Equestrian Issue 23 2010

Talking Horses

The newsletter with news, views and practical advice

From the editor...

Spring is here! The foals are frolicking, the grass is growing, the bees are buzzing, laminitis is looming and showing is starting! We had a number of emails and calls following our review of winter diarrhoea in horses in the last issue (E22), and many owners reported that they concluded that excess water intake from succulent grass and habitual drinkers was a common cause.

In this issue, we review common eye diseases as many horses suffer weepy eyes as a result of fly worry, conjunctivitis, corneal abrasions and infections and the more serious condition of uveitis.

'Spring fever' is a common term for horses with increased energy and nervous behaviour during spring. We discuss the underlying cause.

We also provide a reminder on the risk of pasture induced laminitis and how to reduce the risk of this potentially crippling disease.

As usual, there are lots of handy hints and interesting facts. We wish you all a great start to spring and the warmer weather which makes riding more of a pleasure.

Regards,

Dr John Kohnke BVSc. RDA

In this issue...

Protect Cut or Broken Away Hoof Walls

Handy Hint 1

It is not uncommon for horses with seedy toe or poor hoof walls to either suffer break away on the edges of the hoof wall or have the hoof wall cut away as part of the management of seedy toe. However, whilst removal of excess, non-attached hoof wall allows access for treatment, it can expose the deeper lamellae structures to soil borne microbial infection and excess moisture. This can result in secondary abscesses developing in the lamellae. Whenever radical trimming or wall removal is carried out, scrub the cut surface with 10% PVP iodine solution, allowing it to remain on the surface for 5 minutes to release its iodine based antibacterial activity. Then swab the area with methylated spirits to remove fat and oil residues. Finally, apply a protective smear of silastic window sealant to the cut surface and surrounding hoof surface. Allow it to dry by standing the horse on a clean surface (eg a cement wash bay area or stable aisle) or a bag for 10-15 minutes and provide hay to eat. The silastic will provide a moisture proof barrier and prevent direct soil contact with the cut surface. It can be peeled off and replaced as required to maintain a protective shield to the hoof wall surface.

'Spring Fever'

Many horse owners report that some horses with access to lush, spring pastures often develop more 'energetic' and excitable behaviour, although they do not always appear to be overly anxious or 'nervy' in their temperament.

'Spring Fever' is a term which is used to describe this increase in 'energy'. It is linked to the intake of extra soluble sugars in growing plants and some authorities believe it is associated with high potassium mineral levels and possibly a low intake of magnesium in horses grazing rapidly growing, lush pastures. It is also likely that horses which have been resting over winter are more 'frisky' when ridden for the first few times because they are 'full of beans' and feeling great after a long holiday!

Horses grazing plants with high soluble sugar and 'fructan' sugar content, such as cool weather C3 grasses including ryegrass, fescue, cocksfoot and other cereal grasses are more likely to show symptoms of 'spring fever'. This could also be in part caused by the development of hindgut acidosis (refer to Laminitis review in this newsletter for a full explanation) which can result in nervy, 'fizzy' behaviour. Fillies and mares grazing clover pastures containing natural phytoeostrogens may also show symptoms of being 'in season' more intensely during the rapid growth period of spring pastures and hence more 'up on their toes' and 'bitchy' when being worked.

Supplement with Organic Magnesium

Handy Hint 3

It is considered that a low magnesium and high potassium intake in horses grazing lush spring pastures may trigger symptoms of 'spring fever' with 'fizzy' and unsettled, 'rushing' behaviour under saddle. Many horses tend to settle down when taken off the pasture overnight, which also reduces the risk of laminitis from excess intake of 'fructan' sugars. Many owners find that supplementation with magnesium, especially in organic chelated form, such as in **Kohnke's Own Mag-E**, at double doses daily for 5-7 days, helps to correct the low magnesium intake and maintain a more 'unfazed' attitude in horses with 'spring fever'.

