Feeding rats and mice

Rats and mice are omnivores, meaning they eat both meat and vegetable matter. They have a simple monogastric digestive system. By this we mean that they have a simple stomach and a relatively short large intestines. They obtain their nutrients from eating meat and/or invertebrates, which are relatively easy to digest.

Essential nutrients

Rats and mice need six basic nutrients to meet their metabolic requirements:

- carbohydrates
- protein
- fats
- minerals
- vitamins
- water.

Carbohydrates

These are necessary as a source of energy. If not enough carbohydrates are available, rats and mice may suffer from cold and heat as they won't be able to cope with temperature extremes. Sources of carbohydrates include:

- oats
- corn
- wheat
- barley.

Parrot mix contains a good balance of grains to feed rats and mice. It provides carbohydrates, protein and roughage.
Protein

Protein is essential for building muscle, growth and repair. Deficiency of this nutrient will result in poor growth potential, lethargy and anorexia. Sources of protein include:

- soybean
- milk powder
- sunflower seed
- meat-based dog biscuits.

Feeding a good quality meat-based brand of dog biscuit will supply rodents with sufficient protein to meet their needs.

Fats

Fats are a source of energy, as well as assisting in transporting vitamins, giving a shiny coat and lubricating the digestive system. Too much fat will cause obesity. Sources of fat include:

- vegetable oil
- sunflower seed
- corn.

Vitamins and minerals

These are essential to the functioning of vital organs, homeostasis and growth. Deficiencies will create disease and deformity. Sources include:

- grains
- roughage
- grasses
- fresh fruit and vegetables.

Good quality pellets or blocks of feed are available through feed stores. Care must be taken to read the label to ascertain the contents of the feed are adequate to meet the daily nutritional requirements of the animals in your care.

Water

This is essential for sustaining life. Good quality water, moderate temperatures and accessibility are all important considerations. Several feeds are high in water and can decrease the quantity of extra water that is
needed. Weather and lactation can also dictate the volume of water needed per individual.

Access to a constant supply of good quality water is vital to the wellbeing of rats and mice. The warmer the temperature, the more frequently the water should be changed.

Rats and mice can drink from a water drip bottle.

Feeding regimens

An adult rat will normally weigh around 300g and will consume approximately 5g feed and 10ml water per 100g body weight per day. Consumption varies with the ambient temperature, humidity, health status, breeding stage, diet itself and the time of day. Rats are nocturnal and feed primarily at night.

Appropriate feeding rats and mice can take several forms depending on the class of stock.

Baby rats and mice

- These should not be weaned until they are four or five weeks old.
- From the time they open their eyes, place small quantities of puppy kibble, whole wheat bread and soft fruits close to the nest.
- As the babies mature, introduce a greater range of foods a little at a time.
- Feed puppy kibble until they are three months old. Grain mix should be introduced as well.
- Newborn rats and mice are hairless. At this stage they do not need feeding as they are suckling from their mothers. From approximately three weeks of age, small amounts of plain foods can be introduced to the diet.
Adult female rats and mice

- 70-75% mixed grain/kibble
- 15% fruit and vegetables
- 5-10% added protein (puppy kibble)
- 5% treats.

Lactating females

- Extra protein and fat should be included in the diet for lactating females. Substitute the adult dog kibble for puppy kibble or working dog mix.
- Whole goat's milk can be added to help boost calcium, fat and protein.
- Pregnant and lactating females will require a diet higher in protein and fat. Access to ample, clean, fresh water is also essential.

Adult males

- Adults require less protein in their diet so they can be fed adult dog kibble. Ensure that you purchase a good quality, meat-based brand.
- 75-80% of food intake should be grain mix and kibble.
- 15-20% should be fresh fruit and vegetables.
- 5% treats, eg nuts or yoghurt, but abstain if they are overweight.

Elderly rats and mice

- Reduce the protein and fat content as they have more difficulty digesting these nutrients increase carbohydrates instead.
- Soak or feed soft food such as rolled oats, bread or crumbled dog kibble.

Research

- In research establishments the animals are usually fed on a pelleted diet that can be sterilised as necessary.
- A variety of seeds, fresh fruits and vegetables can also be provided, if they are sterilised.
- To help prevent the continuously growing teeth from overgrowing, dog biscuits or hard bones can be provided for the animals.
Treats for rodents

- sunflower seeds
- dried bread
- pumpkin seeds
- cereals, such as Weetbix, Just Right or maybe some Muesli
- yoghurt
- bananas
- avocado without the skin
- melons.

**Note**

Remember to keep these treats occasional, as obesity can be a big problem.

Sunflower seeds can be fed as a treat for rodents. Care must be taken not to allow the animals in your care to become obese by overfeeding, as this can lead to health problems.

**How to feed**

The method of feeding will depend on the class of animal to be fed:

- Young rodents will need to have their food placed close to their nest for ease of access.
- Older rodents can be fed in shallow bowls, via hoppers, or the feed can be placed in a recess in the wire lid of the cage.
- Food can be hidden in various places within the animal house to give the residents a challenge.
- Automatic gravity feeders may be installed in laboratory cages to prevent contamination and to calibrate the amount consumed.
- A sipper bottle is the most effective way to provide water for rats and mice. It allows easy access but reduces spillage. It is essential that the water is changed daily as it will turn sour quickly if the weather is warm.
Water

Animals should have access to fresh clean water at all times. This can be provided via a sipper bottle or an automatic system. These can block easily so should be checked regularly. Water can also be provided in heavy ceramic dishes that the animals cannot tip over.

The type of waterer you choose for your animal house depends on the following:

- a continuous fresh supply if the system is automatic
- be reliable and efficient
- will not freeze in cold weather, or overheat in hot weather
- be tamper-proof and spill-proof
- be easy to clean and replace
- have hidden float valves if it is an automatic system to avoid breakage, flooding or failure of supply
- be the appropriate size for the number of animals to be supplied.

Food storage

- Rats and mice are very messy animals and tend to soil their food by walking, urinating and defecating in their feed bowl. To avoid this have the bowl raised slightly off the ground.
- Rats need a heavy bowl or hopper as they can easily tip the feed bowl over.
- Dry feed needs to be stored in tightly closed containers that prevent access by vermin and moisture.
- Fresh fruits and vegetables should be stored in a refrigerator.
- The quantities of feed to be kept on hand will depend on the numbers of animals being catered for.
• In research institutions, it is common practice for foodstuffs to be autoclaved.
• Feed needs to be bought regularly to ensure freshness.
• Feed needs to be stored in dry vermin-proof containers. These can range in size from a silo down to a plastic container with a securely fitting lid.
• All feed should be kept in clean airtight containers to prevent disease, dust and vermin from contaminating the contents.