



By Appointment to Her Majesty the Queen,
Horse Feed Manufacturers,
Dengie Crops Ltd, Essex.

Dengie

Bronze Product Advisor Course



Product Advisor Awards



Welcome to the first level of the Dengie Product Advisor Course and thank you for taking the time to learn more about feeding. The aim of this level of the course is to give you more information about Dengie products so that you can be confident you are recommending the right one to every customer. You may already know quite a lot about our fibre feeds but there is bound to be something new for you to learn. For example, did you know that Alfa-A Oil contains the same level of energy as a conditioning mix?

You should be able to find all the answers you need to pass with flying colours in this booklet, but do remember that you are welcome to call the Dengie Feedline on 01621 841188 or email feedline@dengie.com if you need any help. If you enjoy completing the Bronze level then why not have a go at the Silver level? It contains a lot more information on the horse's digestive system, raw materials and nutrients and so is a great way to learn more about feeding and nutrition.

Best of luck

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All About Alfalfa



From seed to feed

Although alfalfa is often perceived as a relatively “new” feed for horses, it has actually been used for thousands of years and the name “alfalfa” actually comes from Arabic, Persian and Kashmiri words meaning “best horse fodder” and “horse power”. You may also hear the name “lucerne” used, which can cause confusion, but it is just another name for alfalfa.

At Dengie we are very proud of the fact that we grow the alfalfa we use in our horse feeds ourselves. This ensures we know where every bag comes from. We can literally trace each one back to the field in which it was grown and it also means that our “food miles” are relatively low as the 5000 acres of alfalfa that we grow are within a twenty mile radius of the Dengie production site.



In contrast to cereal crops, alfalfa is left in the ground for 3 to 4 years and harvested several times each year. The following calendar of events gives you an insight into the life of an alfalfa plant.

The life of an alfalfa plant

Year 1

- Seeds are sown in March or April.
- Seed germinates within 1 week of being sown.
- First cut is taken June or July.
- Second cut is taken in September.
- In October the plants die back and remain dormant over the winter.

Years 2 and 3

- March sees the plant re-emerge and start growing.
- First cut starts April/May.
- Second cut starts in June.
- Third cut usually starts in August.
- Sometimes a 4th cut is possible depending on the weather.
- Harvest is usually completed in October

At the end of year 3, the alfalfa plants are ploughed up and wheat is usually sown to take advantage of the nitrogen that the alfalfa plants have put back into the soil. This helps to generate good yields whilst reducing the need for nitrogenous fertilisers, which is beneficial to the environment. As the alfalfa plants are left in the ground for a number of years they provide winter ground cover for birds, mammals and insects and help to reduce soil erosion.

All About Alfalfa



What happens to alfalfa after it has been harvested?

At Dengie we use a precision drying process to conserve the alfalfa - this means we are not dependent on the sun to dry the crop and this extends our harvest season. The chopped alfalfa is brought in from the field and enters the driers within 24 hours of being cut, thereby locking in the natural nutrients. The driers are basically like huge tumble driers, with hot air being blown through the crop as the drier gently rotates. In other countries such as the USA and Spain, alfalfa is "sun cured" where it is cut and left to dry naturally in a process similar to making grass hay in the UK.

Compared to sun curing, precision drying alfalfa retains much higher levels of nutrients. Another advantage of precision drying is that it provides consistently clean forage. Any mould spores present in the alfalfa are effectively killed due to the high temperatures used to dry the crop. Just like grass hay, sun cured alfalfa can be very dusty and have a large number of mould spores present, which can be detrimental for the health of the respiratory system, especially for horses that suffer with Recurrent Airway Obstruction (RAO or COPD).

After being precision dried, the alfalfa is then made into big bales. These are stored for use throughout the year and when needed are broken down and blended with other raw materials to produce the finished product.

Why does the appearance of the finished product vary?

As alfalfa is a natural material, the end product can vary in appearance but this is no different to the variations in colour, size and shape of the fruit and vegetables that we eat. Variation can be of concern to horse owners when they open the bag but hopefully the following information will explain why some of these variations occur.

