

# HorseTalk

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**forageplus**

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*Should you feed Adlib Hay? • Is your haylage good? • Importance of Omega 3*



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# Should you feed Adlib Hay to horses and ponies?

**AN ARTICLE FROM FORAGEPLUS** | [Read original on the blog \*\*click here\*\*](#)

Do you have a horse which is a good doer? Do you wonder whether to feed adlib hay or whether you should be restricting hay and feeding at a weight level suitable for your horse? Here Forageplus discusses the issue of whether you should give your horse access to free choice hay.

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There has been discussion that the best way to feed horses is to give them either unlimited turnout on pasture or to give them the option of unlimited turnout and access to free choice hay. It is claimed that horses will regulate their own requirements, eating only as much as is necessary to maintain a normal weight.

Proponents of the 'always adlib' approach discuss the fact that without unlimited access to forage, horses will become stressed, that being deprived of food is unnatural and creates stress which causes cortisol release. Cortisol is a hormone which will worsen or perpetuate insulin resistance and it is claimed that this stress and the raise in this hormone will lead to acute and chronic laminitis.

## **Will horses on adlib hay maintain a healthy weight?**

Whilst it might be true that hormonal imbalance can be the cause of insulin resistance and laminitis, the amount of hay which might need to be fed to a horse and how much turnout eating grass they need, to maintain a healthy weight, is not as simple as giving them carte blanche to have an all they can eat buffet.

Firstly understand that hay and grass or just hay should be the greatest proportion of the horse's diet. This forage supplies the greatest amount of nutrients; calories, protein, minerals and vitamins. It is an oversimplification to say that all horses regardless of work level and breed should have as much hay or grass to eat as they wish.

Some horses, like Highlands and Connemaras are genetically programmed to survive on what seems like fresh air. This is an evolutionary advantage where scarce food in winter meant that those horses which could pile the most weight on through the summer months would be more likely to survive through to the next spring. If these horses are given a high energy hay or allowed to eat as much spring time grass as they wish then many owners find that they rapidly increase their weight.

Secondly understand that not all grass and hay are created equal. Spring grass will have a much higher calorific value per mouthful than the same height winter grass. Rye grass, created for the greatest milk and meat yield in farm animals will have more calories per mouthful than a multi-species meadow grass.



Hay cut in June is likely to be of a high feed value than that cut in July or August. Hay cut first thing in the morning is likely to contain more energy value than that cut in the afternoon. Even whether it is cloudy or sunny can have an impact on how many calories the leaf will contain.

### **How do I know how much hay or grass is healthy for my horse?**

The feed value of hay and grass is determined not just by the fermentable, digestible energy value of the forage but also by the amount of sugar and starch it contains. Where a horse is a good doer and genetically predisposed to insulin resistance (most native horses, Arabs, Morgans etc) the amount of sugar and starch the hay or grass contains will determine whether it is suitable for an IR horse to eat. Just eating as much as they want or need of this type of grass or hay could be unsafe in any amount. Whether fed in limited amounts or free choice, levels of sugar and starch will determine the insulin response. If the sugar and starch is too high then this will spike insulin. A horse with IR which has insulin levels constantly spiked is a horse which will gain weight because this spiking will trigger increasing obesity and insulin resistance.

### **Should my IR horse have adlib hay?**

While obesity per se does not cause insulin resistance, it does worsen it. This is why an overweight IR horse which loses weight slowly will improve with weight loss. However the 'diet' should be one which is not severe in calorie restriction as this can worsen laminitis. Recommendations by anyone to feed less than 1.5% of body weight should be politely ignored because weight loss which occurs too quickly can create metabolic stress which actually triggers or worsens IR. However feeding adlib hay will not work either because horses which are insulin resistant are also resistant to another hormone called leptin.

