-housed growing rabbits will show increased competition for feed and water and other agonistic behaviours (Dalmau et al., 2015), and restricted diets for pregnant does can lead to hunger and developmental problems for her fetuses (Lopez-Tello et al., 2017).

3.2 Body Condition

A healthy rabbit should have bright eyes, a clean and dense coat, a well-proportioned and muscled body, and no protruding spine or pelvic bones, ribs should be palpable (able to be touched or felt), but with a light fat covering (Pet Food Manufactures Association, 2015; Prebble et al., 2015a; Stapleton, 2014). The abdominal fat pad should be minimal; excessive fat here indicates obesity, which can contribute to disease (Pet Food Manufactures Association, 2015; Prebble et al., 2015a; Stapleton, 2014).

The body condition of rabbits cannot be assessed by simple visual observation – the extent of fat deposits can only be accurately assessed by feeling the tissues over the rabbit's ribs, backbone, pelvis and abdomen (Pet Food Manufactures Association, 2015; Prebble et al., 2015a; Stapleton, 2014).

Obese rabbits face serious health risks such as gastrointestinal problems including gut stasis, diarrhoea, and cessation of caecotrophy; renal, dental, and heart disease; liver disorders; hyperthermia; urine scalding; cystitis; fly strike; and pododermatitis (Clauss & Hatt, 2017; Meredith, 2012b; Stapleton, 2014). Excessive weight can also damage joints, reduce mobility, and exacerbate arthritis (Clauss & Hatt, 2017; Meredith, 2012b; Stapleton, 2014). Obesity increases risks to the rabbit under anaesthesia and during pregnancy (Stapleton, 2014).

3.3 Water

Good quality water should be available at all times for all rabbits (Clauss & Hatt, 2017; Mancinelli, 2017; Wolf et al., 2020). Rabbits have a preference for and consume more water when offered in open dishes compared to nipple drinkers (Clauss & Hatt, 2017; Tschudin et al., 2011a; 2011b). The water intake of rabbits will vary between individual rabbits and can depend on weather conditions (especially temperature), lactation and health issues (Wolf et al., 2020). Lack of water can cause a rabbit to become seriously ill. Dehydration can become a serious problem for rabbits when diarrhoea or other medical conditions occur, as this causes excessive fluid loss from the body (Tschudin et al., 2011b).

PART 4: Containment and Housing



Rabbits can be housed indoors or outdoors. Wherever they are situated, they need access to shelter that provides warmth and is free from draughts and excessive heat or cold, to meet their physical needs (Clauss & Hatt, 2017). They also need a dry bed and sufficient space to move around (Clauss & Hatt, 2017; Trocino & Xiccato, 2006; Valuska & Mench, 2013). Rabbits may prefer larger cages (Mikó et al., 2014), and the total surface area that allows rabbits to express locomotion behaviours is important for their welfare (Clauss & Hatt, 2017; Postollec et al., 2006)(Prola et al., 2013). Rabbits are more active and interact with items in their environment when housed in larger cages (Dixon et al., 2010).



Rabbits need to be housed to prevent them from escaping, harming themselves or damaging the environment (Clauss & Hatt, 2017). The size and type of containment or housing used can significantly impact a rabbit's welfare (Clauss & Hatt, 2017; Trocino & Xiccato, 2006; Valuska & Mench, 2013). Containment within an area or house that is too small, or which contains insufficient space to exercise or enrichment to explore, can have a significant negative impact on the physical and mental health of rabbits (Dixon et al., 2010). The need for rabbits to exercise and fulfil their behavioural needs must be considered, along with the necessity for rabbits to be protected from exposure to extreme temperatures (Crowell-Davis, 2007).

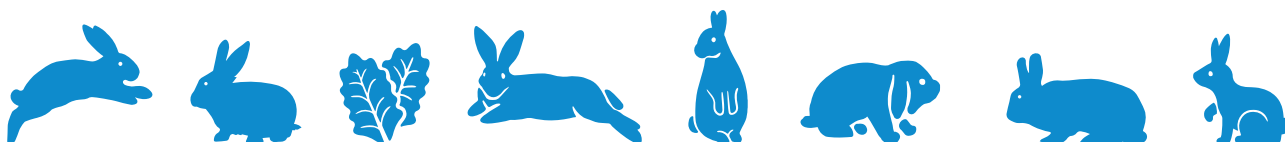
Wherever they are housed, rabbits need access to a secure environment where they can exercise and explore. Rabbits kept outdoors should be confined within well-ventilated housing (Marai & Rashwan, 2004; Popescu et al., 2013) such as a rabbit hutch with a run. Rabbits can also be trained to use litter boxes and can be kept as indoor companion animals (Crowell-Davis, 2007; Varga, 2014c). Areas accessible to a rabbit must be rabbit-proofed to prevent chewing of electrical cords and consumption of potted plants.

In general, the following considerations can help with hutch, cage, or run design:

- Housing dimensions should be a minimum for a pair of small to medium rabbits should be a minimum (APGAW, 2021):
 - > A rabbit hutch or cage should be at least 3 metres long by 2 metres wide, and at least 1 metre high for a compatible pair of small to medium-sized rabbits.
 - > The sleeping area should be 1 x 1m (L x W) and at least 0.75m high (or 1.25m if open above).
- Wire-bottomed enclosures should not be used as these can cause the rabbit's feet injuries and sore hocks (in meat rabbits: Mikó et al., 2014; Rommers & De Jong, 2011; Rosell & de la Fuente, 2009; Ruchti et al., 2018), and are associated with reduced abnormal behaviours, less stress, and health disorders (Buijs et al., 2014; Clauss & Hatt, 2017; Marai & Rashwan, 2004). Rabbits demonstrate a preference for alternatives to wire mesh floors (Mikó et al., 2014; Princz et al., 2008). In instances where rabbits are kept in wire bottom cages, plastic foot pads or foot rests can improve foot health (Rommers & De Jong, 2011; Szendro et al., 2016).
- Toxic materials, such as lead-based paint, cause a risk of poisoning.
- Metal hutches or enclosures with a metal or plastic roof can become extremely hot in warm weather and are not advised.
- Where enclosures are made of wood, the floor should not be slatted with gaps to prevent injuries.

Exercise is essential for the physical and mental health of rabbits, particularly if they are usually kept confined in smaller or crowded cages (Crowell-Davis, 2007; Dixon et al., 2010); Oneill et al., 2020; Varga, 2014b). Insufficient exercise can contribute to the development of behavioural problems (Dixon et al., 2010). Exercise requirements vary with age, breed, and individual circumstances. Older rabbits may exercise less relatively, but physical activity will remain important for both health and mental stimulation (Bays, 2020).