Colour variation in the finished product is something that most people will notice at some stage and whilst some bags can appear bright green, others may appear brown. The main factor influencing the colour of alfalfa is the weather, with wet and warm conditions producing green, leafy plants whilst dry and hot weather tends to result in browner material. Although the alfalfa is mixed to try to create a consistent finished product, this can be difficult in years when extreme weather is experienced as most of the crop will be the same. Any variation in colour shouldn't be a problem for the horse as they have limited dichromatic vision, which means they do not really distinguish green from brown!

The alfalfa can also vary in texture, which relates to the proportion of leaf and stem it contains. The stems of the alfalfa plant are very fibrous whereas the leaf is very nutritious. The weather determines how quickly the plant is growing and if the conditions are right, it can mature very quickly, making it more fibrous. In contrast, leafy alfalfa can look very "bitty" in the bag, which is why we add coatings such as molasses or oil to all fibre feeds as it helps to bind the alfalfa leaf to the stem. As the leaf is the most nutritious part, it is vital that it is included in the feed.



Dengie Alfa-A Range



Fibre for the working & performance horse

The Alfa-A range are all based on alfalfa blended with different coatings to create feeds with a range of energy levels. As alfalfa naturally contains as much energy as a low energy mix, the Alfa-A range is ideal for horses and ponies in work or those that need to gain weight.

Doing things differently...

At Dengie we like to do things differently. As the feeds in the Alfa-A range contain plenty of energy, they can be used to replace cereal-based feeds (up to 500g per 100kg bodyweight) without reducing the horse's energy intake. This means that if a horse is fed up to 2 Stubbs scoops of cubes or 2.5 Stubbs scoops of mix per day, it can all be replaced with a feed from the Alfa-A range without reducing the energy content of the diet.

And why would I want to do this you might ask? Well, fibre based diets are much healthier for horses as they reduce the risk of digestive disturbance such as colic, laminitis and gastric ulcers, plus alfalfa provides slow release energy and so helps to reduce the likelihood of over-excitable behaviour.

As the Alfa-A range are straight feeds, a source of vitamins and minerals should be fed alongside. We would recommend either Dengie Performance+ Balancer or Performance Vits & Mins, which are both formulated specially to be fed alongside alfalfa based feeds.

Of course if you are a traditionalist, then any of the Alfa-A feeds can be used alongside a mix or cubes to increase chew time.



Dengie Alfa-A Range



Alfa-A Oil



Product Information

- Alfalfa with rapeseed oil
- No added molasses or preservatives
- Similar calorie level to competition or conditioning mix/cube
- 12.5 MJ/kg Digestible Energy

Perfect for:

- Fuelling harder work
- Weight gain
- Improving coat condition
- Improving endurance and stamina
- Individuals prone to muscle problems such as ERS & PSSM
- Individuals prone to laminitis that are underweight

Alfa-A Molasses Free



Product Information

- Alfalfa with rapeseed oil
- No added molasses or preservatives
- Medium energy level
- Contains alfalfa pellets for added interest, mint and fenugreek for palatability
- 11.5 MJ/kg Digestible Energy

Perfect for:

- Fuelling moderate work
- Weight gain
- Show shine
- Fussy individuals
- Individuals that require a low sugar and starch ration

Alfa-A Original



Product Information

- Alfalfa with a molasses coating
- Similar calorie level to a pasture or cool mix or cube
- 10 MJ/kg Digestible Energy

Perfect for:

- Fuelling light to moderate work

Alfa-A Lite



Product Information

- Alfalfa with a light molasses coating
- Contains natural spearmint oil
- Similar calorie level to high fibre cubes
- 9 MJ/kg Digestible Energy

Perfect for:

- Individuals that require a low sugar and starch ration
- Over-excitable individuals
- Fuelling light to moderate work

Dengie Hi-Fi Range



Fibre for the leisure horse or good doer

The Hi-Fi range combines alfalfa with other sources of fibre to produce lower energy feeds that are ideal for horses and ponies at rest or in light work and those that are good do-ers. The other sources of fibre used are grass and cereal straw, which effectively dilute the energy provided by the alfalfa.

The Hi-Fi range can be used in a variety of ways:

- Alongside traditional mixes and cubes to provide more chew time
- Instead of mixes and cubes as the main energy source
- As partial or complete hay replacers

If using the Hi-Fi range as the main energy source, a source of vitamins and minerals needs to be fed alongside to balance the ration. We would recommend either Dengie Leisure Vits & Mins or Dengie Leisure Balancer.