### **What is leptin?**

Leptin is what we at Forageplus like to call 'the stop eating stupid hormone' because leptin is a hormone that shuts off appetite when sufficient energy/calories have been consumed. A horse which is prone to insulin resistance loses this regulation so faced with unlimited hay the IR horse will keep munching without the shut off system to stop them becoming obese.

Then there is protein. Protein is fundamental to life; without protein there is no life, no cellular activity, no hormonal activity, no repair, no growth, no enzymatic processes to keep the body functioning. The body and brain work together to tell the horse to eat more if not enough protein has been obtained. Lack of protein means a larger appetite. Enough protein means the horse feels full and satisfied.

So we would like to suggest, VERY strongly that a blanket approach which advises adlib hay to all horses in all situations is VERY dangerous advice which oversimplifies what is not a simple situation. It is advice which could cause you and your horse to slide down the slippery slope to obesity and an increased chance of a life threatening bout of laminitis which may cause a hole in your heart and most certainly a hole in your bank balance.

### **When does adlib hay feeding for horses work well?**

Where adlib hay feeding does work well is for horses which have a normal functioning metabolic system. Most horses like this will adjust after a few days to the novelty and regulate their intake to what they need. The caveat to this is that protein should be sufficient to allow this. Where protein is too low then it may well be that horses will over eat.

So what should you do if your horse is a good doer and needs to maintain or reduce weight? Firstly if you know the energy value of your hay then you can work out exactly how much to feed each day to provide the right amount of calories to maintain the correct weight. Then if you know the protein value too, you can also work out if that amount of hay is providing enough protein so that you can add an additional protein source so the horse does not over eat in an attempt to fulfill demand for this nutrient. Lastly if your horse is IR or laminitis prone then knowing the sugar and starch level in the hay will determine if it is suitable and safe for your horse. Nutritional analysis will supply you with all these figures.



### **My horse is a good doer and needs to lose weight**

Where you don't know the energy value of the hay because you can't carry out analysis then to maintain weight you can use 2% of body weight. This would mean that a horse weighing 500kg would eat 10kg of hay per day. Where you want slow weight loss use 1.5% of body weight or 2% of the weight you want the horse to end up weighing or whichever is the greater. This would mean that a horse weighing 500kg would need 8.5 kg per hay per day. This can easily be weighed using a set of scales used for weighing luggage.

Where hay is restricted, the amount being fed running out too quickly can become a problem so using small holed hay nets or slow feeder systems/nets is a solution. Sometimes double or even triple netting the hay is needed and this doesn't need to be costly if you use cheap haylage nets. Alternatively, the horse can be fed multiple small meals throughout the day.

### **My horse is laminitic should I feed adlib hay?**

If your horse is laminitic or has been prone to laminitis it is extremely important to understand that weight control through calorie restriction will be inevitable if you are to stop the laminitis events in their track. A horse which is at the correct weight, eating the correct amount of minerals, vitamins and protein will be able to exercise and will be able to become healthier. Management of these horses is the key and a way of life where eating is controlled to provide optimum calories, optimum protein and optimum minerals and vitamins will put your horse in a win, win situation.

Part of this control will be making sure that your IR or laminitic horse is fed a hay with no more than 10% ESC (simple sugars) and starch, combined, fed at 1.5% of current weight or 2% of ideal weight,

whichever is larger. Grazing on pasture should be strictly controlled. For some horses no pasture ever will be the rule. For others turn out when sugars are low, early in the morning, for limited periods of time or only at night will work. In the UK many horses are best kept off grazing in what here at Forageplus we call the rocket fuel months of April, May and June. This is when the grass is at its fastest growth and highest calorie content so it makes sense to limit exposure to this forage.

### **How much grazing turnout should my horse get?**

If your horse is not IR, in regular exercise and the grazing is healthy then most will be fine on grazing either 24 hours per day or for 12 hours. Many people prefer to turn out at night once the hotter days come, this is useful because not only does it help reduce exposure to flies but it also results in horses grazing on pasture when the sugars are at their lowest.

