

Burgess[™]
SINCE 1790
Excel



RABBIT NUTRITION AND ITS
IMPACT ON HEALTH AND WELFARE

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ABOUT BURGESS PET CARE

With a history of innovation in milling and nutrition spread over three centuries, Burgess have always sought to increase knowledge through research and education.

It is this history which drove us to question the way that rabbits are fed and wonder if we could find a better way, which in turn led to the creation of the ground breaking **Excel 5 Step Feeding Plan**.

For us it is clear that there is still work to be done to help educate owners about the nutritional needs of their animals. Therefore, we have developed this booklet that summarises research undertaken into the impact of different diets on rabbits' health and welfare along with recommendations on the best type of nutritional plan to keep your rabbits happy and healthy. We hope that you find this booklet helpful and instructive.

Dr Suzanne Moyes
MVB, MRCVS



The ^{Burgess}Excel feeding plan

We have developed our vet recommended*
Excel feeding plan to help your rabbits thrive.

92%
of vets
recommend
Excel*

FEEDING HAY



EXCEL NUGGETS



NATURE SNACKS



FRESH GREENS



FRESH WATER



The complete diet for rabbits and guinea pigs

* Annual survey of UK vets

MUESLI STYLE DIETS ARE UNHEALTHY!

- Selective feeding occurs when rabbits choose some components of the muesli diet in preference to others. Rabbits will naturally select the higher energy (high sugar or starch elements) and reject the pellets. This results in an unbalanced diet as the pellets are often supplemented with minerals and vitamins as well as often being high in fibre. Selective feeding increases the risk of the problems below:
 - dental disease
 - gut stasis and other digestive problems
 - fly strike
 - reduced fibre intake
 - reduced water intake
- Rabbits fed muesli style diets eat less hay leading to a reduced fibre intake.
- These issues have been highlighted in research supported by Burgess Pet Care. The results have been published in peer reviewed journals.
- As a result of this research Burgess stopped producing muesli style diets in 2013 and we have continued to educate vets, retailers and rabbit owners on the importance of correct nutrition for rabbits and guinea pigs.



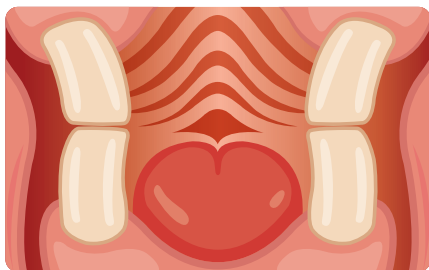
Image credit:
RSPCA
www.rspca.org.uk

MUESLI STYLE DIETS INCREASE THE RISK OF OBESITY¹

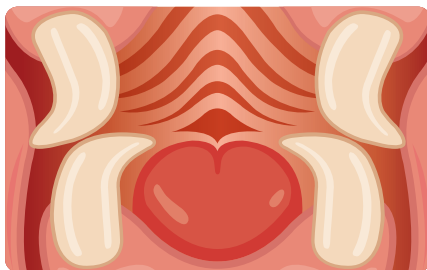
- Muesli style diets have been shown to increase the risk of obesity. This is thought to be due to muesli diets reducing fibre intake and increasing the intake of easily digestible carbohydrates and fats.
- Rabbits fed on muesli style diets are less active which may contribute to the risk of obesity.

MUESLI STYLE DIETS INCREASE THE RISK OF DENTAL DISEASE²

- Muesli style diets have been shown to increase the risk of dental disease.



HEALTHY TEETH



OVERGROWN TEETH

- Dental disease is the most common health problem found in rabbits, causing pain and suffering. The resulting inability of the rabbit to eat properly can cause serious digestive issues.

MUESLI STYLE DIETS REDUCE WATER INTAKE³

- Muesli style diets have been proven to reduce water intake in rabbits when fed alone or alongside hay.
- Reduced water intake increases the risk of urinary tract problems such as sludge, stones, blockages, cystitis and scalding.
- Feeding the appropriate quantity of nuggets alongside feeding hay helps to maintain water intake.