The Hi-Fi range can be used to partially or completely replace hay or haylage which may be necessary for very good do-ers and those with respiratory problems or when good quality forage is in short supply. The Hi-Fi range can be used to replace the same weight of forage and can be fed in big buckets instead of a haynet.

Hi-Fi Molasses Free



Product Information

- Alfalfa and cereal straw with rapeseed oil
- No added molasses or preservatives
- Contains pellets for added interest and mint and fenugreek for palability
- 8.5 MJ/kg Digestible Energy

Perfect for:

- Fussy individuals
- Individuals prone to laminitis
- Those with Equine Metabolic Syndrome
- Those in light work
- Using as partial hay replacer

Hi-Fi Senior



Product Information

- Alfalfa and precision dried grasses with a light molasses and oil coating
- 8.5 MJ/kg Digestible Energy

Perfect for:

- Horses and ponies that struggle to chew long length forage
- Performance and racehorses
- Horses with RAO
- Using when hay/haylage is in short supply
- Using as total hay replacer

Dengie Hi-Fi Range



Hi-Fi Original



Product Information

- Alfalfa and cereal straw with a molasses coating
- 8 MJ/kg Digestible Energy

Perfect for:

- Horses and ponies at maintenance or in light work
- Extending or partially replacing hay

Hi-Fi Lite



Product Information

- Alfalfa and cereal straw with a light molasses coating
- Laminitis Trust approved
- 7.5 MJ/kg Digestible Energy

Perfect for:

- Horses and ponies prone to laminitis or needing a low sugar feed
- Horses and ponies at maintenance or in light work
- Totally replacing hay

Nutritionally Balanced Fibre Feeds



Dengie's team of qualified nutritionists have formulated and developed a range of nutritionally balanced fibre feeds – one simple product that will ensure your horse benefits from a natural, balanced diet, including all the essential vitamins and minerals without the need to add a mix, cube or supplement when the recommended quantities are fed.

Healthy Hooves and Healthy Hooves Molasses Free

- Dengie Healthy Hooves and Healthy Hooves Molasses Free are the nutritionally balanced, low-calorie fibre feeds that are suitable for feeding to horses and ponies prone to laminitis. Containing a broad range of vitamins and minerals Healthy Hooves and Healthy Hooves Molasses Free will provide a balanced diet when fed at recommended levels.
- Contains B vitamins, including biotin which research has shown is beneficial for creating healthy hooves. The recommended feeding rate for a 500kg horse will provide 15mgs of biotin. Research suggests this is the beneficial level for greater growth rates and hardness of hooves. B vitamins are also important for overall health and well-being and, as they are usually produced as part of the fibre digestion process, any situation where fibre digestion is compromised, such as post-laminitis or when fibre intake is restricted.
- Free from whole cereal grains, Healthy Hooves and Healthy Hooves Molasses Free combines low-sugar and starch fibre sources, such as alfalfa, to provide slow release energy. Alfalfa also provides essential nutrients such as calcium, which is much more available to the horse than traditional sources such as limestone flour. A proportion of the key trace minerals zinc, manganese and copper are included as chelates, which means that they are more easily absorbed from the digestive system.
- Palatability is enhanced with real garlic.
- Pellets are also included for added interest.

Ideal for horses and ponies:

- prone to laminitis
- requiring a low sugar diet
- with poor quality hooves



	Healthy Hooves Molasses Free with MSM	Healthy Hooves
Digestible Energy	8.5 MJ/kg	8.5MJ/kg
Protein	9%	9%
Oil	5%	2.5%
Fibre	27%	27%
Sugar	2.5%	5%
Starch	1.5%	1.5%
Ingredients	Alfalfa Pellets, straw pellets, cereal straw, alfalfa, rapeseed oil, vitamin & mineral premix, garlic	Straw pellets, alfalfa pellets, cereal straw, alfalfa, molasses, rapeseed oil, vitamin & mineral premix, garlic, mould inhibitor
Stubbs scoop weight = 500g. Feed 500g per 100kg body weight.		