### **What are the Forageplus top tips for adlib hay feeding?**

So should you feed your horse adlib hay or grass? The answer is it depends and that analysis of your forage will allow you to accurately determine how best to manage feeding. Calorie restriction may be essential for native, good doer types but this will be a positive approach where protein, mineral and vitamin levels are addressed. As long as you keep to a trickle feeding approach where no less than 1.5% of body weight is fed in hay and affect slow weight loss or maintenance of the correct weight then you won't need to worry about digestive health and with time and exercise a mineral balanced feeding approach will return your horse to metabolic health.







# Learn whether the haylage you are feeding is ok

## AN ARTICLE FROM FORAGEPLUS

Forageplus understands the need to feed good quality haylage to horses but how do you know if your horse haylage is good? Here we discuss what is haylage? How is horse haylage made and how can you tell that the haylage you are feeding is good for your horse?

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### What is haylage?

Haylage is grass that has been preserved by ensiling it, this means wrapping it in an anaerobic environment. A grass crop intended for horse haylage can be cut slightly earlier than for hay and can be made anytime from early June right through to September.

The grass is cut in the same way as for hay but dried for less time which is a benefit here in the UK with our very fickle weather. Usually the drying time is around 3 days but can be shortened if the weather has been very dry and because the grass is dried for less time the water content of haylage is higher than that of hay. Typically we like to see haylage at 70 – 80% dry matter. The grass is baled in small or large bales and wrapped tightly to exclude the oxygen.

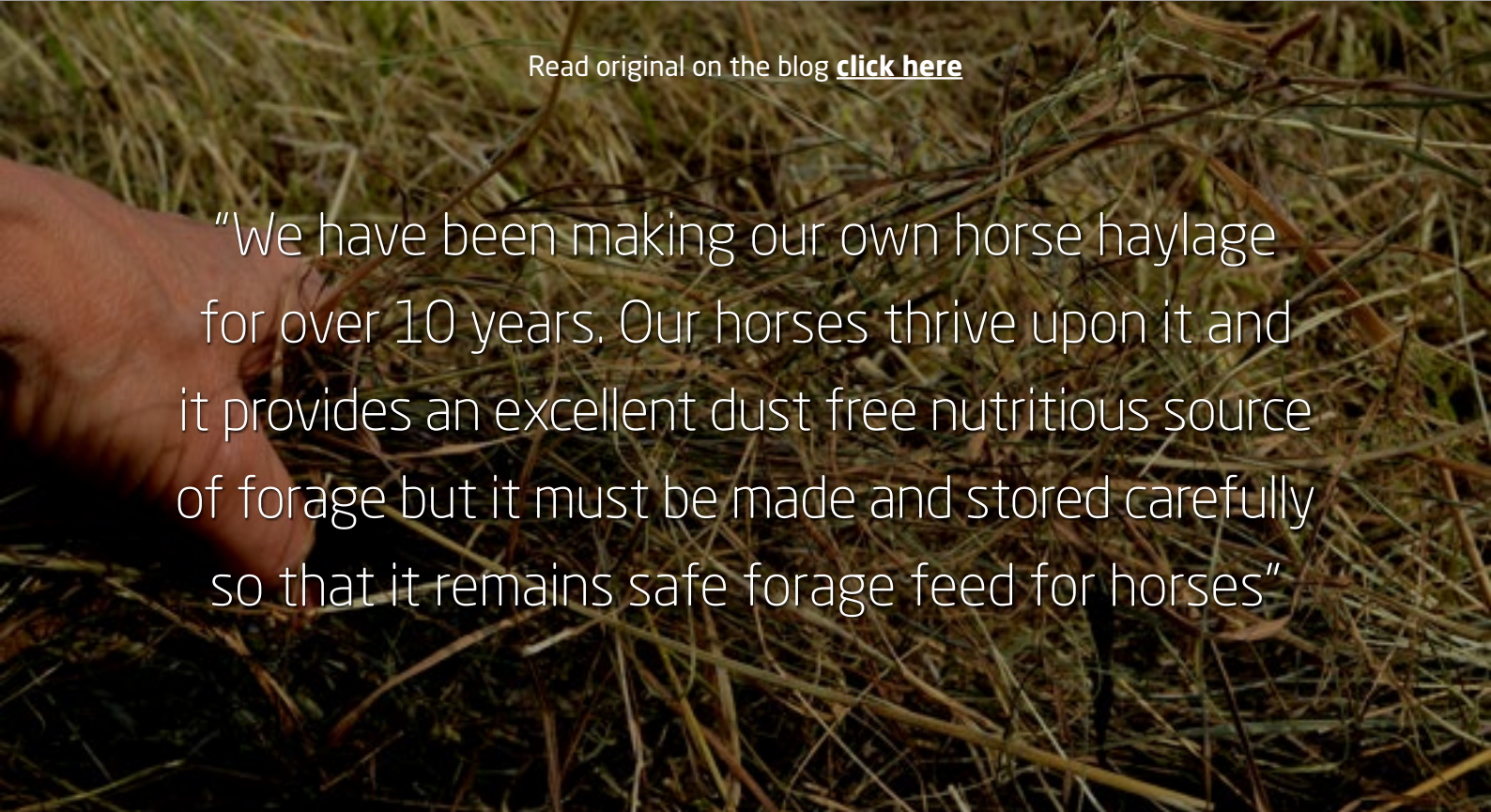
The drier the haylage is the longer it will last once opened. Typically we find that our haylage at 80% dry matter will last just over a week once opened.

