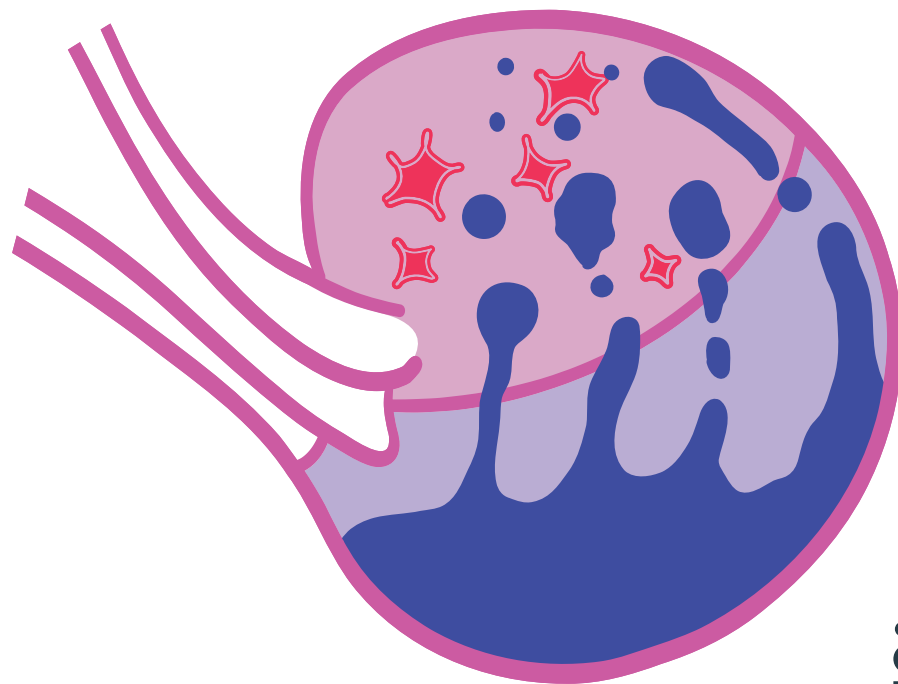


MANAGING GASTRIC ULCERS IN YOUR OTT

BY DR. NERIDA MCGILCHRIST



INTRODUCTION

Fussy eating, weight loss, playing in their water, messing about with their lips, misbehaving under saddle, anxiety, constant tail swishing while being ridden, colic, discomfort after eating, poor performance, crib biting, rough hair coat... they're all some of the many indications that your horse may have gastric ulceration.

As horse owners, gastric ulcers are an ever-present worry. They're painful for our horses, and time-consuming and expensive to treat!

In many cases, they're also reasonably easy to prevent!

Ulceration is largely a disease of domestication and happens because of the way we manage our horses. So if you understand the disease, what causes it and how to prevent it, reducing your OTT's risk of ulceration becomes relatively simple.

Let me show you how!

But first, let's take a quick look at the physiology of your horse's stomach...



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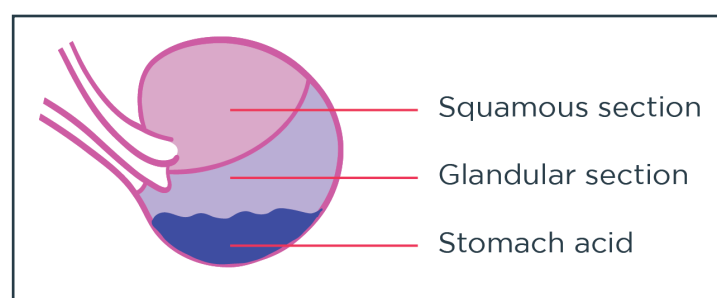
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HOW TO MANAGE GASTRIC ULCERS

STOMACH PHYSIOLOGY

Your horse's stomach is made up of two major regions, the upper, squamous region and the lower glandular region. When you look at these two regions by gastroscope you will see the upper region is pale in colour and is skin like. While the lower, glandular section is thicker and darker in colour.



The lower section of a horse's stomach secretes gastric acid, as part of the normal digestive process, 24/7... there is no on/off switch for the acid flowing into their stomach.

The lower, glandular region of their stomach secretes thick mucus to protect itself from being 'burnt' by the acid.