Nutritionally Balanced Fibre Feeds



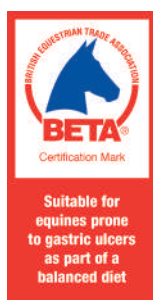
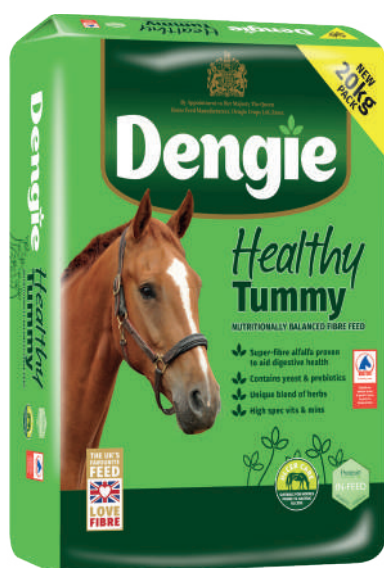
At Dengie we believe that fibre should form the basis of every horse's ration to help keep the digestive system healthy - just as nature intended.

Research shows that low fibre diets can contribute to gastric ulcers as the horse's natural trickle feeding behaviour would normally provide some protection against ulcers. The presence of fibrous material in the stomach acts as a physical barrier, literally stopping acid from coming into contact with the stomach lining. Secondly, continuous chewing produces saliva and saliva contains bicarbonates that help to neutralise the acid produced in the stomach. Any horse or pony that has restricted access to forage can be vulnerable to ulcers, which is why it is a problem that can affect racehorses or good doers.

Healthy Tummy

Dengie Healthy Tummy is a nutritionally balanced, high-calorie fibre feed containing the latest ingredients known to promote gut health including alfalfa.

- Provides 11.5MJ/kg of Digestible Energy, which is comparable to a medium energy mix or cube
- Made from pure alfalfa which is naturally low in sugar and starch and is proven to be a natural buffer to acidity in the digestive tract
- Contains ADM Protexin In-Feed Formula which supplies prebiotics and yeast to promote a healthy microbial population vital for fibre digestion
- Contains a unique blend of herbs including oregano, cinnamon and ginger which are believed to be powerful antioxidants
- A light oil coating has been included for slow release energy and coat shine
- Free from molasses and preservatives



Healthy Tummy	
Digestible Energy	11.5 MJ/kg
Protein	14%
Oil	8.5%
Fibre	27%
Sugar	4.5%
Starch	2%
Ingredients	Alfalfa, alfalfa pellets, rape seed oil, vitamin & mineral premix, ADM Protexin In-Feed Formula, yeast & prebiotics, herbs
Stubbs scoop weight = 500g. Feed 500g per 100kg body weight.	

Pelleted Fibres



Alfa-Beet

Alfa-Beet combines alfalfa with sugar beet and so must be soaked prior to feeding. It has a 15 minute hot soak time and 2 hours cold soak time - please note that it is perfectly acceptable to leave it soaking for longer if desired.

Sugar beet is a source of highly digestible fibre that when combined with other fibre sources such as alfalfa, improves the overall digestibility of all the fibre. This means that horses and ponies tend to do very well on Alfa-Beet as they are able to get more out of the rest of the fibre they eat.

Alfa-Beet is molasses free and so is low in sugar and starch making it suitable for laminitis prone individuals. Despite its name, sugar beet is actually very low in sugar because it is the fibrous residue that is left over once the sugar has been extracted for use in the human food industry.

As it is soaked, Alfa-Beet helps to increase water intake, which is useful all year round. In winter horses tend to drink less because it is cold and in summer more fluid is lost through sweating. With the short soak time, Alfa-Beet can be made up just before it is fed so there is no risk of it going off in warmer weather.

Alfa-Beet is ideal for:

- Poor doers
- Older horses with compromised dentition
- Increasing water intake
- Endurance horses
- Horses and ponies prone to laminitis

Alfalfa Pellets

Alfalfa Pellets contain pure alfalfa and absolutely nothing else - no binders, molasses or additives are used. Alfalfa is naturally low in starch and sugar and so Alfalfa Pellets can be used for horses and ponies prone to laminitis or those that can be over-excitabile. Rich in calcium and essential amino acids compared to other forages, Alfalfa Pellets are ideal for feeding to broodmares and youngstock and are more practical than chopped alfalfa for feeding outdoors. Alfalfa Pellets also make a tasty treat in a forage ball.