Rabbits are a prey species and need to be able to hide in secure places (Crowell-Davis, 2021). Providing items for rabbits to hide in can help make them feel safe (Crowell-Davis, 2021). Suitable items include: cardboard boxes or carry cages with the door removed; tunnels; untreated wicker baskets; paper bags (remove the handles); or pipes (Clauss & Hatt, 2017; Crowell-Davis, 2021).



Rabbits must be provided with suitable amenities to ensure that they can cope with the temperature and weather conditions (Clauss & Hatt, 2017; Marai & Rashwan, 2004). They must be provided with shade during hot weather and sufficient shelter including dry nesting material during cold or wet conditions. Blocks of iced water and cold tiles can also help rabbits to cool down when temperatures rise.

Signs of heat stress in rabbits include (Dalmau et al., 2015; Ferraz et al., 2019; Marai & Rashwan, 2004)

- Body stretched out, with feet sprawled apart and limp tail
- Wetness around the nose area
- Eyes half-closed
- Tongue protruding
- Fast, shallow breathing
- Reluctance to move
- Refusal to eat or drink
- Ears hot to touch

The rabbit's sleeping area should contain appropriate bedding, such as straw, hay or shredded paper on a layer of newspaper, for nesting and warmth (Clauss & Hatt, 2017; Crowell-Davis, 2021). Treated timber and wood shavings and surfaces covered in lead-based paint can be dangerous for rabbits and should not be used (Johnston, 2008; Varga, 2014c). Rabbits should have access to a separate sleeping or nesting area that provides a darkened space (Campbell-Ward & Meredith, 2021). Does prefer darker cages for nesting (Matics et al., 2016) and rabbits provided shelter are less restless and timid and perform less over-grooming (Hansen & Berthelsen, 2000).

Rabbits should not be housed with guinea pigs to reduce the risk of transmission of *bordetella bronchiseptica* from rabbits to guinea pigs, aggression between species, different diet requirements, and poor fit as companions (Campbell-Ward & Meredith, 2021; Sayers, 2010).

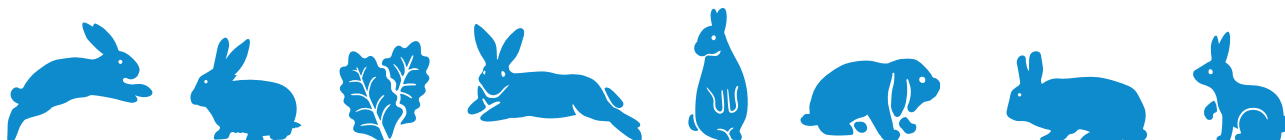
PART 5: Sanitation and Enrichment



5.1 Sanitation

The hutch or enclosure should not smell strongly of ammonia as this indicates a build-up of urine which will adversely affect the health of the rabbits (Varga, 2014a, 2014c). Rabbits should be provided clean bedding material at all times, however, as scent marking is important, keep some used bedding in their areas to reduce the stress associated with the loss of familiar substrate (Saunders, 2014).

Rabbits can be trained to use a litter tray, which will greatly assist in maintaining clean housing (Crowell-Davis, 2007; Varga, 2014c). Litter trays can be placed within the cage in the corner most frequently used for depositing to encourage the use of litter trays (Crowell-Davis, 2007). Litter trays should be big enough for the rabbit to comfortably sit (Crowell-Davis, 2007). Standard clay, clumping or crystal litter must not be used as clay litter produces a high amount of dust, clumping litter may block the rabbits' digestive



tract when ingested, and crystal litter may contain chemicals toxic to rabbits (Crowell-Davis, 2007; Varga, 2014c). Sawdust and wood shavings can irritate the skin and lungs. Paper or wood litter (in pellet form), hay, straw, or litters formulated for rabbits are recommended (Crowell-Davis, 2021; Crowell-Davis, 2007).

The environment should be well-ventilated to prevent dampness and the build-up of noxious odours and to minimise the irritation of the rabbits' respiratory systems (Varga, 2014c).

5.2 Enrichment

Enrichment is the deliberate addition of environmental complexity to an animal's environment and provides opportunities for animals to actively engage with their environment and others (Young, 2003). Enrichment helps to prevent boredom and promotes positive physical and mental health. There are different ways to enrich a rabbit's environment, but it should be ensured that any items used are safe, non-toxic, and will not cause injury.

Animals actively engage with their environment to acquire knowledge and enhance skills (Špinková & Wemelsfelder, 2011). This intrinsic ability is most at risk in barren environments. Enrichment can be used to enhance positive experiences by providing rabbits with opportunities to engage in rewarding behaviours (Boissy et al., 2007). Rabbits should have choices to understand their subjective preferences, which can vary between individuals, species, and the context.

Rabbits should be given regular opportunities to dig, forage, chew and play (Baumans, 2005; Clauss & Hatt, 2017; Crowell-Davis, 2021; Crowell-Davis, 2007; Rommers et al., 2014a). Chewing blocks made of rabbit-safe wood (hardwood), hideouts, tunnels, and interesting food for foraging can all be easily provided (Clauss & Hatt, 2017; Rommers et al., 2014b). Treat balls, paper bags or toilet rolls stuffed with hay and placing food around the enclosure will encourage natural foraging behaviours. Tunnels and hideouts are important for encouraging exercise and provide a substitute burrow (Crowell-Davis, 2021; Crowell-Davis, 2007). If rabbits don't have access to grass, a larger litter tray or planter filled with earth can be provided to facilitate digging. Toys and furniture should be switched around regularly to provide rabbits with novelty and variety.

Rabbits are highly social creatures. They require the company of other rabbits for warmth and companionship, and this should occur wherever possible. Human interaction, for example through training or playing with toys, can also be enriching for rabbits. Part 8 of this code deals with other aspects of rabbit behaviour and training.

With regards to all enrichment, it is important to ensure that:

- the enrichment provided is safe and cannot harm the rabbits in any way. This includes being non-toxic, properly installed, and/or without any small parts that could be swallowed or become a choking hazard.
- the rabbits have the choice of approaching or moving away from the object as they choose and in their own time.
- the impact the enrichment has on the rabbits' physical and mental wellbeing is monitored. If there is a negative impact, the enrichment should be removed or changed immediately.

Regardless of the number of enrichment items given, it remains important that rabbits always have enough space to move around, run, jump, and stretch upright at all times.



PART 6: Breeding



For breeders of rabbits, consideration needs to be given to the frequency at which individual rabbits are used for breeding and the age at which breeding commences and ends. Age of maturity varies with the breed and the individual rabbits (Campbell-Ward & Meredith, 2021; Elliott & Lord, 2014), and breeders should ensure that the rabbit is adult and well grown before it is used for breeding.