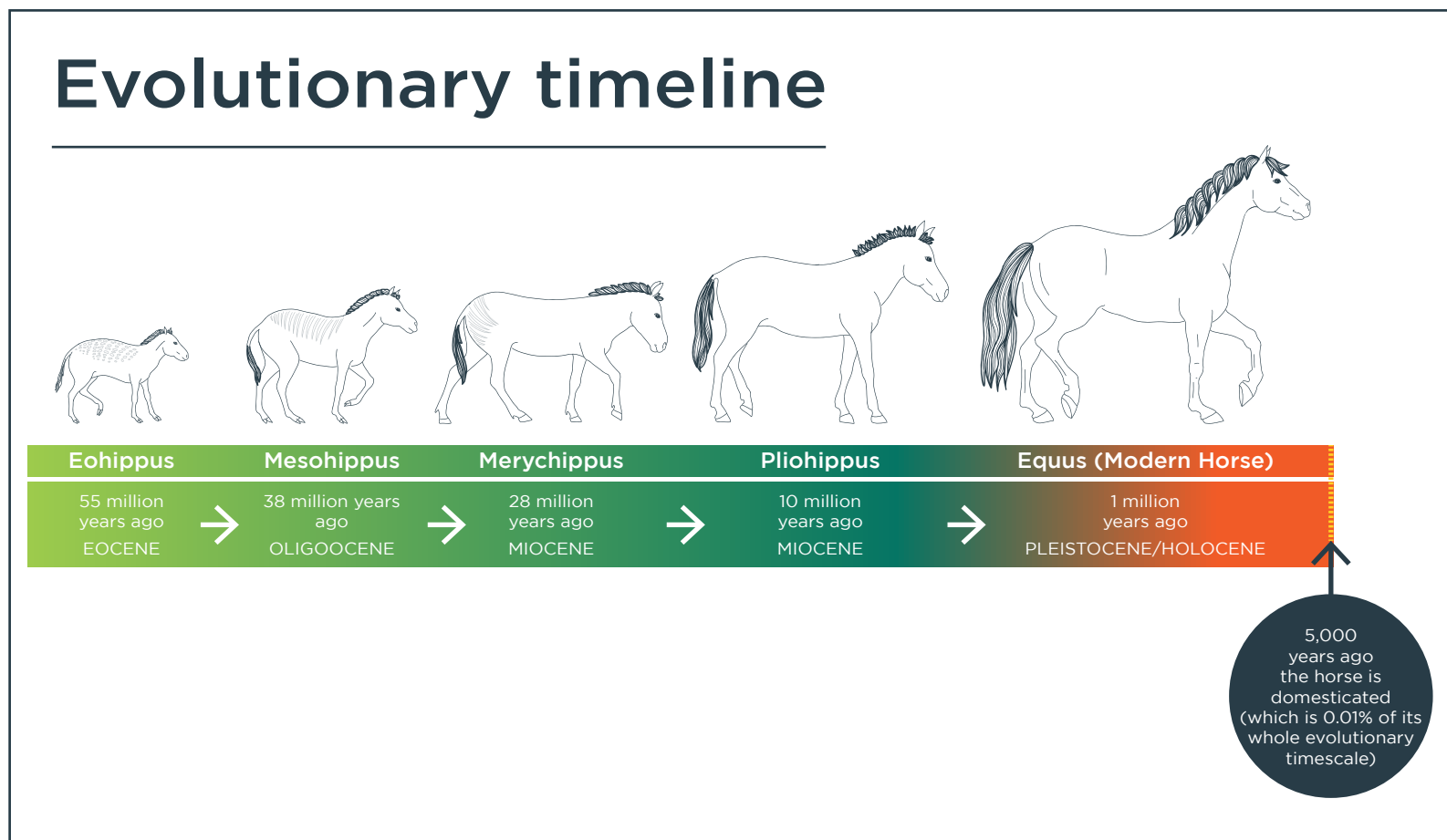
The top section of the stomach has no mucus protection from the acid. Instead, it relies on a horse's stomach always being full of fibre AND the horse to be almost constantly chewing so that it is diluting the acid with saliva. Combined, the fibre and saliva protect the delicate lining of the top of the stomach from acid-burn and ulceration.

This design in the stomach was created over 55 MILLION years of evolution. And, we can only assume, was almost perfectly adapted to a horse's natural environment.

