



NOT ALL ENERGY IS THE SAME

A horse lacking energy is a common concern for many riders regardless of discipline. Before changing to a 'high energy' feed or just increasing the amount of feed, it is important to think about what type of energy your horse needs.

Does your horse need more instant, sprint type energy? Or does your horse need more stamina? Or maybe, he needs a little of both? The type of energy your horse requires will ultimately determine which product is most suitable.

HEALTH CHECK

Before assuming your horse's, feed is the source of the problem there are several considerations worth checking:

- Is the horse fit enough for the work being asked?
- Is the horse overweight/underweight?
- Is the horse capable of doing the level of work being asked?
- Are you giving enough forage?
- Could the horse be in pain?

It is worth checking all of these to ensure they are not the source of, or a contributing factor to, the lack of energy your horse is experiencing especially if there has been a sudden change in energy levels, or you have previously tried addressing his lethargy with poor results.

THE HORSES MUSCLES

Next consider the work your horse is asked to do. There are numerous equestrian disciplines, and each requires its own set of unique skills from the horse and different workings of his muscles. Dressage, for example, requires stamina for work over extended periods whereas instant, explosive energy is needed for maximum sprint over a much shorter time frame in racing.

The horse has 3 types of muscle fibres to deliver work including:

1. Slow twitch, or Type I, fibres
2. Fast twitch, or Type II, fibres which are further subdivided into - Type II A and Type II B fibres.



THEIR PERFORMANCE, YOUR SUCCESS

Type I, or slow twitch muscles use aerobic metabolism. This process is dependent on oxygen to break down fuel stores such as carbohydrates and fats to produce energy generating ATP for muscle activity.

They are also surrounded by fat tissue which enables the transport of fat as fuel for these muscles. Type I muscle fibres can be thought of as fatigue-resistant as they can reduce the toxic end products of metabolism, such as lactate. This makes them well suited for work that requires stamina.

By contrast, Type II, or fast twitch, muscles do not have the ability to reduce lactate and so fatigue more quickly. The difference between Type II A and Type II B is in the way in which they metabolise nutrients, with Type II A being capable of using both aerobic and anaerobic metabolism to produce energy which is used to maintain high speed or for jumping. Type II B muscles on the other hand work without oxygen (anaerobic) to burn glucose (sugar) and store spare glucose as glycogen. These muscles contract quickly and are suitable for work that requires speed.

While every horse has fibres from each of the three categories, different breeds have unique combinations or ratios of the various muscle types allowing them to excel in their specific discipline. Today's thoroughbreds for example have an average of 80-90% Type II B fibres, whereas draft horses have a much lower proportion of these fibres and more Type I fibres making them more suitable for slower work.

This information allows us to be more selective with the amount and the source of energy we provide.

FEED FOR SPEED

To provide more instant energy switch to a feed with a higher starch content, which will include ingredients like oats, barley, or maize. Starch is a non-structural carbohydrate, which consists of many sugar molecules, connected to each other. Sugars are single molecules, which are easy to break down. As a result, starch is a "quick release" energy source as it delivers energy for the muscles to use quickly after intake. Besides energy, this process produces, waste products such as lactic acid and when lactic acid builds up the muscles become fatigued. All horses require some starch and sugar for energy, so they can't be removed completely from the diet (even hay will have some form of starch and sugar) but overloading the digestive system with these components can result in metabolic disturbances, which may lead to problems such as colic, hindgut acidosis and laminitis. Horses with issues such as Cushing's and gastric ulcers also benefit from diets low in sugars and starch. Starch and sugar

are not the enemy and when used correctly in the right situation, at regulated amounts they can be extremely useful. When using feed with these ingredients it is important and necessary to keep meal sizes small as this helps avoid a starch overload and resultant acidosis.

FEEDING FOR STAMINA

When feeding to improve stamina look for feed containing ingredients that supply "slow release" energy, like high levels of fibre and fat.

Although fibre is a type of carbohydrate (structural carbohydrate) it is broken down via fermentation by microflora in the hindgut. As the microflora break down the fibre, they produce volatile fatty acids (VFAs) which are absorbed into the bloodstream. They can then either be used to provide slow-release energy for the work being done or transported to the liver to be converted to glycogen which is then stored in the muscles and liver for use at a later stage. It is more difficult to breakdown fibre, and fats than sugars and as a result, it takes longer for the energy to be available, hence the term "slow release". Utilisation of fatty acids also does not produce any waste products, allowing muscles to work for longer before fatiguing.

Ingredients such as soya hulls, sugar beet pulp and lucerne are known as 'super-fibres', because they are highly digestible fibre sources that provide slow release energy. Fatty acids derived from fibres and fats are useful for horses that are unable to have cereal grains as they provide more energy in a smaller amount.

For example, a cup of oil contains as much energy as 1.2kg of oats. This allows performance horses to be fed adequate levels of energy without have to use sugars and starch assisting conditions such as gastric ulcers and Hind gut acidosis.

Although horses would not have access to a high fat diet in a natural environment, they are well adapted to digest fats and oils and these also improve stamina in the horse due to a 'glycogen sparing' effect. This means that if higher levels of oils and fats are fed this energy is used before the glycogen that is stored in the muscles.

This effectively provides the horse with an additional source of energy to use during exercise periods, providing an overall larger energy reservoir. This type of energy source is therefore ideal for endurance type activities.

After introducing fats and oils into the diet slowly, it takes approximately 6 weeks for horses to adapt fully to these ingredients, so results will not be seen overnight.

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DON'T FORGET ENERGY = CALORIES

If your horse is a good-doer feeding a large amount of a high energy feed, no matter what type, is likely to lead to weight gain, which in itself will not help with energy

levels. If the horse in question is overweight implementing a weight loss plan is the first step, as losing those extra kilograms will help your horse feel more energetic and be more comfortable to perform work. In some cases, you may be able to add a small quantity of a higher energy feed to the diet without increasing the risk of weight gain, if overall calories in the diet don't exceed what is needed. If you are looking at providing your good-doer with more

energy do contact a qualified nutrition advisor on how best to do this without encouraging weight gain.

CONCLUSION

Regardless of the discipline fibre should be the basis of the diet no matter what and should be fed at a minimum of 1.5% of bodyweight per day. In some horses this may be enough to provide their full energy needs, however, for most, additional concentrates will be needed to bridge the gap. When selecting the right concentrate for your horse it's important to discuss your horse's needs with a nutritional advisor to establish which energy source will be most ideal for your horse to give you the results you are looking for.

TESTIMONIALS

Dear Epol

Mandolin is a 19 year old 17hh OTTB. He has been on Epol Muesli since coming off the track at 5 years old. Even at 19 years old he only eats smaller amounts and is in great condition!

He dapples every Summer and it gives him the energy he needs to support his moderate working routine. He loves his Muesli and gets very grumpy if you don't give it to him quick enough!

I am so pleased with the Epol Muesli product. It is always consistent and keeps Mandolin in good form. Mandolin still competes in Show Jumping and when I plead with him nicely, he will do the odd Dressage test.

During a busy show calendar in 2021 Mandolin obtained top 3 finishes in all of his shows and finished on a high note with 4x 1st places at his last 2 shows all on Epol Muesli.

Thanks for taking the time to hear about him and his great experience on Epol Muesli.

Kind regards

Rebecca Erasmus



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