Only rabbits who are well-grown, are in good health and physical condition, and have a favourable temperament should be used for breeding (Elliott & Lord, 2014). At all times, the health and welfare of the rabbits should remain paramount (Elliott & Lord, 2014).

The female rabbit should be taken to the male's cage/area for mating to minimise aggression from the doe, the male's scent-marking behaviour, and to reduce the risk of fighting (Campbell-Ward & Meredith, 2021; Elliott & Lord, 2014).

6.1 Desexing

Desexing of rabbits is a significant surgical procedure under the Animal Welfare Act 1999 and must only be carried out by a veterinarian or a veterinary student under direct supervision (MPI, 2019).

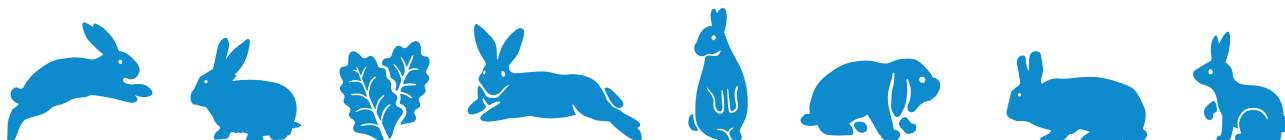
Female rabbits breed easily and can reproduce from around 4- 6 months of age, depending on the breed (Campbell-Ward & Meredith, 2021; Elliott & Lord, 2014). Desexing can be safely carried out by a veterinarian as soon as the rabbit meets the required weight for anaesthesia (Varga, 2014d). Desexing is recommended once the rabbits reach sexual maturity; desexing at 3-6 months for females and 3-4 months for males is considered easier as the rabbit will have less body fat allowing for easier identification of surgical targets (Richardson & Flecknell, 2006; Sayers, 2010).

There are health and welfare advantages of having rabbits desexed: the risk of female rabbits developing ovarian, uterine and mammarian cancers is greatly reduced; the desire of males to fight with other rabbits due to hormonal aggression is significantly lowered and they are less likely to spray urine (Bays, 2020; Bradley, 2004; Campbell-Ward & Meredith, 2010; Richardson & Flecknell, 2006; Sayers, 2010). Desexed rabbits are also calmer, more affiliative with people, less destructive, and easier to litter train, and reduce the risks of unwanted breeding (Richardson & Flecknell, 2006).

6.2 Pregnancy, Birthing and Lactation

The length of gestation in the rabbit is about 31 days (Elliott & Lord, 2014). Information about the stages of pregnancy, birthing and lactation can be obtained from experts such as veterinarians and animal welfare organisations.

In the later stages of pregnancy and during lactation, the doe should be fed a complete and balanced diet that meets the nutritional demands of pregnancy/lactation (Clauss & Hatt, 2017; Elliott & Lord, 2014). Pregnant and lactating rabbits need to be provided with an additional supplement of proteins through high fibre pellet feed, ad libitum hay, and fresh water (Elliott & Lord, 2014).



Female rabbits have rich milk and only need to feed their kittens once or twice a day (Elliott & Lord, 2014).

Domestic rabbits have the same instinct to stay away from their kittens therefore, it is important for the doe to have areas inaccessible to her kittens to reduce stress (Mikó et al., 2014; Schlolaut et al., 2013).

If possible, the kittens should not be touched for a few days, especially if the mother is nervous around humans or new to her environment (Elliott & Lord, 2014).

Other rabbits should be excluded from accessing the kittens to prevent the young from being harmed or killed or failing to thrive and to reduce maternal stress and aggression (Mugnai et al., 2009; Princz et al., 2008; Szendro et al., 2013; Szendro & McNitt, 2012; Varga, 2014c). The welfare of socially housed does can be improved by training does to only enter their own nestbox or using housing systems and only allowing a doe to enter her nestbox, enriching pens, and maintaining group stability (Mugnai et al., 2009; Szendro et al., 2016).

Female rabbits can become pregnant again immediately after giving birth (Elliott & Lord, 2014; Varga, 2014c). This should be avoided due to the needs of the kittens and the physical demands that an immediate pregnancy would place on the doe (Varga, 2014c). Does should be in a state of good body condition before breeding to respond to the energy demands of pregnancy and subsequent lactation (Castellini et al., 2010).

Male partners who live with the female rabbit should be removed from the cage and kept separate from her, but still within sight and smell so that their bond is not broken. The male rabbit should be desexed if breeding is not intended again, but it is important to remember that he can remain fertile for up to 6 weeks after castration. Before the doe gives birth, a suitable nesting/maternity box or cage should be provided in a safe and quiet environment that is warm and well-ventilated (Campbell-Ward & Meredith, 2021; Elliott & Lord, 2014; Varga, 2014c). If the doe gives birth outside the nesting or maternity box, the newborns should be moved into the nesting box immediately to avoid fatalities from exposure, as the doe will not move the kittens herself (Campbell-Ward & Meredith, 2021; Elliott & Lord, 2014; Varga, 2014c).

6.3 Weaning and Removal of Kittens from the Doe

Rabbit kittens rely on the dam's milk to obtain all nutrients for the first few days of life. Kittens' eyes will typically open at around 10 days old (Elliott & Lord, 2014). They will begin to eat solid food (usually hay from around the nest) between 2-3 weeks old and by 3-4 weeks old they will eat the same foods as their mum (Campbell-Ward & Meredith, 2021; Elliott & Lord, 2014). Kittens will often continue to take milk from their mother until they are around 4-6 weeks of age (Elliott & Lord, 2014; Prebble, 2014).

Ages for when kittens are weaned vary (e.g. 6 weeks for companion rabbits: Campbell-Ward & Meredith, 2010; minimum of 21-35 days in European meat rabbit production: Mugnai et al., 2014; Verga et al., 2007). Weaning time should balance the welfare needs of both the doe (energy balance, mammary health, and stress) and the kittens (growth and survival) with too early harming the young, whereas later weaning can harm the doe (Schlolaut et al., 2013; Verga et al., 2007). Weaning is a stressful time for the kittens (Gharib et al., 2018). Diets should be formulated to optimise nutrition for the weaning kittens to reduce stressors during this time (Verga et al., 2007). Rabbits subjected to post-weaning feed restriction are likely to experience hunger (Gidenne et al., 2012), therefore, alternative strategies to feed restriction should be used to reduce the risk of gastrointestinal problems.

6.4 Supply of Kittens and Rabbits

It is recommended that rabbits should have begun socialisation with other rabbits and humans when made available for sale or rehoming (Mullan & Main, 2006).



PART 7: Health



7.1 Ill Health and Injury

Injuries such as puncture wounds, which often appear relatively insignificant, can be worse than they look, and advice should be sought if any doubt exists about their severity.