But, in what can be considered the blink of an evolutionary eye, during the last 5000 years, or just 0.01% of the time they have roamed this earth, we have domesticated horses and drastically changed the way horse's eat; taking them from almost 100% forage and fibre based diets that were consumed via grazing for much of a 24 hour period, to eating lower forage diets, often with grains added and fed in meals.

And THIS has spelled physiological disaster for horses, with one of the most common problems caused by our human-made feeding systems being Equine Gastric Ulcer Syndrome or EGUS.

THE STOMACH (CONT..)



WHAT IS EGUS?

Equine Gastric Ulcer Syndrome, or EGUS, is an umbrella term used to describe ulcerative conditions of the horse's stomach. EGUS is then divided into two main conditions; Equine Squamous Gastric Disease, or ESGD, which is the ulceration that occurs in the top part of the stomach.

AND Equine Glandular Gastric Disease, or EGGD, which is the ulceration that occurs in the lower section of your horse's stomach.

The reason I am explaining this, with all these weird words and annoying acronyms is it matters a whole lot to understand that there is a difference between ulcers in the top of your horse's stomach and ulcers in the bottom.

They are caused by different factors, their symptoms can be different and the type as well as length of treatment also usually varies.

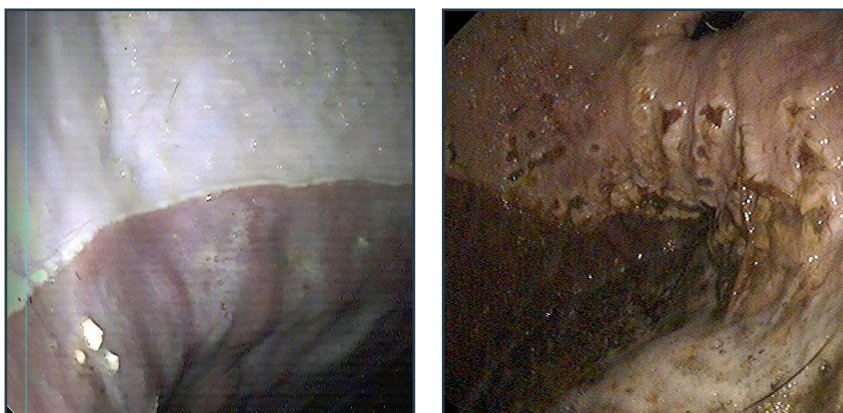
This QOTT eBook is going to focus only on ESGD or squamous gastric ulcers, the ones up the top of the stomach.

But please remember if your horse is diagnosed with 'gastric ulcers' it is critically important that you understand WHERE those ulcers are in your horse's stomach so that, together with your vet, you can treat them properly and put the right measures in place to try and prevent them in future.

WHAT IS EGUS? (CONT..)

Images of a horse's stomach
 A healthy stomach (left)
 A stomach with severe ulcers (right)

Image credit: Randlab



WHAT CAUSES SQUAMOUS ULCERS?

In their most basic form, squamous ulcers are caused by the acid from the bottom of the stomach splashing or squeezing up and literally burning holes through the skin like lining of the top section of the stomach.

With repeated exposure to the acid, ulceration can go from being a 'thickening' of the lining to deep, bleeding ulcers.

What causes the acid to travel upwards and burn through their own stomach lining?!

Well... remember I mentioned how horses evolved over 55 million years... their stomach was designed for an animal that was freely roaming around and eating almost constantly.

In their natural environment, their stomach was almost always full of fibre, so that the acid rarely, physically, had opportunity to splash or squeeze upwards. And if it ever did, it was diluted with saliva so it wasn't as acidic and therefore wasn't as likely to cause acid burn.