Alfalfa Pellets are ideal for:

A wide range of animals including ruminants, camelids and small animals such as rabbits. Other products in the Dengie range can also be fed to small animals. For further advice and information please contact the Dengie Feedline.



Grass Range



100% Natural Ingredients

We have created simple 100% natural feeds using the finest UK grown grasses, and oil.

Dengie Pure Grass Pellets, Pure Grass and Dengie Meadow Grass with Herbs & Oil are FREE from:

- Artificial preservatives, flavours and additives
- Molasses - no added sugar
- Cereals and cereal by-products including straw

Every ingredient is supplied by nature with minimal processing to retain as much natural goodness as possible.

Pure Grass Pellets & Pure Grass Meadow Grass with Herbs and Oil

Simply 100% naturally grown and precision dried meadow grass with no added sugar

- High in fibre and highly-digestible
- Can be fed as a hay replacer
- Naturally sweet - tempting fussy feeders
- Free from artificial flavours, preservatives, molasses, straw, binders and fillers
- Non-GM

Pure Grass Pellets Additional Points

- Ideal for snack balls
- Can be fed dry or soaked, making them ideal for older horses with poor teeth
- Please soak prior to feeding when fed alone to reduce the risk of choke - as a pure fibre pellet, at times the Pure Grass Pellets can absorb a lot of water and swell

Lincolnshire's finest meadow grasses are dried, chopped and lightly dressed with rapeseed oil. Topped with a unique blend of herbs including liquorice root, fennel, mint, chamomile and aniseed.

- High in fibre and highly-digestible
- The inclusion of grass pellets provides interest and texture
- Naturally sweet - tempting fussy feeders
- Can be used as a partial hay replacer up to 1kg per 100kg of bodyweight
- Free from artificial flavours, preservatives, molasses and straw
- Non-GM



Specialist Fibre Feeds



There are lots of sources of fibre that can be used to feed horses – the key is to find the right one for each horse. All chopped fibre feeds provide more chew time than mixes and pellets, and are lower in starch than cereal based feeds so can provide a higher fibre ration. At Dengie we pride ourselves on being the leading producer of fibre feeds and so every feed we make sources the best ingredients and is made with the same level of care and devotion.

Ulser Lite



Product Information

- Soft, tasty blend of grass and oat straw
- Alfalfa pellets included to provide bio-available source of calcium
- Contains ADM Protexin In-Feed Formula
- 8 MJ/kg Digestible Energy
- No added molasses or preservatives

Perfect for:

- Good Doers
- Horses prone to EGUS
- Fussy eaters
- Individuals prone to laminitis
- Hay replacer

Cool, Condition & Shine



Product Information

- Blend of grass and soft straw
- Includes grass and alfalfa pellets for interest
- Broad spectrum vits & mins included to provide a balanced diet
- High in oil
- 11 MJ/kg Digestible Energy

Perfect for:

- Fuelling moderate work
- Weight gain
- Show shine
- Fussy individuals

Performance Fibre



Product Information

- Precision dried chopped alfalfa and grass
- Straw free formulation
- A light molasses and oil coating
- 12 MJ/kg Digestible Energy

Perfect for:

- Fuelling moderate to hard work
- Soft & easy to chew for youngstock
- Promoting good respiratory health
- Fussy eaters
- Horses prone to EGUS

Dengie Balancers



Dengie Performance+ and Leisure Balancer are based on alfalfa and linseed with no added molasses and are specially formulated to balance an alfalfa diet. Linseed provides omega-3 fatty acids which help to generate exceptional coat condition.

Why do I need to use a balancer?

Balancers provide a concentrated source of nutrients with very little energy. This means that they can be used to provide a balanced diet without promoting weight gain or over-excitability behaviour. An improvement in condition is often seen when a balancer is added to a ration that may have been lacking in one or more essential nutrients originally. Feed 100g per 100kg bodyweight.