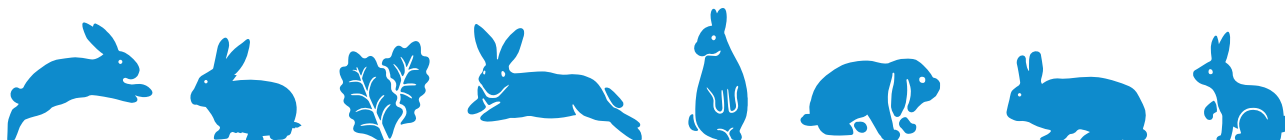
Abscesses

An abscess is a walled-off pocket of infection containing infective bacteria. Abscesses are fairly common in rabbits and may cause considerable distress if not detected and treated promptly. Abscesses are often the result of wounds that become infected (e.g. bites or scratches) or dental disease (Bays, 2020; Campbell-Ward & Meredith, 2010; DeCubellis, 2016), but they can also be caused by the presence of “foreign bodies” such as grass seeds, splinters or lodged food (Varga, 2014c). Abscesses can be very painful and may result in the spread of potentially life-threatening infections through the rabbit’s body, especially when there is a deterioration in the rabbit’s health or nutritional status (Bays, 2020; Campbell-Ward & Meredith, 2021). Jaw abscesses are common in rabbits and can be difficult to notice until the rabbit eats less, becomes withdrawn or an external lump appears (Bays, 2020; Campbell-Ward & Meredith, 2021). Immediate veterinary attention is required in all cases (Bays, 2020). In addition, analgesia should always be given when treating abscesses as rabbits show very subtle signs of pain and discomfort and can often be overlooked (Bays, 2020; Campbell-Ward & Meredith, 2010; DeCubellis, 2016).

Pain

Accurately assessing and treating pain in rabbits is important to prevent negative impacts on their welfare (Hampshire & Robertson, 2015; Keating et al., 2012; Summa & Brandão, 2017). Pain in rabbits can be difficult to assess partly because as a prey animal they will mask pain. Clinical signs of pain include (Bays, 2020; Bradley, 2004):

- Production of fewer, smaller, or no fecal pellets
- Half-closed or dull, unfocused eyes or squinting
- Aggression in normally docile animal
- Pushing abdomen to the floor
- Chewing at the affected site
- Immobility/lethargy
- Isolation from bonded mates or humans
- Over-grooming/lack of grooming
- Vocalization (squeal usually indicates fear in rabbits)
- Stretching with back arched
- Stinting on palpation



- Hunched posture
- Teeth grinding (bruxism)
- Tucked appearance to abdomen
- Strained facial expression with bulging eyes
- Increased frequency and depth of respirations
- Rapid shallow breathing Lameness/ataxia/stiff movements
- Anorexia
- Polyuria/polydipsia (especially w/GI pain)
- Head extended and elevated
- Piloerection Porphyrin secretion (stress)
- Self-mutilation Absence of normal behaviors

The rabbit grimace scale has also been developed to facilitate the assessment of pain (Hampshire & Robertson, 2015; Keating et al., 2012; Summa & Brandão, 2017). The rabbit grimace scale includes an assessment of orbital tightening, cheek flattening, nostril shape, whisker shape and position, and ear shape and position to infer if pain is not present, moderately present, or obviously present. Use of body postures can also improve pain assessment in rabbits (Leach et al., 2011; Summa & Brandão, 2017).

7.2 Disease and Illness Related to Diet

Dental disorders, including disease and abnormalities, are some of the most common health-related problems seen in rabbits (Oneill et al., 2020; Summa & Brandão, 2017). Teeth and gums are also affected by an overconsumption of human food and treats leading to a lack of abrasion on the teeth or an imbalance in nutrition (Bays, 2020; Bradley, 2004; Campbell-Ward & Meredith, 2010; Clauss & Hatt, 2017; DeCubellis, 2016; Sayers, 2010). Veterinarians should routinely examine a rabbit's teeth (Bays, 2020; Bradley, 2004; Campbell-Ward & Meredith, 2021; Sayers, 2010).

Overweight rabbits may not be able to properly clean themselves or reach their caecotrophs from their rear end which puts them at greater risk of skin infections and flystrike (Bays, 2020; Stapleton, 2014), and vitamin deficiency and malnutrition (Stapleton, 2014). The extra weight they carry also puts strain on all their organs, especially the heart and liver, and their joints (Stapleton, 2014).

Changes in faecal consistency in rabbits can be caused by intestinal disturbance, stress or underlying disease, and obesity (Rosell & de la Fuente, 2016; Stapleton, 2014; Varga, 2014c). The presence of soft, uneaten caecotrophs (which may be confused with diarrhoea) can be caused by a sudden disturbance in gut flora usually associated with consuming foods with too much starch or insufficient fibre (Irlbeck, 2001; Varga, 2014b), or failing to introduce new foods gradually. Diarrhoea in young rabbits can occur during weaning due to an imbalance of starch in their diet (Prebble, 2014; Rosell & de la Fuente, 2016; Varga, 2014c), or proliferation of pathogenic bacteria due to too much starch in the diet (Stapleton, 2014), bacterial or viral enteritis or reaction to antibiotics (Campbell-Ward & Meredith, 2021).

Gut stasis/ gastrointestinal hypomotility/impaction/ ileus are common and potentially life-threatening medical conditions of rabbits (Campbell-Ward & Meredith, 2010; DeCubellis, 2016; Sayers, 2010). Gastric dilatation and obstruction are also considered a common pet rabbit health problem and are most likely caused by compressed hair or pellets (DeCubellis, 2016; Schuhmann & Cope, 2014), whole dried pulses, carpet or other small objects (Varga, 2014b); but also linked with cancer, or post-spay adhesions (Harcourt-Brown, 2007).



- Veterinary attention should be sought for any rabbit who shows changes in faecal consistency including soft caecotrophs or diarrhoea (Bays, 2020; Varga, 2014b).
- Veterinary attention should be sought for any rabbit showing extreme or unexpected changes in appetite (Bays, 2020). Both decreased and increased appetite can indicate underlying disease or other health problem (DeCubellis, 2016).
- Rabbit teeth and gums should be checked regularly by their owners and appropriate action taken when tooth and gum health deteriorates (Bays, 2020).

7.3 Prevention of Infectious Disease

Vaccination is an important means of controlling infectious diseases such as rabbit viral haemorrhagic disease (RVHD) (Abrantes et al., 2012; Campbell-Ward & Meredith, 2010; Meredith, 2012a; Read & Kirkland, 2017). Infectious diseases can rapidly spread among unvaccinated rabbits, severely impacting animal welfare (Campbell-Ward & Meredith, 2021).