Once baled the grass starts to ferment and pickle. This process results in increasing acidity. The pH should drop to around 5.0. This creates an environment where moulds and fungi cannot grow. At the end of the fermentation process you should have a stable forage which keeps for at least a year as long as the bag or wrapping remains fully intact. This pickling process can take 8-10 weeks.

### What should a haylage bale look like on the outside?

The outside wrapper should be in good condition, not punctured or ripped and not overly faded. You can check this by peeling a bit of the wrap back and seeing if it is a different colour underneath. If it is faded, it may suggest the bale has spent a long time in the sun and the wrap may have started to go porous and let oxygen in.

There should be plenty of layers of wrap. The plastic used for wrapping bales is not actually >



"We have been making our own horse haylage for over 10 years. Our horses thrive upon it and it provides an excellent dust free nutritious source of forage but it must be made and stored carefully so that it remains safe forage feed for horses"

> 100% air tight. Each layer of wrap reduces the porosity by about 50%. So 6 layers of wrap will let half as much air in as 4 layers, and 8 layers will let half as much in again. We suggest using at least 8 layers for the best protection and sealing.

There should also be no visible tears or 'repairs' to the bale. Haylage patches or tape, as long as it has been applied in the dry, not allowed moisture in and has created an air tight seal will seal the bale up again if it has been punctured, but you should inspect the patch and if in doubt not accept the bale. Never accept a bale where the wrap has been obviously damaged unless it was damaged very recently.

Ideally the bales should be covered with netting or a haylage cover to protect the bales from being punctured by birds. Small holes which puncture the wrap from birds landing on the bales or pecking them are likely to be the biggest reason for bales being damaged and then becoming unsuitable to feed to horses.

### **What should good horse haylage inside the bale look like?**

- The haylage should be a bright golden colour and look like a damper version of hay. We have found that horses prefer haylage which is more like hay.

- The haylage should be soft and clean to the touch and perhaps slightly sticky although we prefer haylage that is less sticky and more soft and dry.
- When you first unwrap it, it should feel warm, the same temperature as a nice warm summers day.

### **What should good horse haylage smell like?**

- The haylage should smell like a summers day.