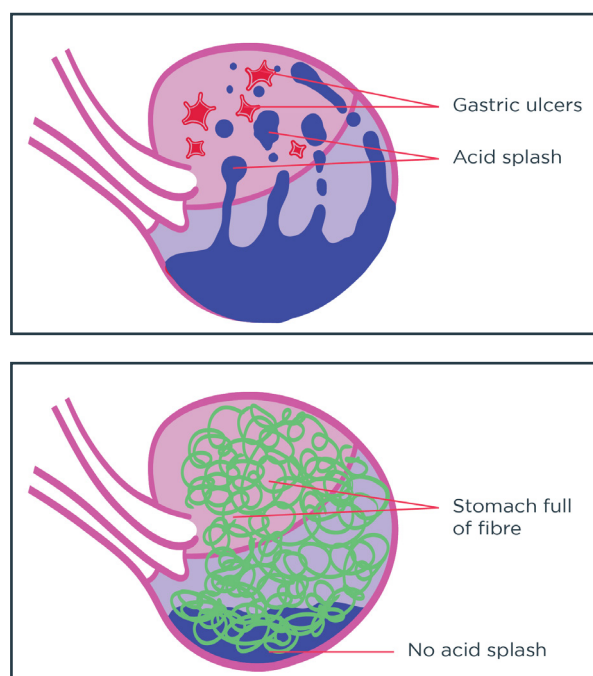
But now, we need their stomach to cope with extended periods of time without food, riding, training, travelling, competing, stabling or being kept without free access to forage, living without their herd and eating lower forage diets!

It's a lot to throw at a stomach that is not designed or adapted to cope with any of these conditions. And, unfortunately, squamous gastric ulcers are often the outcome, because the stomach ends up empty, with highly acidic acid that can move around and burn holes through the upper lining of the stomach!

BUT, it's not all bad news!

With just a little bit of understanding of your OTT's stomach physiology, you can put feeding management practices into place that will give you an excellent chance of preventing squamous gastric ulcers.

Here are my three best tips for preventing these ulcers in your OTT!



#1 – FEED LUCERNE HAY BEFORE YOU RIDE

If I could be given just two minutes with every horse owner in the world, this is what I would teach them... feed lucerne hay before you ride!

Remember that a horse's stomach secretes acid 24/7... this means, even when your horse stops eating, and even if their stomach empties, their stomach will still be secreting acid. Which means, if you go to ride your OTT, and your horse has an empty or near empty stomach, there will be a pool of acid sitting at the bottom! AND no fibre to stop it splashing or squeezing to the top!

So as your horse starts to move, the acid will start to splash or get squeezed upwards, and you will unconsciously bathe that fragile top part of the stomach in acid for your entire ride! Which will have two outcomes... One: it will be painful for your OTT to be ridden and you will more than likely see that in their behaviour. And two: it will cause ulceration!

Research from the University of Florida showed that when horses were worked on an empty stomach, the pH in the upper section of the stomach dropped to below pH 1! Normally the pH in this upper region of the stomach should always remain above pH 4, which is 1000 times less acidic than a pH of 1.

If you Google fluids with a pH of 1, you will find hydrochloric acid (which is the acid in your horse's stomach) as well as nasty sounding acids like sulphuric acid and phosphoric acid. And you will likely read warnings about these substances being highly corrosive and needing to be handled with EXTREME care!

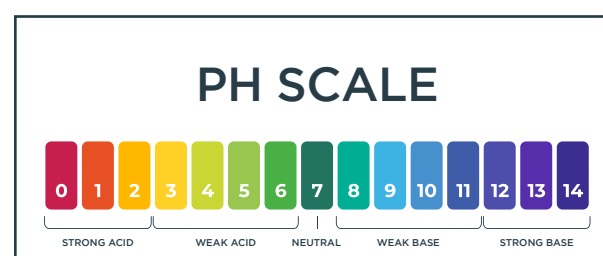
And yet, if you ride your horse with an empty stomach, this is potentially what is being splashed about in their gut!

The antidote... feed lucerne hay before you ride!

Lucerne helps in 3 wonderful ways!

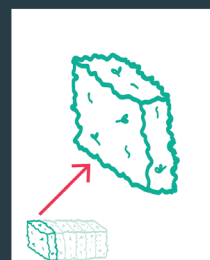
1. It provides the all-important fibre barrier that physically stops acid from splashing to the top of the stomach!
2. It causes a horse to chew and salivate, which floods the stomach with acid-buffering saliva that dilutes the acid and raises its pH so even if it should splash, it won't be nearly as damaging; and
3. Lucerne itself is a natural acid buffer so it also helps to raise the pH of the fluid in the stomach, making it much less likely to be capable of burning holes through the lining of the top of the stomach if any acid splash happens to still occur.

How much do you need to feed?