Maintaining good husbandry for a rabbit's area is critical to preventing many health-related problems (Sayers, 2010; Varga, 2013). Wild rabbits can also transmit parasites to domestic rabbits (Varga, 2013), therefore it is important that wild rabbits are prevented from interacting with domestic rabbits.

7.4 Parasitic Diseases

Rabbits do not require routine worming (Campbell-Ward & Meredith, 2021; Sayers, 2010). If there are indications that a rabbit requires deworming, then a faecal examination and administration of anthelmintic can be performed by a veterinarian (Campbell-Ward & Meredith, 2021; Sayers, 2010).

Many diseases and infections, including those resulting from flystrike, can be related to poor hygiene (Clauss & Hatt, 2017; Sayers, 2010). All rabbits, even those living in clean, hygienic environments, can be susceptible to parasites. In small numbers, these parasites may cause minimal disturbance to the rabbit but an increase in numbers (known as a high parasite load), or if the problem remains chronic, can lead to significant discomfort and compromised welfare.

External parasites that live on the skin of rabbits include fleas, mites, ticks and lice (Bays, 2020; Campbell-Ward & Meredith, 2021; Lennox & Kelleher, 2009; Palmeiro & Roberts, 2013; Sayers, 2010). These can be a significant cause of distress and ill health. Some mites are microscopic and invisible to the naked eye, but can cause dandruff, scabs and loss of fur (Lennox & Kelleher, 2009). Excessive rubbing or scratching can indicate the presence of external parasites. Fleas or flea dirt (black coils that turn red when moistened with water) may also be seen in the coat (White et al., 2003). Long-haired rabbits may have more difficulty with external parasites if their fur becomes knotted through lack of grooming. Matted areas prove a haven for fleas and may cause severe discomfort for the rabbit. Effective treatments and preventive programmes are available (White et al., 2003). Only products specifically recommended for use on rabbits should be used, as some products that are not suitable for rabbits may be toxic and could cause fatal seizures (White et al., 2003).

Internal parasites, such as pinworm, roundworm, and tapeworm, can be ingested by rabbits. Suitable treatment and advice can be obtained from veterinary practices (Bays, 2020; Campbell-Ward & Meredith, 2010; Lennox & Kelleher, 2009; Sayers, 2010). Other animals, such as cats and dogs, who may encounter rabbits should be regularly wormed (Campbell-Ward & Meredith, 2010; Sayers, 2010).



The signs of mange, which is caused by mites, include hair loss, flaky skin, redness, sores and sometimes itchy skin (White et al., 2003). Treatment can be difficult in advanced cases; therefore, it is important to seek veterinary help at an early stage of the disease. Some types of mange also affect humans (Chitty & Hendricks, 2007).

The ears of rabbits should be checked regularly for ear mites. An infestation may cause excessive scratching of the ears and a dark-brown discharge inside the ears (Lennox & Kelleher, 2009).

7.5 Diseases of the Skin

There are many causes of skin disease in rabbits including allergies, parasitic diseases, fungal infections such as ringworm, bacterial infection, nutritional imbalances and hormone disorders (Campbell-Ward & Meredith, 2021; Lennox & Kelleher, 2009; Varga, 2013; White et al., 2003). Few of these conditions are resolved without appropriate treatment (Campbell-Ward & Meredith, 2021; Lennox & Kelleher, 2009; White et al., 2003). Delays in seeking help may lead to further damage to the skin from chewing and scratching and complications such as secondary bacterial infections which may require additional treatment.

7.6 Diseases Transmissible to Humans (Zoonoses)

Some diseases (e.g. cheyletiellosis, dermatophytosis, ectoparasites, pasteurellosis and salmonellosis) can be transmissible between rabbits and other species, including humans (zoonotic diseases) (Chitty & Hendricks, 2007; Varga, 2013; White et al., 2003). Owners and handlers can be a pathway for transmission and unknowingly transfer diseases from rabbit to rabbit.

7.7 Care of Claws and Coat

Neglected coats and claws can cause considerable distress and suffering. Hygiene around the perineum, anus and tail is important in all rabbits to reduce soiling and the risk of flystrike (Cousquer, 2006; Sayers, 2010).

Rabbits moult regularly. Rabbits who are moulting or who have long hair need much more frequent grooming to prevent them from ingesting too much hair (Cousquer, 2006; Varga, 2014d).

Hair mats that harbour external parasites can cause dermatitis in the underlying skin (Cousquer, 2006; Lennox & Kelleher, 2009). Mats can usually be gently brushed out. However, rabbit skin is very delicate and is easily torn or cut, therefore a rabbit will need to see a veterinarian or other experienced person if mats require cutting (Varga, 2014d).

Rabbits should not be bathed unless specifically recommended by a veterinarian. Rabbits tend to panic when in water and can easily fracture their spine or a limb if they thrash around (Fehr & Koestlinger, 2013; Johnston, 2008). It is difficult to dry rabbit hair which clumps together when wet and rabbits who are left damp are prone to respiratory problems and hypothermia (Johnston, 2008). Localised cleaning with a damp, warm cloth on a warm, dry day is best for cleaning a rabbit's rear end if this is necessary. Maintaining short fur around the rear will help keep the area dry and easier to clean.

Rabbits who get little or no exercise on hard surfaces may develop overgrown claws (Oneill et al., 2020). Long claws need careful trimming with sharp clippers taking care not to damage the quick of the nail (the nail bed) which will be painful and result in bleeding and possible infection (Varga, 2014d).



Flystrike

Flystrike occurs when flies lay their eggs on an animal, and the eggs hatch out into maggots. The maggots from flies are very dangerous as they can eat into an animal's flesh within 24 hours, causing death (Cousquer, 2006; Sayers, 2010).

Flies will lay eggs anywhere they smell blood or dirt, so wounds are a target, but dirty or wet bottoms are the most common cause of this problem (Sayers, 2010). Rabbits who are unclean or overweight, or have a poor diet or mobility problems are at the greatest risk of flystrike (Campbell-Ward & Meredith, 2010; Sayers, 2010; White et al., 2003). Faecal matter and moist bedding should be regularly removed from a rabbit's environment (Sayers, 2010).

Rabbits with flystrike may appear lethargic/depressed or anorexic or have a soiled perineum and tail fold, diarrhoea, dehydration, hair loss, skin erosion or necrosis, weight loss, presence of eggs and larvae, and a fetid smell (Cousquer, 2006). Immediate veterinary treatment must be sought for rabbits found to have symptoms of flystrike (Campbell-Ward & Meredith, 2021; Cousquer, 2006; Sayers, 2010).