Leisure Balancer



- Contains chelated minerals for improved bio-availability
- Low sugar and starch
- Contains rosemary and thyme for palatability
- For horses at rest or in light work
- Contains biotin for hoof support

Performance+ Balancer



- Contains chelated minerals for improved bio-availability
- Low sugar and starch
- Contains rosemary and thyme for palatability
- Contains glucosamine for joint support
- A full range of B vitamins, including biotin for energy metabolism and good hooves
- Contains FOS prebiotic
- For horses that are working, veterans and breeding stock



Supplements



Vitamin & mineral supplements

Many people are confused as to when to use a vitamin and mineral supplement. Although many feeds contain added vitamins and minerals the horses will only receive sufficient levels if the feeds are fed at the recommended quantity. If less is fed then it is advisable for the horse to receive a vitamin and mineral supplement from the Dengie supplement range to provide a balanced diet.

Although alfalfa is a nutrient dense plant and has good levels of naturally occurring vitamins and minerals, the Dengie Alfa-A and Hi-Fi ranges have no added vitamins and minerals and so a supplement should ideally be used in conjunction with them. The exception is the Dengie Healthy range and Cool, Condition & Shine which contain added vitamins and minerals. They must be fed at the recommended levels to remove the need to add a supplement.

	Product Information	Feeding Rate	How long will a 2kg tub last
 Leisure Vits & Mins	<ul style="list-style-type: none">• Broad spectrum for horses at rest or in light work• Vanilla flavouring• Includes live yeast• Includes biotin• Available in 2kg and 10kg tubs	Pony - 30g Horse - 60g	66 days 33 days
 Performance Vits & Mins	<ul style="list-style-type: none">• Broad spectrum for working horses• Includes live yeast• Vanilla flavouring• Chelated minerals for improved absorption• B vitamins including biotin• Available in 2kg and 10kg tubs	Pony - 45g Horse - 90g	44 days 22 days

Bedding



Fresh Bed for Chickens

- Chopped, dust extracted straw bedding ideal for ex-commercial hens in particular
- Includes pine oil - a natural anti-bacterial and anti-fungal agent
- Developed in association with the British Hen Welfare Trust, Fresh Bed is designed to keep your hens feeling warm and cosy.



- Easy disposal as will compost much quicker than shavings and wood pellets and produces great compost for your veggies!



- Available in big value 100 litres and easy-to-handle 50 litre bales

- Please note this product is not suitable for rabbits, guinea pigs or other small furries

Alfalfa Research



The following information summarises the findings of research and trials that have been carried out by independent research groups or by Dengie into the benefits of alfalfa or specific Dengie products.

Improvements in hoof quality

Research back in 1987 at the Royal Dick Vet School demonstrated improvements to hoof growth rates and the quality of hoof horn when alfalfa was included in the horses rations. The improvements were attributed to the increase in calcium and quality protein that the alfalfa provided in the ration.

Vet Record (1987)



Buffering acidity in the digestive tract

An independent study carried out at Texas A&M University found that horses fed alfalfa hay had fewer and less severe gastric ulcers compared to horses fed grass hay. This is attributed to the protein and calcium content of alfalfa which buffers acidity in the stomach. The researchers recommend feeding alfalfa whenever cereals are used to counteract the increased acidity they produce.

Counteracting poor dentition

It is generally accepted that horses are living longer and are starting to outlive their teeth. Poor dentition can result in a considerable reduction in forage intake which significantly reduces the amount of energy an older horse consumes. This is one reason that older horses struggle to maintain their weight and condition. Dengie funded a study carried out by a Writtle College student to investigate just how big an impact poor dentition has on older horses.

Horses with poor dentition were compared to those with normal teeth on their ability to consume three different types of forage; hay, precision dried grass and alfalfa (Hi-Fi Senior) and a soaked alfalfa/sugar beet combination (Alfa-Beet) within a 45 minute period. When offered to the older horses, hay was actually refused on 44% of occasions compared with just 6% for the Hi-Fi Senior, while the soaked alfalfa sugar beet combination was not refused at all.



Hay represented the greatest problem for the older horses and they actually consumed two thirds less than horses with normal teeth. This difference was halved for the Hi-Fi Senior with horses with poor dentition consuming one-third less than those with normal teeth. The Alfa-Beet was easiest for those with poor teeth to consume and there was no significant difference in intake.

