

COMMERCE AND EMPLOYMENT DEPARTMENT

GUIDANCE FOR THE WELFARE OF PET MICE

MADE UNDER SECTION 13(6) OF THE ANIMAL WELFARE (GUERNSEY) ORDINANCE, 2012

GUIDANCE – FOOD AND WATER

Food

Mice are opportunistic omnivores and eat both plant and animal based food. In the wild they will eat a wide variety of seeds, grains, and other plant material as well as invertebrates, small vertebrates and carrion. Foraging is very important for wild mice, who may visit 20 to 30 feeding sites and eat 200 small meals every night. Scattering part of the food ration or additional treats in the bedding litter will encourage this behaviour, keep the mice occupied and help to prevent obesity.

Mice must be provided with Magnesium, Vitamin A, and Choline in their diet and folic acid is essential in the diet of growing and reproducing mice.

Mice must be provided with a balanced diet that contains all the nutrients and minerals that they need. This can be achieved by providing a commercial compound that has been formulated for rodents.

For variety, small quantities of foods such as green vegetables, carrot, apple, celery, peas, cereal, dry bread, cooked pasta and mealworms can be provided. This should be part of the diet, not additional to it. Grapes, raisins, rhubarb and walnuts are poisonous to mice and lettuce can cause them to have diarrhoea.

Wild mice find food by foraging and so a portion of daily food that is provided for pet mice should be scattered in a cage to encourage this foraging behaviour.

Mice are coprophagic rodents, this means that they eat their faeces to enable them to absorb essential nutrients such as vitamin B12 and folic acid. They eat cecal faeces from the floor of their cage.

Water

Mice must always have access to fresh, clean drinking water and water containers should be refilled daily. Mice can die if they are deprived of water for even short periods of time.

Water should preferably be provided from a bottle with a valveless sipper tube as mice may have difficulties overcoming the resistance in a traditional 'ball-valve' sipper tube.

GUIDANCE – ENVIRONMENT

Housing

Accommodation must:

- a) provide a space for mice to hide and build a nest and a separate space for them to exercise,
- b) be predator proof,
- c) be free from hazards such as sharp objects or wood treated with chemicals which are hazardous to mice health,
- d) have a solid floor to contain bedding material,
- e) be provided with bedding material that covers the floor as well as quantity of soft nesting material,
- f) be ventilated, but protected from draughts,
- g) provide daylight or light equivalent to daylight during normal daylight hours, and
- h) allow continuous access to food and water.

A cage with bars is preferable and the bars should be of stainless steel and sufficiently close to prevent escape. Small mice are able to squeeze through very small spaces and can easily escape through a space which would accommodate a pencil, 6mm or more. Some of the large breeds of show and fancy mice cannot escape through such small spaces.

A cage must not be made of wood as this material is not easy to clean and a mouse can gnaw through wood. Aquariums are not suitable cages for mice. Cages should be large enough to enable enrichment to be provided which permits a range of behaviours including exercise, foraging, social behaviour and play. These behaviours are not possible in many of the very small cages that are commercially available, so use the largest cages available and do not populate it with too many individuals so that it allows animals plenty of space.

Shelters

Mice are a prey species and are highly motivated to stay close to safe cover from solid objects and refuges. They must be provided with a place to hide because it makes them feel secure and this is particularly important for females with litters. Suitable refuges include large cardboard tubes, empty water bottles, commercially available mouse houses made from cardboard or tinted plastic, or empty cardboard packaging. Cardboard tubes are particularly good as they allow the mice to climb, chew and manipulate them.

Nest boxes and shelters, with multiple exits, should be provided so a mouse can hide and avoid any confrontation with other cage mates (if housed with other mice). Male groups

cannot have nest boxes due to aggression but should be provided with plenty of nesting material so that they can still feel secure.

Shelters must be large enough so that a mouse (or mice) can turn around easily and not become stuck.

Exercise and Enrichment of the Environment

A mouse must be provided with space to exercise (ideally a minimum of 450cm² (21cm x 21cm), larger breeds of show and fancy mice will require additional floor area.) of floor space per common adult mouse.

The space should include enrichment to encourage exercise, such as cardboard tubes, tunnels, gnawing blocks and raised platforms while still allowing generous space for the mice. Mice like to stay in physical contact with upright surfaces and can find barren open spaces stressful.

Mice housed together should be monitored to check that the provision of new objects does not upset the social balance of a group.

Mice should ideally have access to the inside of the cage roof so that they can climb from the bars (though they should not be able to fall from a height). Therefore solid lids are not recommended for mice.

An exercise wheel can be provided, but should not be the only means by which a mouse can exercise. A wheel should be of a large diameter (such as one intended for a rat), ideally axle free and have a non-slip running surface (but not wire rungs).

Bedding and Nesting Materials

Bedding material is used to describe the material or substrate that is used to cover the bottom of the cage. *Nesting material* is used to describe the material provided in addition to bedding material, which is given to mice for nest building and nesting behaviour.