7.8 Harmful Substances

Rabbits are susceptible to accidental poisoning by many substances including poisonous plants, household cleaners and contaminated water (Johnston, 2008). Some medicines for humans or other animals may be poisonous to rabbits, so it is essential never to treat or medicate rabbits unless recommended or prescribed by a veterinarian.

Rabbits can be poisoned by substances (e.g. poisonous indoor or outdoor plants), chemicals (e.g. rodent poison) and lead (e.g. chewing or licking lead-containing substances, such as painted surfaces or metallic objects) (Johnston, 2008). Rabbits can also have adverse reactions to many common topical products or medicines that are safe for use in other mammals, such as shampoos, sprays or antibiotics (Campbell-Ward & Meredith, 2021; Fehr & Koestlinger, 2013; Johnston, 2008).

It is important to know if pesticides have been used near your rabbit. Rabbits are susceptible to 1080 poison and many other pesticides such as anticoagulants, and vitamin D (Johnston, 2008). Rabbits can be poisoned by drinking water polluted with toxins such as sheep dip, horticultural sprays, antifreeze etc, and care should be taken to cover polluted water or prevent access to it.

Unlike many other mammals, rabbits are unable to vomit (Campbell-Ward & Meredith, 2021; Johnston, 2008). Ingesting compounds that would normally induce vomiting in other animals may go unnoticed. Rabbits can also ingest toxic substances from their environment or from grooming their coats (Johnston, 2008). A toxic compound can also be reingested when a rabbit who has eaten a toxic substance proceeds to eat their toxic caecotrophs.

7.9 Care of Older Rabbits

Rabbits can be considered geriatric at five years of age (Reavill & Imai, 2020). Some rabbits may show signs of aging sooner than others, therefore the changing needs of ageing rabbits should be assessed and considered on an individual basis.

As rabbits age, their need for warmth, free access to water, and nutritious and easily digested food increases (Bays, 2020). Commercial pellet foods for older rabbits are available, however, limiting the amount of pellets is recommended for older rabbits (Bays, 2020). Senior rabbits should receive a balanced diet with plenty of fresh hay and greens to meet their nutritional requirements (Bays, 2020).



Obesity, dental disease, reproductive cancers, inflammation of sebaceous glands, spondylosis and arthritis are common age-related diseases in rabbits (Bays, 2020; Reavill & Imai, 2020). Older rabbits that are obese and have decreased mobility may be at more risk of pododermatitis (Bays, 2020; Reavill & Imai, 2020). Senior rabbits are likely to become less mobile and may require their claws to be clipped more frequently, as they will not be naturally wearing them down (Bays, 2020). For comfort, older rabbits should be provided with soft floor covering, extra litter boxes, more ground floor space (rather than multiple levels and ramps), better traction and soft bedding to improve their quality of life (Bays, 2020). Their anal regions may require regular cleaning with a damp, warm cloth if there is faecal or urinal accumulation (Bays, 2020).

7.10 Surgical Procedures

Rabbits should never be fasted (have their food withheld) before surgery (Campbell-Ward & Meredith, 2021). Rabbits should continue to be fed and given water as normal. Rabbits are unable to vomit so their gut motility should be maintained right up to, during and after surgery (Campbell-Ward & Meredith, 2021; Johnston, 2008).

Surgical procedures need to be conducted in a manner that manages the likely pain and distress. The Act places restrictions on the performance of surgical procedures; all surgical procedures carried out on rabbits must be conducted in accordance with the Act (MPI, 2019). If in doubt about a surgical procedure, veterinary advice should be sought.

PART 8: Behaviour and Training

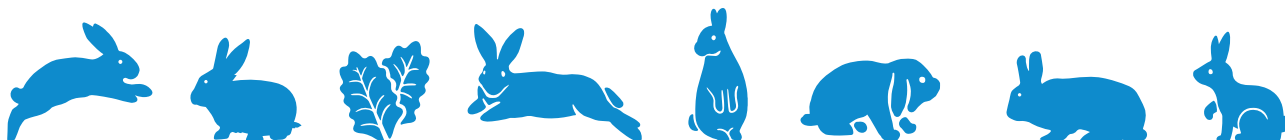


8.1 Behaviour

Providing a suitable desexed companion or altering or enriching the environment can help reduce inappropriate behaviour. Desexing at an earlier age will reduce the likelihood of some rabbit behaviours that are undesirable to humans (such as spraying and aggression) (Richardson & Flecknell, 2006).

Rabbits should not be housed alone – they are a social species that need to be housed with at least one other rabbit (Bays, 2020; Clauss & Hatt, 2017; Varga, 2014c; Verga et al., 2007). Keeping a rabbit by themselves can lead to a greater likelihood of displaying unwanted behavioural problems in response to unmet social needs (Mugnai et al., 2009; Schepers et al., 2009). Rabbits that are not socialised are also deprived of social interaction and opportunities to play (Crowell-Davis, 2021; Crowell-Davis, 2007). Rabbits should live with compatible rabbits, with recommendations for desexed male/female pairs (Magnus, 2005; Varga, 2014c). Introductions between rabbits that are unfamiliar to each other or regrouping of known rabbits should be done carefully to minimise stress and reduce the chance of injury (Andrist et al., 2013; Braconnier et al., 2020; Rommers et al., 2014; Szendro et al., 2016; Thurston et al., 2018; Varga, 2014c). It is also important to avoid social stress associated with overcrowding rabbits (Verga et al., 2007).

Rabbits are territorial. It is important to gradually introduce unfamiliar rabbits (Crowell-Davis, 2021; Crowell-Davis, 2007; Saunders, 2014; Thurston et al., 2018). Gradual introductions may take several days; so, patience is required to ensure rabbit safety. Where introductions are not properly carried out, fighting



can result, with juveniles and senior rabbits at particular risk of sustaining injury or death. If early problems of confrontation occur, it is important to keep the rabbits separated with a more gradual introduction while keeping the animals within sight and scent of each other (Saunders, 2014; Thurston et al., 2018). Rabbits that show affiliative behaviours can be introduced more quickly, whereas rabbits showing neutral or aggressive behaviours will need more time before they are allowed together (Saunders, 2014; Thurston et al., 2018).

Desexing provides both health and behavioural benefits and prevents unwanted births (Varga, 2014c). Even same-sex pairs should be desexed to prevent potential behavioural problems (Campbell-Ward & Meredith, 2021; Varga, 2014c). Male rabbits can remain fertile from 4-6 weeks post-castration, which should be considered before introductions to undesexed female rabbits (Campbell-Ward & Meredith, 2021; Varga, 2014c)

Rabbits may display behaviours that are natural for them, but undesirable for humans, such as the desire to escape (e.g. escaping potential harm), digging, chewing, burrowing, and hiding (Campbell-Ward & Meredith, 2010; Crowell-Davis, 2007; Crowell-Davis, 2021). These normal behaviours can be managed with the provision of appropriate environmental enrichment, such as a suitable area for digging, places to burrow or hide, and enrichment for distraction and mental stimulation (Clauss & Hatt, 2017; Crowell-Davis, 2021). Similarly, with chewing, rabbits need to have the opportunity to wear down their teeth to prevent them from becoming overgrown as their teeth grow continuously (Clauss & Hatt, 2017; Crowell-Davis, 2021). Therefore, rabbits should be provided with items that are safe and suitable for chewing, including hay (Clauss & Hatt, 2017).