1. Meredith, A. L., Prebble, J. L. & Shaw, D. J. (2014) Bodyweight and body condition score in rabbits on four different feeding regimes. *Journal of Small Animal Practice*.
2. Meredith, A. L., Prebble, J. L. & Shaw, D. J. (2015) Impact of diet on incisor growth and attrition and the development of dental disease in pet rabbits. *Journal of Small Animal Practice*.
3. Meredith, A.L., Prebble, J. L. (2014) Food and water intake and selective feeding in rabbits on four feeding regimes. *Journal of Animal Physiology and Animal Nutrition*.

MUESLI STYLE DIETS REDUCE HAY INTAKE

- Feeding hay and fresh grass should make up 85-90% of a rabbit's diet.
- Muesli style diets have been proven to reduce the amount of feeding hay that rabbits eat.
- Reduced hay intake increases the risks of dental disease and serious digestive issues such as gut stasis.
- Reduced hay intake can increase abnormal behaviour in rabbits such as inappropriate chewing of fur and other materials, inactivity and stereotypies.

MUESLI STYLE DIETS INCREASE THE RISK OF FLYSTRIKE

- Muesli style diets have been proven to increase the amount of uneaten caecotrophs in rabbits when fed alone or alongside hay.
- Flystrike occurs when flies lay their eggs in soiled fur. The eggs quickly hatch into maggots and chew their way into the rabbits skin.
- Rabbits fed on muesli style diets have a higher level of uneaten caecotrophs (sticky droppings) which can stick to their fur and predispose them to flystrike.



Image courtesy of Woodgreen Pets Charity

MUESLI STYLE DIETS INCREASE THE RISK OF GUT STASIS

- Muesli style diets have been shown to reduce the faecal output in rabbits when fed alone or alongside hay.
- Gut stasis is where the rabbit's digestive system slows down or stops. This can result in a build up of gas and toxins.
- Rabbits fed on muesli have smaller faecal pellets and a reduced faecal output, both of which are associated with the development of gut stasis.

4. Langford, F. M., Meredith, A. L., Prebble, J. L. & Shaw, D. J. (2015) The effect of four different feeding regimes on rabbit behaviour. *Applied Animal Behaviour Science*.

5. Meredith, A.L. & Prebble, J. L. (2017) Impact of diet on faecal output and caecotrophy consumption in rabbits. *Journal of Small Animal Practice*.

MYTHBUSTING MUESLI DIETS

18% of rabbits are still fed on unhealthy muesli style diets⁶. There are a couple of key reasons that people tend to be attracted to muesli based diets, we take a look at the most common of these below.

COST

- When speaking to owners, many tell us that when in store they choose a muesli product because it offers a better perceived value (lower retail price).
- However, in reality, while the cost per kg of a muesli style diet may be cheaper, selective feeding (the rabbits picking and choosing what bits of the mix they eat) means that a significant part of the food may be wasted and therefore the actual cost may be more.
- Have a look at the parts of your rabbits' food that are wasted. Do you end up throwing away a portion of the muesli mix every day?

VISUAL APPEAL

- We humans tend to be attracted to colourful foods that look like they offer variety, and assume our rabbits will want the same.
- However this is based on a human view and bears no relevance to rabbits' nutritional needs. In fact rabbits do not actually look at colours etc. in food when eating as they can't see in front of their nose.
- The actual mix does contain some less healthy pieces (high in sugar and starch) that rabbits are likely to be attracted to over the more healthy, fibrous pieces. The rabbits are more likely to eat the less healthy pieces, leaving the rest.
- This is similar to giving a child a plate of chocolate and vegetables, they're unlikely to make the healthy choice!
- Remember that a rabbit's diet needs to be changed slowly. You should switch from an unhealthy muesli diet to a hay and nuggets based feeding plan over a period of between 14 and 28 days. You can do this by gradually reducing the amount of muesli and increasing the proportion of nuggets in your rabbits' food until the muesli has been completely replaced.