Bedding material must be provided. Suitable bedding materials are wood chips, cellulose based chips or shredded filter paper. Bedding material should be at least 2cm deep to allow mice to dig, forage and burrow. Fine saw dust, wood shavings and aspen or coniferous bedding must not be used as they can cause health problems. Fragrant and coloured bedding material should be avoided.

If possible bedding material should be deep enough to allow them to burrow and seek a darker environment.

Mice are highly motivated to build nests, and must be provided with nesting material to help regulate their body temperature. Mice are most comfortable between 26 and 34°C, which is higher temperature than for many other pet mammals so it is especially important to provide sufficient nesting material for the animals to keep themselves warm. Suitable materials are hay, shredded paper, paper strips and paper tissues. Nesting materials that separate into thin strands such as cotton wool or similar 'fluffy' bedding products must not be provided as they pose a serious risk to the health of mice if ingested and they can become wrapped around the

body or limbs of a mouse. Nesting material also helps mice to occupy their time, especially if it is provided in a form that they have to manipulate (for example, by placing it on the cage top so that the mice have to pull it through the bars) or shred.

Noise

Mice have acute hearing and can also hear ultrasound. There are many sources of ultrasound in the home, such as running water and electronic equipment including computer screens. Excessive levels of ultrasound will cause mice distress so their cage should be placed away from items such as television sets, computer screens, vacuum cleaners or sources of running water.

Light

Mice are nocturnal and are adapted to work in very low light levels between 1 and 40 lux (40 lux is about the same as the light from sunset/sunrise on a fully overcast day) and they can see ultraviolet light. For this reason mice should be kept out of bright light and direct sunlight and lighting should be below 60 lux for pigmented mice and 25 lux for albino mice. Reducing light levels is extremely important for good mouse welfare, especially for albinos, and can be achieved in a number of ways including selecting appropriate lighting systems (with a UV component where possible) and/or fitting shading above cages. Wherever possible, lighting regimes should be set so that the active period of mice is during the time of day that the owner is at home, this makes it easier for owners to monitor the wellbeing of mice.

Heat and Humidity

Mice should be kept away from extremes of humidity such as bathrooms or in air conditioned rooms.

GUIDANCE - HEALTH

Monitoring Health

Mice have a high metabolic rate and can loose condition very quickly, however, they may often only show subtle signs of pain, distress or suffering. Mice can die if they lose 20 per cent or more of their body weight, in a 30g mouse that would be only 6g.

Mice should be visually inspected daily for signs of illness and injury and physically examined once a week. Mice should be weighed regularly to check for rapid gain or loss of weight.

Injuries

Mice can injure themselves and break limbs if they fall or are dropped from a height. Veterinary advice should be sought if any injury is severe.

Illness

Sign of illness in a mouse include:

- a) not eating or drinking,
- b) hiding away from the other mice, more than usual,
- c) sitting in a hunched-up position,
- d) ruffled or spikey fur and/or a dirty, stained or dull coat,
- e) reddened or sore looking skin,
- f) sunken, dry or dull looking eyes,
- g) discharges from their eyes or nose,
- h) losing weight, or quickly putting weight on,
- i) drinking a lot,
- j) diarrhoea,
- k) urinating a lot or not at all,
- l) chattering a clicking sound when breathing or slow, irregular or fast breathing,
- m) very dark red or pale limbs, ears, or nose,
- n) very hot, or very cold limbs,
- o) head tilted,
- p) fitting, twitching, tremors or shivering,
- q) grating their teeth,
- r) difficulty walking, or unsteady balance, or not using a limb,
- s) mutilation, or gnawing at themselves,
- t) swollen stomach,
- u) injuries or abnormal lumps or bumps, and
- v) fur loss.

This list is not exhaustive.

A mouse must only be treated with medicines that have been recommended by a veterinary surgeon. Human and other animal medicines can be very dangerous to mice.

Care of Teeth

Mice have specialised teeth for gnawing and their incisors grow continuously.

A mouse must be provided with a suitable gnawing material hard wood gnaw blocks or twigs and branches from fruit trees which have not been treated with chemicals which are hazardous to the health of mice.

The front teeth of mice must be checked regularly. Dental problems are not uncommon and if one incisor tooth becomes damaged, the other tooth can keep growing and may eventually prevent feeding. If this occurs or if teeth become overgrown, veterinary advice must be sought.

Care of Coat

Mice have a strong motivation to groom and spend a large proportion of their waking time grooming. They must be able to express this behavior.

Mice often pluck fur or whiskers from cage mates or themselves. This is known as barbering and is normal behavior, however, mice should be regularly checked for fur loss and if this becomes excessive, veterinary advice must be sought.

Whiskers

Whiskers must never be trimmed.

Frustration and Stress

Mice are naturally timid and loud and threatening noises will startle and frighten them and cause them distress. They like to stay in physical contact with upright surfaces and can find barren open spaces stressful.

As mice are a prey species, if they are not properly habituated to human interaction they can find this very stressful. They can also find the presence and scent of other animals stressful.

Mice find social isolation and/or individual housing incredibly stressful.