### **What does bad horse haylage look like?**

- The haylage is a dark brown or very dark colour indicating excessive heating causing the forage to caramelise. This reduces the digestibility of the protein even though the horses may eat it up.
- There are lots of dark brown leaves and stems. This can mean that dead material was incorporated into the crop. This can be left over from a previous crop or could be a result of the crop being over mature when harvested. As long as the rest of the haylage looks and smells ok, this is generally not a problem apart from the visual impact.





- Another reason for the presence of dark leaves is that these are herbs such as plantains and other beneficial plants. The dark colour is because these type of plants are full of anti-oxidants. In this situation the presence of these dark leaves is beneficial.
- There are moulds or other growth on the haylage. This will indicate that there was insufficient lactic acid produced to preserve the haylage, or the wrap has been damaged. Where the wrap is intact it is possible the haylage was too dry when wrapped or that there are not sufficient soluble sugars in the grass to complete fermentation. In these cases the pH level will not fall low enough to prevent the growth of undesirable moulds and fungi.
- There are coloured moulds growing on it. These coloured moulds can be very dangerous and haylage like this should never be fed to horses.
- White spots that do not smell may be yeast. Yeast may grow slowly on haylage that had high levels of sugar in it. It can also grow where there was a pocket of oxygen in the haylage or if the haylage was inadequately pressed failing to remove all the oxygen. This is because yeast can grow both aerobically and anaerobically. Generally, yeast is not bad for horses, but frequent occurrences of it on bales would suggest a deeper problem.

### **What does bad horse haylage smell like?**

- If you smell a putrid or rancid smell from the haylage then this is of concern. Putrid smells indicate the presence of butyric acid from Clostridium bacteria and horses should not eat this haylage. This type of problem occurs mainly when haylage has been made too wet. In this situation there will be insufficient lactic acid produced to preserve, pickle and ferment the haylage.
- Yeasty bread, alcoholic or fruity smells indicate the presence of yeast growth. If you can smell it there is probably too much yeast growth and fermentation will have suffered and the aerobic stability of the haylage may be poor.
- Vinegar odours suggest an excess of acetic acid. This is the result of a different type of fermentation when there was a lack of lactic acid producing bacteria. Horses are usually reluctant to eat haylage which smells like this.
- Burnt odours indicate excessive heating took place and there was something seriously wrong with the fermentation process that occurred.

### **What does bad haylage feel like?**

- Haylage should not be hot to touch. If it is hot to touch it is either still going through fermentation or it is aerobically respiring (i.e. rotting).

- If the haylage is slimy and wet to touch it was baled too wet and probably has not fermented properly. This type of haylage will go off very quickly and care should be taken when feeding so that horses do not have their digestive systems upset.

### Problems with horse haylage

One of the biggest problems with horse haylage is the presence of clostridium botulinum organism which as discussed tends to proliferate in very wet haylage. Clostridia are bacteria which live in soil and can contaminate the grass crop due to soil splash or the crop being cut too close to the ground. However if the haylage is dried to a dry matter above 50% then it will be too dry to support the clostridia to multiple.

Haylage that is very acidic and wet may upset the hind gut of the horse leading to colic or even laminitis.