85-90% OF A RABBIT'S DIET SHOULD BE HAY

FEEDING HAY AND FRESH GRASS ARE SOURCES OF FIBRE WHICH ARE ESSENTIAL FOR RABBITS' HEALTH AND WELFARE:

- **Dental health** - fibre wears down teeth reducing the risk of dental problems.
- **Digestive health** - fibre ensures that a rabbit's gut keeps moving reducing the risk of gut stasis and bloat.
- **Behavioural health** - in the wild rabbits spend 70% of their time foraging. A constant supply of feeding hay and fresh grass is essential to allow them to express this normal behaviour and help prevent behavioural problems.



BURGESS PROMOTES AN ADEQUATE INTAKE OF FIBRE BY:

- Bringing you initiatives such as Rabbit Awareness Week (RAW) highlighting the dangers of a low fibre diet. www.rabbitawarenessweek.co.uk
- Educating of vets and retailers through webinars and seminars.

- Not all hays are the same and offer different levels of nutritional value for your rabbits.
- It's really important to understand that bedding hay and feeding hay are not the same.
- In the below table we look at the differences between a typical bedding hay and one of Burgess's specially grown feeding hays.



GOOD HAY **BAD HAY**

**TABLE
1**

BEDDING HAY v BURGESS EXCEL LONG STEM FEEDING HAY

BEDDING HAY

- Often cheaply manufactured, can remain packaged for long periods
- Comfortable to sleep on and provides insulation in the winter
- Unknown nutritional value
- Usually less tasty - reduces intake to a level insufficient to support dental and digestive health
- Can be yellow or brown and dusty, and can contain mould spores

EXCEL LONG STEM FEEDING HAY

- Grown specifically for feeding by UK farmers, with proven provenance
- Cutting at full bloom is more expensive, but it is the best time to cut as it results in a lush, green and long hay ideal for foraging and enrichment
- Nutritionally rich and laboratory tested to check nutrient levels
- High in fibre for a healthy gut
- Timothy hay is tasty and is great for chewing to help maintain healthy teeth
- Fresh and fragrant - it is packaged in a resealable bag
- Low in sugar, high in fibre and good for dental health. Barn-dried and dust-extracted to help maintain respiratory health

5 WAYS TO INCREASE YOUR RABBITS' DIET

1. FEED A TASTIER, BETTER QUALITY FEEDING HAY

- Some rabbits can be quite fussy about the variety of feeding hay they like.
- Choose good quality feeding hay which has been grown specifically for this purpose, like our Burgess Excel Feeding Hay, rather than bedding hay.
- Good quality feeding hay will be distinct by its fresh, fragrant green strands that aren't dusty.



2. TRY PUTTING THE FEEDING HAY IN THE ANIMALS' FAVOURITE RESTING PLACE

- Rabbits prefer to munch feeding hay while they're resting and while they're using their litter tray or toilet area.
- Put feeding hay around their housing and place it above the litter tray in a hay rack to catch them at the times they're most likely to eat it.

3. INCORPORATE FEEDING HAY INTO TOYS

- Most rabbits like to play and throw toys around.
- Incorporating feeding hay into play activities can encourage them to pull, bite and chew at the feeding hay:
 - A willow ball or cardboard tube filled with feeding hay can be hung from the cage or thrown around.
 - Feeding hay can be placed in brown paper then used to tie the ends together; rabbits will love throwing this Christmas cracker shape around and ripping it open to get at the feeding hay and herbs inside.

4. MIX IN A TASTY GARNISH

- It is good to mix feeding hay in with the foods rabbits like best. For example, their dry nuggets or fresh greens.
- Tasty dried herbs such as our Burgess Excel Luscious Leaves or Wildflower Forage can be sprinkled through feeding hay as a tasty treat which will encourage foraging.
 - While they're searching through the hay for the treats hopefully they'll eat more feeding hay too.

5. STOP FEEDING UNHEALTHY MUESLI DIETS

- Muesli diets reduce feeding hay intake.