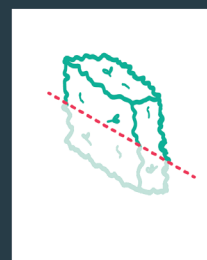
How much hay to feed before you ride

FOR A 500KG HORSE



2 kg

If your horse hasn't eaten for the last 2 or more hours



1 - 2 kg

If your horse hasn't eaten for the last 1/2 - 2 hours



0.5 - 1 kg

If your horse was grazing/eating hay right up until when you caught them

FEED LUCERNE HAY BEFORE YOU RIDE (CONT..)

The simple answer is... Enough to fill the stomach with fibre and saliva! But how much is that?!

As a simple guide, feed 2 kg of lucerne for horses that haven't eaten in the last 2 or more hours before a ride. And feed 0.5 to 1 kg of lucerne before riding for horses that have been grazing or eating grassy hay right up to when you catch them for your ride.

Truly, if you just do this one thing, your horse's level of comfort during a ride will be dramatically increased AND their risk of developing squamous ulcers reduced.

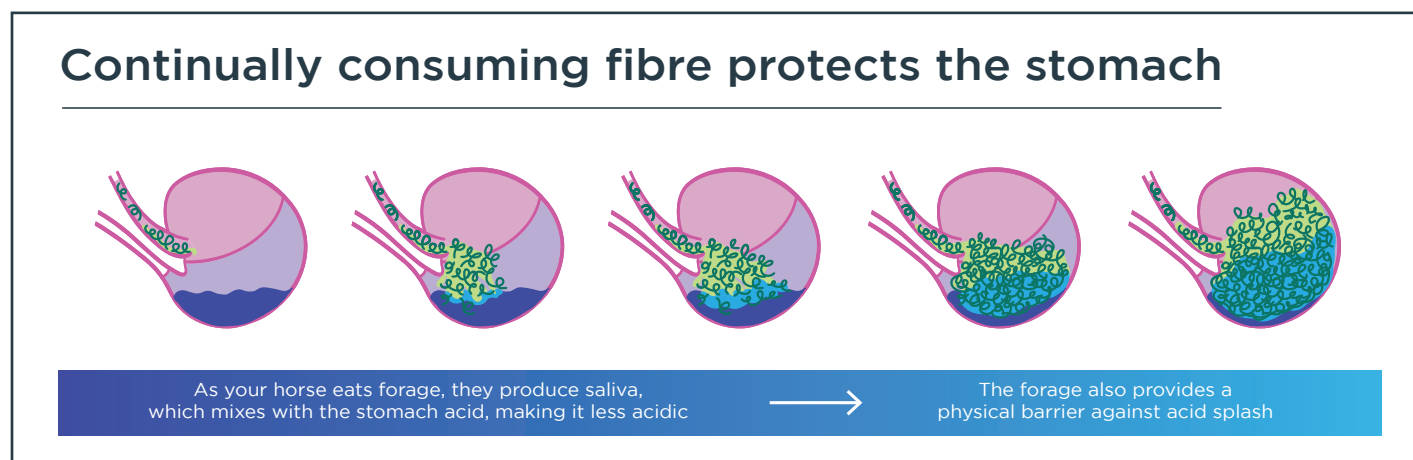
#2 – KEEP YOUR OTT CHEWING ON FORAGE

The more we can mimic the diet a horse has evolved to eat, the less risk of gastric ulcers! And the most important aspect to mimic is to keep them chewing on forage!

The longer we can keep a horse eating pasture or hay throughout a 24-hour period, the lower their risk of squamous ulcers will be, for two reasons:

1. The fluid in the stomach will be a much less acidic mix of saliva and hydrochloric acid. And less acidic fluid is not nearly as capable of burning holes through the lining of the top of the stomach; and
2. The near constant intake of forage means the stomach will be kept full of fibre for most of a 24-hour period.

Keeping your OTT's stomach exactly the way nature intended!



Here are some of the best ways I know to keep your OTT chewing on forage for as long as possible!

- Give 24/7 access to pasture if you are lucky enough to have it. OR if you don't have pasture, use free choice hay in its place.
- If you need to restrict hay intake because your OTT is a total guts and eats their hay very quickly, use slow feeders to slow intake down. Hay nets, hay bags and hay balls are all excellent options to keep them chewing for longer periods of time!
- Rely as much as you can on forage to meet your OTT's daily nutrient needs. Max out the amount of nutrients your OTT can eat from forage before you reach for the hard feeds. While hard feeds can be wonderful and frequently necessary for OTTs, don't ever restrict forage intake to allow the inclusion of hard feed in a diet... do the opposite, restrict hard feed so you can fit as much forage as you possibly can into the diet!