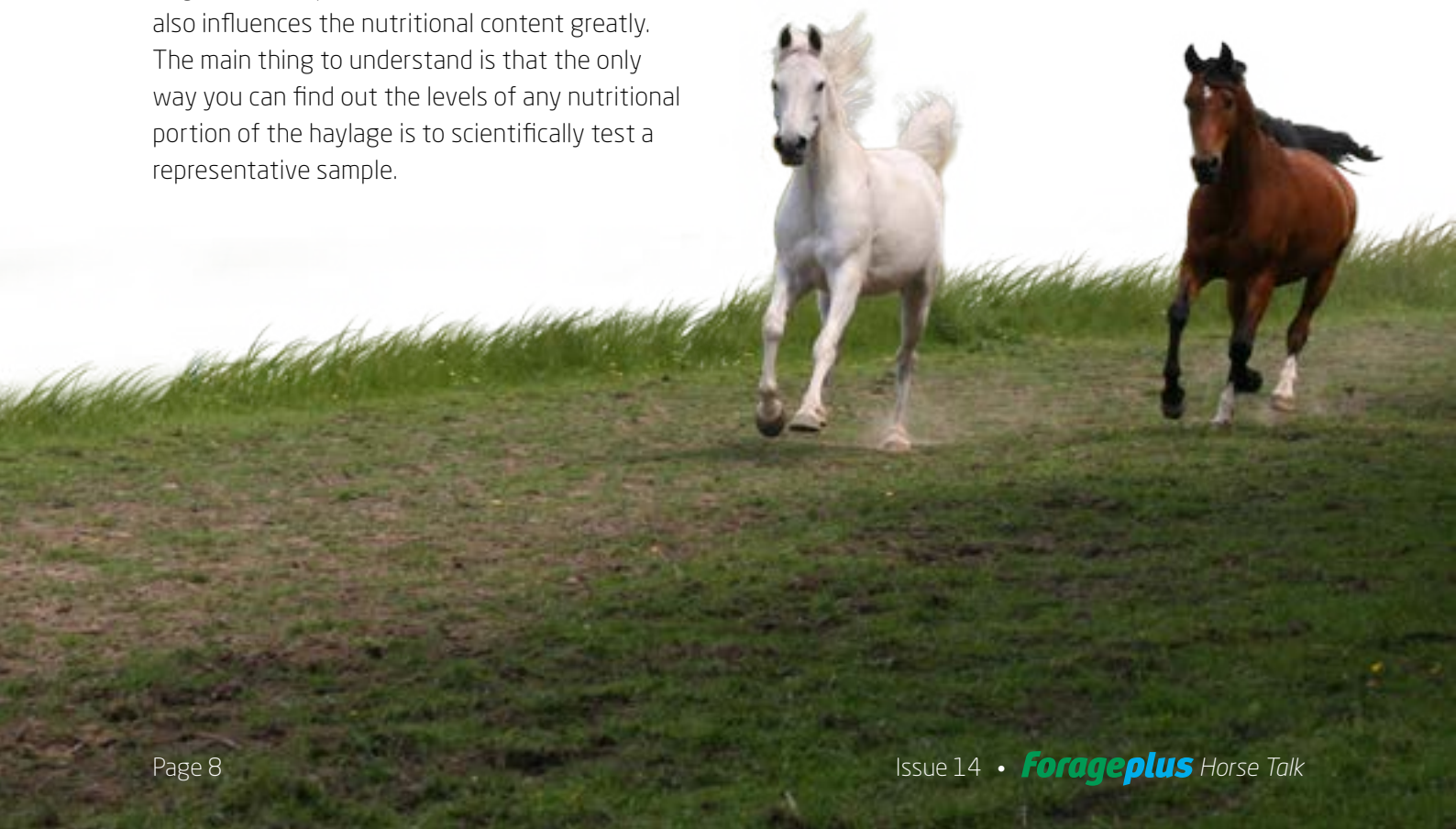
Some people say that haylage is richer than hay. This is a myth as it is impossible to tell the nutritional value of a forage just by looking at it. The nutritional value of any forage is determined by the time of year it was cut and the way it was handled after cutting. For example, June cut forages tend to be higher in both protein and sugar than later cuts. The species of grass or grasses and plants contained within the bale also influences the nutritional content greatly. The main thing to understand is that the only way you can find out the levels of any nutritional portion of the haylage is to scientifically test a representative sample.

### How much horse haylage should you feed?

The water content of haylage is much higher than that of hay so in order to feed enough dry matter content you will always need to feed more haylage than hay. For example if the hay fed is 85% dry matter and the haylage fed is 70% dry matter then you will need to feed 15% more haylage by weight because there is 15% more water in each kilogram.