BURGESS SUPPORTED RESEARCH

- The following papers highlighting the risks associated with muesli diets were supported by Burgess Pet Care:
 1. Meredith, A. L., Prebble, J. L. & Shaw, D. J. (2014) Bodyweight and body condition score in rabbits on four different feeding regimes. *Journal of Small Animal Practice*.
 2. Meredith, A. L., Prebble, J. L. (2014) Food and water intake and selective feeding in rabbits on four feeding regimes. *Journal of Animal Physiology and Animal Nutrition*.
 3. Meredith, A. L., Prebble, J. L. & Shaw, D. J. (2015) Impact of diet on incisor growth and attrition and the development of dental disease in pet rabbits. *Journal of Small Animal Practice*.
 4. Langford, F. M., Meredith, A. L., Prebble, J. L. & Shaw, D. J (2015) The effect of four different feeding regimes on rabbit behaviour. *Applied Animal Behaviour Science*.
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The ^{Burgess}Excel feeding plan

92%
of vets
recommend
Excel*

Burgess Excel is the first range to offer a complete feeding plan, which provides all the essential fibre, nutrients, vitamins and minerals that rabbits need.

Health and happiness in five simple steps and all 100% natural.

FEEDING HAY



EXCEL NUGGETS



NATURE SNACKS



FRESH GREENS



FRESH WATER



The complete diet for rabbits

1. FEEDING HAY AND GRASS

These premium quality Feeding Hay and Grass products should form the majority of the diet.

They are especially good for dental health as the grinding action required to eat them helps to wear down teeth. The teeth of rabbits and guinea pigs are constantly growing and overgrown teeth can be the cause of potentially fatal problems.

Feeding hays also play a vital role in digestive and emotional health as they provide the bulk of the diet's indigestible fibre and encourage foraging.



2. TASTY NUGGETS

Burgess Excel tasty nuggets are a single component food and are high in beneficial fibre, vitamins, minerals and prebiotics to help support healthy eyes, skin and coat.



3. NATURE SNACKS

These delicious, nutritious and natural snacks are ideal as they promote emotional health, help prevent boredom and encourage bonding and interaction between you and your pets. They can be fed daily, because they're packed with beneficial fibre and made with natural ingredients. Some are specifically designed to be fed by hand which helps pets to get comfortable with human attention. Snacks work really well when mixed through Burgess Excel Feeding Hay or Grass.



4. FRESH GREENS

Rabbits can be fed fresh greens to give additional nutrients and to provide some variety. You need to be careful about what you feed them, and how much.

- Some fruits can be fed, and are a great source of extra nutrients, but only feed in small amounts as they can be high in sugar.
- Avoid feeding anything that grows from bulbs, as these can be dangerous.
- Good greens to feed include kale, asparagus, basil, cauliflower leaves and celery.

A GUIDE TO GOOD & BAD GREENS FOR RABBITS & GUINEA PIGS:

EVERYDAY

Grasses (not lawn clippings), dandelion leaves, plantain, herb robert, rose bush leaves, nasturtium, wild geranium, strawberry and raspberry leaves, Hazel tree leaves & branches, willow tree leaves & branches, apple tree leaves and branches, Hawthorne, brambles, goosegrass, blackthorn, nettle (dried), cauliflower leaves, carrot tops, celery leaves, green pepper, kale, mint, romaine lettuce, spring greens.

OCCASIONALLY (IN SMALL AMOUNTS)

Apple (pipless), banana, savoy cabbage, turnip, carrot, swede, spinach, parsley, basil, dill, oregano, coriander.

NEVER

Apple pips, avocado, potato, potato tops, rhubarb (leaves & stalks), tomato leaves, locust pods & beans, any plant that grows from a bulb, bluebell, yew, foxglove, garlic, onion, shallots & chives, hemlock, buttercup, dock, ivy, poppy, privet, primrose, ragwort.

5. FRESH WATER

A plentiful supply of fresh water should always be available. Change it daily and ensure it hasn't frozen in the winter months.

EXCEL FEEDING HAY & GRASS

Delicious, complementary foods made from fresh Timothy Hay and barn dried grass. Burgess Excel Feeding Hays and Grasses are 100% natural, dust extracted hays that are great sources of beneficial fibre, helping to maintain dental health.