Aggressive or irritable behaviour may also be due to an underlying medical issue, be age-related or be due to inappropriate handling (Bays, 2020; Crowell-Davis, 2007). Physical punishment of rabbits may result in the development of either excessive timidity or aggression in the animals (Campbell-Ward & Meredith, 2021).

Fireworks

Rabbits are a prey species and are naturally fearful of sudden, loud noises (Marai & Rashwan, 2004; McBride, 2018). Loud noises from fireworks, lightning, thunder, and gunshots may induce a fear response in rabbits. Rabbits need to have somewhere to hide and should be given enrichment and forage to distract them (McBride, 2018). If possible, outdoor enclosures should be covered or rabbits should be temporarily kept in an area with the least possible exposure to the sight and sound of fireworks.

Rabbits and guinea pigs should not be housed together (Campbell-Ward & Meredith, 2010; Saunders, 2014; Sayers, 2010; Varga, 2014a)

8.2 Training

Humane methods and equipment that apply reward-based learning effectively accomplish the training objective without causing distress or pain to the animal. Rabbits can be trained using positive reinforcement (Clauss & Hatt, 2017; Crowell-Davis, 2007). Aversive training techniques or equipment should be avoided (Magnus, 2005). These include methods based on the principle of directly and deliberately applying an unpleasant stimulus to the rabbit to stop or prevent unwanted behaviour. These include citronella spray, electronic, and ultrasonic training aids.



PART 9: Handling



Rabbits are naturally fearful of a sudden approach, especially from above (Bradbury & Dickens, 2016; Malley, 2007; Richardson & Keeble, 2018; Schepers et al., 2009). Lifting rabbits is stressful for the rabbit (Bradbury & Dickens, 2016). The use of non-slip surfaces to handle rabbits can reduce the stress of handling (Bradbury & Dickens, 2016; Malley, 2007; Varga, 2014d). Efforts should be made to reduce the need to lift rabbits by use of boxes, baskets, or crates, including conducting veterinary assessments on the floor (Bradbury & Dickens, 2016).

A rabbit has fine bones and a fragile spine which can easily fracture or break. When being carried, their hind legs need to be held securely so that they cannot kick out and damage their spine (Bradbury & Dickens, 2016). In addition, their internal organs can be easily damaged (Bradbury & Dickens, 2016; Malley, 2007). Rabbits must never be squeezed. The use of a towel is recommended for supporting the back limbs (Bradbury & Dickens, 2016; Varga, 2014d).

A fear response is a common behavioural problem when rabbits are inappropriately handled or are not used to being handled (Crowell-Davis, 2007; Magnus, 2005). Rabbits who are handled gently from a young age are usually more confident to be held without struggling or panicking (Elliott & Lord, 2014; Verga et al., 2009; Zueca et al., 2012).

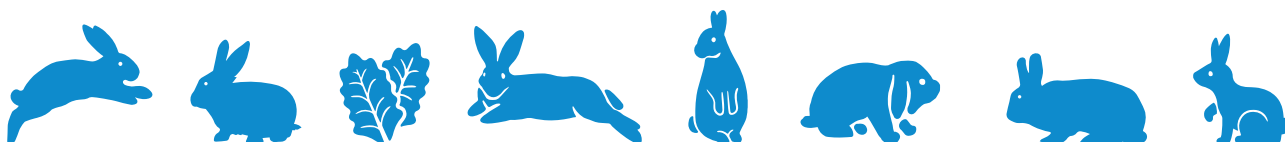
Scruffing rabbits is not recommended and should be avoided (Bradbury & Dickens, 2016; Varga, 2014d). In an emergency, or when the rabbit is so nervous that scruffing is absolutely necessary in the circumstances, then their full weight should be supported by placing a hand underneath the rabbit (Malley, 2007). It is never necessary to lift a rabbit by the ears and this must never be undertaken.

Tonic immobility or “playing dead” in rabbits is an automatic behavioural response to fear. Researchers have shown, through monitoring behavioural and physiological responses to “trancing”, that rabbits are aware of what is happening to their body and their surroundings during the “trance” and have increased heart rate and stress hormones (Bradbury & Dickens, 2016; McBride et al., 2006). This action should never be deliberately used on rabbits as it is known to elicit a fear response. The only occasions when it is acceptable to use this stress response in rabbits is when it is carried out by a veterinary surgeon in extreme circumstances to carry out lifesaving observations or to assist with lifesaving procedures (Varga, 2014d). Rabbits who have frequently been placed in a tonic immobility position learn to anticipate when it is going to happen and become stressed more rapidly, thereby entering an immobile state more quickly (Varga, 2014c).

PART 10: Transportation



Transportation can be a stressful time for rabbits (Saunders, 2014; Varga, 2014d; Voslarova et al., 2018). It is therefore important to ensure that the rabbits are transported in a manner that minimises distress and physical discomfort.



For the safety of rabbits and people within a vehicle, rabbits should be transported within a suitable carry container that keeps them confined but comfortable (Saunders, 2014; Varga, 2014d). These containers are most suitably constructed from fibreglass, metal, rigid plastic, or welded metal mesh (although the welded metal mesh should not be at the bottom of the container to protect the rabbits' feet). Cardboard carry boxes have a limited lifespan for rabbits who can chew through them and should only be used in an emergency for a short period. Placing a thin cotton cloth over visually exposed containers can help to minimise the stress experienced by rabbits (Varga, 2014d).

Care needs to be taken when transporting rabbits, especially in warmer weather (Varga, 2014d). The temperature in a closed vehicle in full sun can reach 50 degrees Centigrade in less than 15 minutes. This will cause an enclosed rabbit's temperature to rise rapidly, followed by extreme distress and rapid death. Rabbits are particularly susceptible to heat stroke because they have limited ways of getting rid of excess heat and cannot pant to cool off like some animals do (Varga, 2014c). In addition, because rabbits are a prey species, they will not often show their distress in order not to appear vulnerable (Varga, 2014c). Rabbits who have been heat-stressed should be cooled by being wrapped in a damp (but not wet) towel, should be offered water to drink, and veterinary treatment should be sought immediately.