The study concluded that when older horses with poor dentition find fibre difficult to chew then it takes longer for them to eat or they refuse it all together, leading to a danger of significant reduction in intake of essential fibre and nutrients. A combination of Hi-Fi Senior and Alfa-Beet provides an alternative to hay that horses with poor dentition find much easier to chew and so are able to consume sufficient quantities that should help them to maintain weight and condition.

Feeding & behaviour

Here at Dengie we believe that diet may influence behaviour. Fibre supplies slow release energy and can easily meet the energy requirements of most horses and ponies, particularly when combined with oil - another source of slow release energy. However, many people believe they have to feed cereal-based feeds, such as mixes and cubes, particularly if their horse is in work.

We wanted to show that fibre and oil can meet the energy requirements of working horses, with the added benefit that horses will be calmer than when fed the same level of energy from cereal-based feeds, so we enlisted the help of researcher Louise Bulmer and Dr Jo-Anne Murray from Edinburgh Vet School to design and carry out a research trial.

Eight mature horses were used in the study, which ran from January to March, at a time when grazing was sparse. They were each kept in light work - taking part in jumping and flat work for five days a week - with daily turnout for between four and six hours at weekends.

Two different diets were fed during this time, both featuring exactly the same amount of energy and based on haylage. One diet was fibre-based, containing Dengie Alfa-A Molasses Free, with a starch level of 2 per cent, and the other included a cereal-based concentrate mix, with a starch level of 22 per cent, which is typical of a mix.

The horses were divided into two groups and fed each of the diets for 28 days in a crossover-design study. Behaviour was measured throughout as the horses were introduced to new situations and equipment. Heart rate was also measured to monitor stress levels during the tests.

The study showed that overall, the horses had higher rates (indicating higher stress levels) when exposed to new situations when fed a cereal-based concentrate mix compared to when they were given fibre-based feeds. This suggests that, although high-starch diets are considered an effective energy source for humans undertaking increased exercise, they are not necessarily ideal for providing energy for working horses.

Instead, energy might be better provided by feeding good-quality fibre because the study concludes that this type of diet appears to reduce reactivity, making horses easier to handle from the ground.



The Essential Rules of Feeding



The rules of feeding are designed to enable the horse to digest feed efficiently and promote good gut health.

Regular dental checks

If a horse can't chew his feed properly then it can compromise the rest of the digestion process. As horses are living longer they are more likely to suffer with dental problems, including losing teeth. Ensuring that horses with poor dentition have access to fibre they can chew easily is vital for their health and condition. Research has shown that high fibre diets are better for dental health than mixes or pelleted feeds.

Feed little and often

The horse's stomach is only the size of a rugby ball and so can't accommodate large meals. As fibre takes longer to eat than cereal mixes and cubes there is no need to restrict the amount fed whereas cereal-based feeds can only be fed in small quantities at any one time.





Use digestible feed ingredients

The small intestine is the site of absorption for protein, fats, oils and some starch. The amount of starch absorbed in the small intestine can be increased by cooking - just as you wouldn't eat raw potatoes, the horse shouldn't be eating raw cereals. The exception is traditional oats as they are difficult to cook due to their high fibre content. Excess starch can pass into the hindgut, where it can cause problems such as colic and laminitis.

Feed plenty of fibre

Fibre has many functions throughout the digestive system but it is in the hindgut where it is utilised by microorganisms such as bacteria to produce energy and nutrients such as B vitamins. Fibre digesting bacteria have important functions in the gut, including keeping harmful species of bacteria at bay. Heat is also produced as a by-product of fibre digestion and so high fibre diets help to keep the horse warm.



Avoid making sudden changes to the diet

The bacteria in the horse's digestive system like a stable environment in which to live. Sudden changes to the diet can cause bacteria to die off as their environment becomes less hospitable. This can result in the production of toxins, which may result in problems such as digestive disturbance.

Ensure the horse has access to water

Around two thirds of a horse's bodyweight is water so it is no surprise that dehydration can compromise health and performance. Ironically, horses often don't like clean water, much preferring the water from tanks in the field. When competing away from home it is a good idea to take your own water or use flavourings to mask the change.

Implement good hygiene

Washing out feed buckets and scoops helps to avoid digestive upsets as well as putting your horse off eating. Where horses are competing under rules it is important to ensure that no contamination has occurred with medications that are being used for other horses. Good stock management is also important to ensure that older product is used first.