We hope this article is useful to horse owners. Here at Forageplus we have been making our own horse haylage for over 10 years. Our horses thrive upon it and it provides an excellent dust free nutritious source of forage but it must be made and stored carefully so that it remains a safe forage feed for horses.

We have been very concerned to improve the soil the Forageplus horse haylage is grown upon. We have done this and careful applications to improve the balance of the minerals available in the soil to the roots of the plants. We have also carefully maintained our grass meadows to encourage a wide diversity of plant species which enhances the nutritional value of the haylage fed to our horses. This careful approach coupled with the feeding of minerals and vitamins matched to the forage fed is proving to be the way to create truly healthy horses.







# Omega 3 for Horses – Importance of this essential fat in equine diets

## AN ARTICLE FROM FORAGEPLUS

Do you know about omega 3 for horses and its importance in equine diets? Omega 3 is an essential fatty acid which cannot be made by the horse's body and must be present in the equine daily diet for them to be truly healthy.

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There are numerous sources of omega 3 but which one is best for your horse? Flax seed (otherwise known as linseed), fish oil, chia seeds, krill and algae are all sources of omega 3. However which is the best omega 3 for horses source for you and when and how should you supplement omega 3?

### What are Omega Fatty Acids?

Your first question is probably what are omega fatty acids, why are they important and what exactly is good balance?

Omegas are the name for polyunsaturated fatty acids. Omega 3 is also referred to as alpha linolenic acid, whilst omega 6 is known as linoleic acid. The two omega fatty acids of most concern are omega 3 and omega 6 because they are essential meaning they cannot be produced by the body and must be obtained from what the horse is eating.

The plant omega 6, alpha-linoleic (AL), is metabolised to arachidonic acid (AA), and is generally considered to be pro-inflammatory. Omega 3, alpha-linolenic (ALA) is metabolised to eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA) and is generally considered to be anti-inflammatory.

### Why are Omega Fatty Acids Important?

Omega fatty acids are important because they have a range of health benefits for horses including:

- Strong hooves
- Shiny, healthy coat
- Supporting healthy skin to develop resilience against irritations and allergies
- Maintaining joint health

- Contributing to the maintenance and building of bone strength and density
- Enhancing and building immunity resilience
- Enhancing and increasing tissue elasticity

In addition, omega fatty acids play an important role in the regulation of inflammatory responses in the body. Omega 3s have an anti-inflammatory effect whilst omega 6s have a pro-inflammatory effect. At times of infection, injury or illness, inflammation plays an important role in the immune response and is useful to the horse during recovery. Omega 6s are involved in the body's role of producing inflammation mediators so that when illness or infection are present, the body can respond appropriately. Omega 3s help to ensure that inflammation responses do not occur when the horse is in good health and there is no need for such a response.

Research has shown that omega 3 fats are very important for immune system resilience and response. They are also known to be important for anti-inflammatory balance, assisting in joint and respiratory function, brain and eye health and influencing behaviour in young horses. There is also evidence that fertility in the mare and stallion is dependent upon good levels of these omega 3 fats.

## How much Omega 3 should a Horse eat?

Horse diets are plentiful in omega 3 when they are eating green and growing grass in spring and summer. In this situation omega 3 intakes will be excellent but as soon as the grass stops growing in autumn and winter and the horse switches to conserved forages such as hay or haylage their omega 3 levels plummet.

Increasingly it is recognised that because omega 3 fats can only be obtained from the diet it is really important to pay attention to levels in all situations where horses are not eating green and growing grass in sufficient quantity to provide the minimum levels for horse health.

In a grazing situation when the grass is growing in the spring and early summer a 500 kg horse will consume around 200-264 grams of omega 3 per day in the form of alpha-linolenic acid. This is the form of omega 3 contained within grass. Levels will drop if there is a drought, very hot or very cold weather.