Rabbits transported over long distances, either by road or by air, have additional requirements such as appropriate ventilation, and provision of water and food (Saunders, 2014; Varga, 2014d). Advice should be sought from a veterinarian before transporting rabbits over long distances.

PART 12: Euthanasia*



The preferred method of euthanasia for rabbits is by a veterinarian using an intravenous injection of a drug registered for this purpose following the American Veterinary Medical Association Guidelines for Euthanasia (2020).

The Act provides for the euthanasia of a severely injured or sick rabbit by a veterinarian where in their opinion, the animal should be destroyed because reasonable treatment will not be sufficient to make the animal respond, and the animal will suffer unreasonable or unnecessary pain or distress if it continues to live. A veterinarian may euthanise the rabbit without the owner's permission, where the owner cannot be found within a reasonable time or where the owner does not agree to the euthanasia but does not obtain a secondary opinion from a veterinarian within a reasonable time. A warranted inspector or auxiliary officer under the Act (e.g., an SPCA inspector or auxiliary officer) may also perform this task; however, a veterinarian should perform the euthanasia if immediately available (Animal Welfare Act, 1999).

It is an offence to kill a rabbit of any age by drowning. Drowning is not a humane death (AVMA, 2020; Beausoleil & Mellor, 2015). Drowning causes a series of physiological and chemical responses in the body resulting in a fast and lasting decrease of oxygen in the blood, ingestion of liquid in the airways, acidosis, and high levels of carbon dioxide in the blood; all of these symptoms an animal experiences while conscious (Beausoleil & Mellor, 2015; McEwen & Gerdin, 2016). Drowning leads to severe 'air hunger', which is considered the most unpleasant affective state associated with breathlessness (Beausoleil & Mellor, 2015).

**Please note: Section titles are set by NAWAC. SPCA prefers the term 'End of Life'.*



According to the American Veterinary Medical Association Humane Slaughter Guidelines (2016), farmed rabbits should be stunned before killing. Rabbits may be stunned using any of the following methods:

- Wall-mounted head-only electrodes, where the rabbit is held upside down with one hand spanning the loin and its head is inserted by hand between the two electrodes and held in position while the current is flowing. This electrical stunning system should only be used with isolated electrical circuits, otherwise, there is a risk of current passing through the operator to the earth.
- Cartridge or spring-fired captive bolt firearms, which are effective when operated correctly. However, care needs to be taken when placing the gun against the rabbit's head, as the skin over the head is loose and skin slip can spoil the aim.
- Manual concussion where the rabbit is held in one hand by the hind legs and struck on the back of the head with a heavy object held in the other hand.

For farmed rabbits, severance of major arteries supplying the brain and heart is an acceptable method of slaughter, provided that the rabbit has been first rendered insensible to pain by stunning.

Rabbits should be immediately shackled and bled out after they are successfully stunned. Neck dislocation may be used for small rabbits, but only after they have been stunned using one of the above methods.

7. How will the code change existing arrangements for the management of the species or activity in question?

The Code of Welfare for Rabbits will improve the existing arrangements for rabbits so that their physical, health, and behavioural needs are better met to help ensure good welfare.

8. What impacts will the code have on those people affected by it (for example, benefits, compliance costs, risks)? Which sectors/groups of people will be impacted the most, and how?

The Code of Welfare for Rabbits will have the biggest impact on companion rabbit breeders and owners. There currently are no commercial breeders for farmed rabbits.

9. Who have you consulted?

The draft Code was sent out to 39 organisations and individuals representing people likely to be impacted by the Code. We have consulted a range of stakeholders representing rabbit owners, veterinarians, rescue organisations, breeders, rabbit behaviour experts, and the legal profession.

All feedback received through targeted consultation was provided to NAWAC verbatim.

10. What feedback did you receive during consultation? Were any significant issues raised about your draft code? How were these issues addressed and if they did not alter your draft code, why not?

All feedback received through targeted consultation was reviewed and responded to. The draft code submitted to NAWAC was revised accordingly.

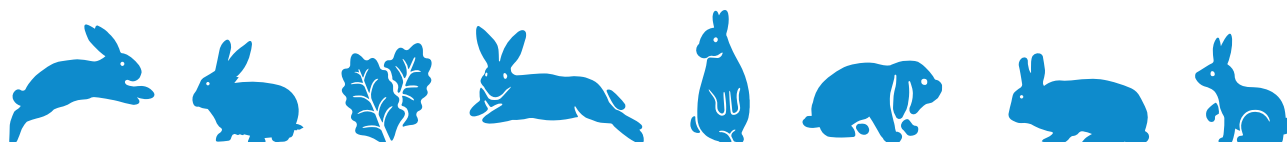


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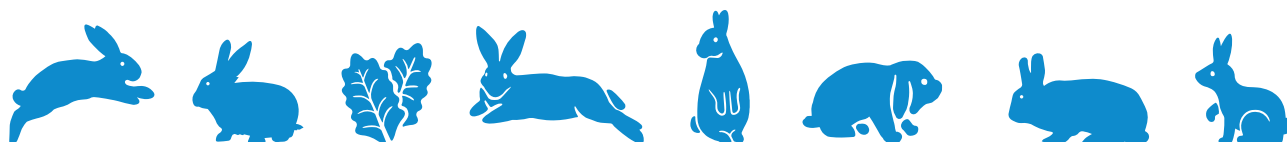
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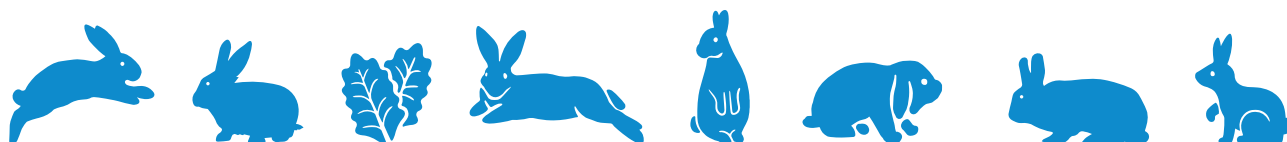
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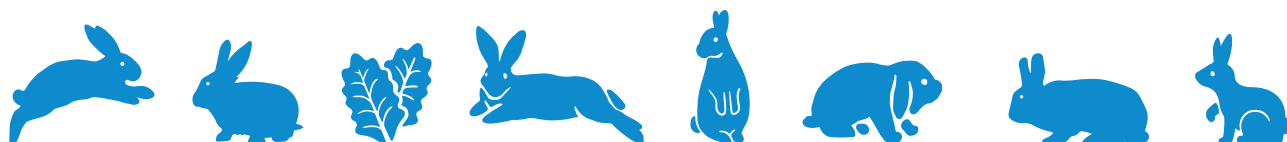
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