If a mouse has a barren environment, stress, frustration and/or a lack of mental stimulation can lead to it developing repetitive behaviour (such as gnawing the bars of their cage for long periods of time). If this occurs, environmental enrichment must be provided or veterinary advice sought.

Hygiene

Accommodation should be thoroughly cleaned at least once a week but careful husbandry is required to minimise the risk of aggression.

Wet, damp or smelly bedding material and objects soiled with faeces must be replaced and nesting material must be kept clean and dry. However, clean, dry, unsoiled nesting material

can be re-used, but fresh nesting material must be added as necessary. It is important to retain some old nesting material which is not contaminated because mice communicate with odours and this can reduce the risk of fighting when the mice are reintroduced. This is because nesting material contains odours from the foot glands that reduce aggression. However, bedding (such as wood chips) should not be transferred, since this contains odours from urine and faeces that increase aggression.

If aggression levels are high within a group of mice then remove all bedding and nesting materials, thoroughly clean the cage, shelter and any environmental enrichment objects and effectively start with a fresh environment.

Fresh food and water should be provided daily and water bottles cleaned once a week.

Handling

Regular interaction (on a daily basis) will enable a mouse to become accustomed to people and to being handled. A mouse should be:

- a) allowed to investigate hands in its own time,
- b) picked up in a confident but gentle manner in two cupped hands and the hands gently opened so that it can sit on joined palms, or form a tunnel/cave with the hands for the mouse to enter or use a 'handling tunnel' that is placed in a cage for a mouse to enter which is then picked up once the mouse is inside; and
- c) handled near to a surface to reduce the distance of any fall (mice have a very delicate skeleton).

Picking a mouse up by the tail is unacceptable because it causes stress and anxiety and risks injury to the tail.

GUIDANCE BEHAVIOUR

Mice are gregarious, social animals that form complex social groups. They are extremely active animals (mainly at dusk and dawn and throughout the night) and they burrow and build complex tunnel systems.

Mice scent-mark their environment with odour patterns to identify their territory and communicate with other mice. Patterns of urine and secretions from other glands on the body are used to identify individuals, groups and social status.

Companionship

Mice find social isolation and/or individual housing incredibly stressful. A mouse must not be housed on its own unless it is under the specific recommendation of a veterinary surgeon. If isolation is required, a mouse must be housed where it can see, hear and smell other mice of its own gender.

Male mice can be aggressive and care must be taken when keeping male single-sex groups. Male groups of three animals are most likely to be successful and disturbance must be kept to

a minimum. Groups of males should be formed before weaning, and should remain as a stable group with no additions at a later date because this risks upsetting the complex organisation of the original group and may lead to stress and conflict.

Transferring nesting material during cage cleaning can help to reduce aggression. Care should be taken to avoid contaminating cages with scents from different groups, and males should not be placed so that they are able to smell females. Male mice may also become aggressive over enrichment objects, but this can be minimised by providing just nesting material without a refuge and plenty of space.

Mice should be provided with objects that can be used as toilet areas or easily scent marked. This will allow them to communicate by using their odours. These objects should be easily cleaned, and should be cleaned as part of the regular cage cleaning routine. Any changes to the husbandry routine should be combined with close monitoring of the mice to check for any associated aggression.

Other rodent species are not suitable companions for mice.

GUIDANCE - BREEDING

Breeding mice must be planned and owners should inform themselves of what is required and ensure that there is a home or a market for the offspring.

Selection of Breeding Stock

Both sexes can breed at 6 weeks of age and can continue to breed until 12 months old. A female can produce young every 18 to 28 days.

When breeding there must only be one male to a cage, although there can be more than one female. If more than one male is present, they will fight and may injure females and young.

A female should be placed in the cage of a male or the female will fight to protect her territory from the 'invading' male. The mice should be separated after a maximum of 10 days.

Care of Pregnant Females

The average gestation period is 21 days.

Pregnant mice should be fed a fattier mix of foods than normal (such as scrambled egg, eggflake, sunflower seeds, millet or nuts). This should continue until after the babies are weaned.

Other female mice that are the normal companions of a pregnant mouse can be kept in the same cage.

There must be enough nesting material to allow a pregnant female to construct a nest.

Care of Young

The female and her litter should not be disturbed for the first few days after birth.

The young are usually weaned by 21 days and should split from the mother by 28 days and by then the sexes should be separated.

GUIDANCE - TRANSPORTING MICE

Mice should be transported in a secure pet carrier (one that they cannot gnaw at and escape).

A pet carrier must be provided with nesting material for comfort and should be covered to keep it dark (the cover should not impede ventilation).

On longer journeys, food (such as pellets) and water (by means of such things as a piece of fruit or a vegetable) should be provided.

Mice should be transported in conditions that maintain a temperature of between 26°C and 34°C. It is especially important to provide sufficient nesting material for the animals to keep themselves warm during transport.

This guidance is given by the Department with a view to securing the welfare of pet guinea pigs. It is additional to the Welfare Recommendations set out in the **Code of Recommendations for the Welfare of Pet Mice** made by the Department and available at [insert link etc.]. A breach of the Code may be relied upon in Court proceedings.