KEEP YOUR OTT CHEWING ON FORAGE (CONT..)

As a hard rule, don't ever let your OTT go for more than 6 hours without forage. And ideally always aim to keep periods of time they spend not chewing to less than 4 hours.

Be mindful that it's not enough to just have forage available, you have to make sure your OTT is actually eating the forage. Having your OTT graze with friends will help maximise time spent actually grazing and minimise time spent doing counterproductive things like fence walking or standing at the gate.

If your OTT is reliant on hay, make sure the hay is palatable and your OTT wants to eat it. Hay that your OTT will only nibble at occasionally isn't going to protect them from ulceration. If you find your OTT isn't eating their hay, work out why and make changes to increase their intake when needed.

An average-sized off-the-track should be eating 10 to 15 kg of hay per day when pasture isn't available. If they are eating less than 10 kg, you may need to change the hay or how it is fed to increase their intake.

#3 – MINIMISE GRAIN INTAKE

Research shows that excessive grain does increase the risk of squamous gastric ulcers and that reducing starch reduces the likelihood of ulceration reoccurring after treatment (Luthersson et al 2019). So it makes logical sense to carefully manage grain in your OTT's diet to reduce the risk or reoccurrence of ulceration.

You should feed as little grain as possible.

Keeping grain low in the diet allows you to maximise forage intake and minimise starch intake. For the purposes of minimising ulcer risk, you should keep meals to 1 gram of starch per kilogram of bodyweight per meal or less.

Which means if a grain-based feed is 20% starch, you can feed 2.5 kg of that feed per meal. If a feed is 50% starch, you should feed no more than 1 kg per meal.

Starch content of the feed	Maximum amount you should feed per meal for a 500kg horse
20 %	2.5 kg
30 %	1.7 kg
40 %	1.25 kg
50 %	1 kg

Never exceed 5 kg of grain-based feed per day for a 500 kg OTT.

I also recommend feeding grain-based feeds together with lucerne chaff to help reduce the potential negative impact grain has in the stomach.

As high energy alternatives to grain, consider using fibres like sugarbeet pulp, lupin hulls and copra meal... with sugarbeet pulp being top of the list for consideration as it appears to be potentially useful in reducing the risk of squamous ulceration in its own right (Pedersen et al 2018).

You can also use oils to add additional energy to diets where required, with flax seed oil being my preferred option.



OTHER QUICK TIPS

Here are some other quick tips for reducing the ever-present risk of squamous gastric ulceration for your OTT:

- Don't let your horse stand around without hay. If your horse is 'waiting' for the farrier or for their next class at a show, or any other reason, make sure they have hay to munch on!
- Give your horse hay to eat while travelling. Just dampen it down to keep down the dust.
- It sounds obvious, but make sure your OTT always has access to water.
- Keep a majority of rides to less than 40 minutes per day of work at the trot or above and try to ride in the afternoons when your horse's stomach naturally has a higher pH.
- Let your OTT graze with friends.
- Avoid stables or yards that prevent contact with other horses; and
- Avoid playing talkback or racing radio in stables. The horses tell us music is much better.

THE IMPORTANT BITS

To recap the most important bits:

- 1. Squamous ulcers occur in the top section of the stomach.**
- 2. They are most frequently caused by acid splashing or squeezing from the bottom to the top of the stomach.**
- 3. To reduce the risk of these ulcers, you need to stop the acid reaching the upper region of the stomach.**
- 4. To do this you should feed lucerne hay before you ride, feed a forage-based diet that keeps your OTT eating pasture or hay for as much of a 24-hour period as possible. And minimise the amount of grain you feed in the diet.**

Squamous ulceration is painful for your horse, and they are most commonly caused by the way we feed and manage our horses.

Following the feeding management practices you've been given here will dramatically reduce the risk of squamous ulceration for your OTT and make them much healthier and happier and able to do their very best for you!

**REMEMBER...
FEED LUCERNE
HAY BEFORE
YOU RIDE!**

ENJOY THE
JOURNEY