Green and growing spring and summer grass has good levels of omega 3 and a ratio with Omega 6 of about 4:1. It is thought then that it is this ratio which we need to strive for but many modern feed stuffs such as soya, rice bran, vegetable oils, sunflower seeds and all cereals, have high levels >





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> of omega 6 and low levels of omega 3. In addition once grass is cut for hay it loses much of its omega 3 content as this substance is a very fragile compound. This means that horses on hay, hay and cereals, soya, or a vegetable oil enriched diet have very high omega 6 intakes but minimal omega 3.

AL and ALA are predominant in plant sources like grass, flax and chia. DHA and EPA are not naturally present in the equine diet. They are high in fish oil and krill oil and as horses are plant eaters it is not desirable to feed these forms of omega 3 to horses. Some algae are high in DHA.



### **What Feed is the Best Source of Omega 3 for Horses?**

We feel that the best source of Omega-3 fatty acid for horses which have reduced or no access to green and growing grass is micronised linseed. Chia seed is becoming popular but is expensive. As horses are plant eaters it is preferable to feed them a plant based source of Omega-3.

Flaxseed has a long history of use in equine diets to provide omega 3 for horses, being recognised for producing gleaming coats and bloom long before anyone was thinking about omega-3s. It is also low sugar/starch and high in soluble fibre. Chia is another plant source with an omega-3:omega-6 ratio similar to flax but is more expensive.

Horses are herbivores, evolved on a diet of grasses. They do not eat fish, tiny crustaceans or algae. When the goal is to provide omega-3s missing in a diet of hay or hay and grain it only makes sense to provide levels and types normally found on pasture. Linseed provides the perfect solution for replacing the missing omega 3.

## Getting the Right Balance of Omega Fatty Acids in the Horse Diet

Everything in the horse's diet and indeed life needs balance. To ensure that a horse is able to maintain normal inflammatory responses, it is important that omega 3 and omega 6 fatty acids in the diet are balanced. Many supplements will add to the load of omega 6 fatty acids which are abundant in the normal forage based diet. Disruption to the balance of omega 3 to omega 6 fatty acids is likely to result in a negative inflammatory response and a disruption of normal physiological processes.

There is limited research on the best ratio of omega 3 to omega 6, however, it is believed that an approximate ratio of between 1.5:1 and 3:1 is ideal for horses. This is largely informed by the levels which will be found in the forage that horses evolved to eat, so horses consuming over 6 hours per day of green and growing grass will be provided with a suitable ratio of omega 3 to omega 6 fatty acids.

Those horses whose grazing is limited or completely restricted will need supplementation of omega 3 in the form of linseed. The micronised type provides the best option.

Cereals such as oats, barley and maize are high in omega 6s and have an imbalanced ratio of omega 3 to 6. If a horse is on a high cereal diet then it is essential to provide an additional source of omega 3 unless they also have access to green and growing grass.

For horses being fed a diet high in fat for increased energy, weight gain or improved condition, it is important that the fat source has an appropriate balance of omegas. Many oils commonly fed to horses are too high in omega 6 so it is important to be aware that an imbalance may be created.

## How can I Feed Omega 3 to my Horse

Micronised linseed, flaxseed oil, sea buckthorn oil and fish oil are high in omega 3 fats. As horses are vegetarian it is generally recommended not to feed fish oil but to stick to the plant based sources.

Corn oil, sunflower oil, vegetable oil, soybean oil are high in omega 6s and so should be avoided in equine diets. Before adding an oil or fat source to your horse's diet, check the omega fatty acid ratio to ensure that your horse won't be burdened by excessive and unnecessary inflammation.

Omegas can also be provided through certain meal and seeds rather than as oil added to the feed. For this, the most suitable options are chia seeds and linseed meal. Rice bran is commonly fed to horses, but has a high level of omega 6s, so should be avoided unless feeding alongside an omega 3 source to counteract any potential imbalances.

A balanced diet providing the right amounts and ratios of all the nutrients will ensure your horse is healthy and active. Using forage, grass and hay, as the starting point for assessment of what is needed is the best and most effective place to start and is a basic which should not be overlooked.