EXCEL LONG STEM FEEDING HAY

A long stem, sweet smelling feeding Timothy hay that's irresistible and high in fibre (63%). The time of cutting and the drying process helps to maintain the nutritional goodness. Lush, green and long, it encourages chewing, which is essential for dental health and provides emotional enrichment.



EXCEL FEEDING HAY DRIED FRESH GRASS

A barn dried Timothy grass harvested straight from the field that's naturally high in beneficial fibre (55%).



EXCEL FEEDING HAY WITH DANDELION & MARIGOLD

A sweet smelling hay made from fresh Timothy Hay with Dandelion and Marigold, high in beneficial fibre (63%). Timothy Hay is an excellent source of good quality, long fibre.



EXCEL HAY BOX

Our hay boxes are suitable for rabbits, guinea pigs & chinchillas is made from 100% natural ingredients and comes in a fully recyclable box. Dust has been extracted to help protect your pet's respiratory health, and our hay is high in Beneficial fibre, which aids with digestion. Available in Meadow Hay or Timothy Hay.



EXCEL TASTY NUGGETS

Delicious complementary foods for rabbits that are high in fibre, rich in nutrients and 100% natural. All our nuggets are fortified with vitamins and minerals for healthy eyes, skin and coats. All of our products contain a prebiotic to help maintain good digestive health.

EXCEL TASTY NUGGETS FOR JUNIOR & DWARF RABBITS

Young and dwarf rabbits have higher metabolic rates than adults, so Excel Junior & Dwarf accounts for this through its higher protein level.



EXCEL TASTY NUGGETS FOR ADULT RABBITS

With four varieties to choose from: Mint, Oregano, Light and Nature's Blend, rabbits can enjoy variety in their diet.



EXCEL TASTY NUGGETS FOR MATURE RABBITS

Our delicious, high fibre Mature Rabbit Nuggets with Cranberry & Thyme supplement your rabbits' diet with vitamins and minerals and prevent selective feeding. Suitable for older rabbits aged 5 years+



EXCEL NATURE SNACKS

Healthy, nutritious snacks that are high in beneficial fibre and promote emotional health and prevent boredom. All our snacks are made with 100% natural ingredients and can be fed daily because they're packed with goodness.

MEADOW MUNCHIES

Meadow Munchies are made from a tasty blend of dried meadow grasses and flowers that we know your small furries will love. With all natural ingredients, our specially selected, dust extracted hay supports dental, digestive and behavioural health.



FORAGE FEAST BARS

Our hay bars are high in fibre and perfect for hand feeding. These tasty hay bars are made with natural ingredients and topped with delicious flowers.



BAKED TREATS

Baked with love, our Excel Baked Treats are irresistible to rabbits. With no added sugar or artificial colours or flavours, they're naturally healthy too! Our Fruity Feast baked treats contain banana and blueberry and our Herby Hearts contain mixed herbs and apple.



HERB MIXES

Lovingly made, our delicious forage mixes are a healthy treat and are ideal for sprinkling on hay to encourage natural foraging behaviour. Luscious Leaves are made with a tempting mix of dandelion leaves, nettle leaves, red clover and ribwort and our Wildflower Forage are made with a tempting mix of rose, hibiscus, marigold & cornflower.



RABBIT AWARENESS WEEK



Burgess launched Rabbit Awareness Week (RAW) in 2006 with the aim of increasing the welfare of these misunderstood animals.

RAW brings together hundreds of retailers, vets and charities highlighting the unique requirements of rabbits and focusing on their welfare needs:

- The need for high quality feeding hay
- The need for companionship
- The need for appropriate housing and space
- The risks resulting from inappropriate diet
- The need to be able to express natural behaviours





Burgess[™] THE *Excel* FEEDING PLAN

92% OF VETS RECOMMEND EXCEL*



**FEEDING
HAY**



**EXCEL
NUGGETS**



**NATURE
SNACKS**



**FRESH
GREENS**



**FRESH
WATER**

THE COMPLETE DIET FOR RABBITS

www.burgesspetcare.com

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