Icing the Hooves of a Horse with Laminitis

Handy Hint 2

The latest recommended first aid for laminitis is to ice the hooves. Gel ice packs do not provide an adequate reserve of heat absorbing capacity. Applying a plastic bag of ice discs or cubes, encircling it around the hooves and wrapping a conforming elastic tape to hold it in position, provides more 'cold' reserve. Punch a small hole in the bottom of each bag to drain away the water as the ice melts. The ultimate is to stand the horse's affected limbs in a shallow tub (e.g. large plastic dish, cut down plastic drum or large bucket) thick with ice blocks in water up to the fetlock. Most horses with laminitis will stand contentedly for 30 minutes or more in the 'ice bucket' as the ice improves circulation within the lamellae, reduces fluid 'oedema' around the pedal bone and numbs the pain of laminitis. Repeat 3-4 times per day in acute cases, as well as medicate with 'Bute' to reduce swelling and pain. Always consult your vet for advice.

New Fact Sheet - Fact Sheet No 53: New Strategies in Worm Control is now available. It discusses the problem of build-up of resistance to current worming compounds and outlines measures which should be adopted to maintain effective control of worms, as there are no new worming compounds becoming available for horses. If you would like a copy, please email Gary at **newsletters@kohnkesown.com** or alternatively, visit our website www.kohnkesown.com to view it in colour under the Fact Sheet section.

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Common Eye Diseases – Quick Action is Essential

Injuries and diseases of the eye are relatively common in horses, with damage to the cornea and subsequent infection with microbial organisms one of the least likely to get better by itself without prompt and targeted therapy. In most cases, injuries to the surface of the cornea are easily recognised, but prompt treatment is essential even for seemingly minor injuries to reduce the risk of corneal infection, erosion, ulceration and healing with scar tissue.

A horse's eyes are its primary sensory organ by which it recognises approaching danger and reinforces its sight with smell and sound. Any injury to the eye which results in clouding or permanent scarring of the corneal surface can seriously affect a horse's working ability and constitute a major unsoundness of purpose in a riding horse.

The most common eye problems are corneal injuries, conjunctivitis and lacerations to the lower eyelids. Sarcoids are also relatively common around the border of the eye socket and lids. An immune mediated eye disease, uveitis or historically referred to as periodic opthalmia or 'moon blindness', with increased sensitivity to UV light and photophobia, also appears to have an increasing incidence.

Did you know that...

Horses have binocular vision, with the ability to see forward with both eyes just like humans, apes and dogs for example, and also monocular vision with separate fields of view in each eye to the front or sides. The horse reinforces its direction of sight by positioning its ears to detect sound in the same direction – both ears and eyes look forward during binocular vision, and each ear will follow the line sight of each independent eye in monocular vision. When approaching a jump or gauging height or distance of a moving object or person, a horse will move its head up and down to allow a better focus using binocular vision. Breeds of horses, such as Arabians and Thoroughbreds, or their crosses, have more prominent eyeballs and are considered to be able to see in a wider arc or field of view, as compared to individuals or bloodlines with more prominent eye orbit bones, often referred to 'sunken' or 'pig' eyes.

Corneal Injury and Infection

Physical trauma to the head and eyes can abrade and damage the delicate transparent corneal surface. This results in symptoms of severe pain with closure of the eye, clouding of the cornea, increased sensitivity to light (photophobia), repetitive blinking (blepharospasm), tear overflow (excess lacrimation) and if not treated promptly, infection with a mucus-pus discharge from the eye. Inflammation of the cornea is referred to as keratitis, and if the corneal surface becomes eroded and severely infected, it can quickly develop into an ulcerative keratitis.

Causes

Corneal injuries are relatively common in grazing horses, especially horses or ponies with more prominent eyeballs, due to lacerations on dry tall grass as the horse grazes; abrasion by thistles or nettles; barley grass seeds caught in the eye lids which scrape the cornea, and in horses eating hard feed, adhesion of chaff particles to the cornea if a horse snorts and blows feed into its face when feeding from a bin. In racing and working horses, particles of sand may be flicked up from the track or arena surface and scratch the corneal surface as a sharp-edged foreign body and allow invasion by bacteria and other microbial organisms. Pollen allergies can cause an initial conjunctivitis, which if not treated, can swell the eye membranes and irritate the cornea as the horse blinks repeatedly. When combined with 'fly worry' as germ laden flies are attracted to the increased moisture around the eyes, secondary bacterial infection is a common result. Pseudomonas species bacteria, which are common contaminates on damp tall grass and in dam and even tap water, are most invasive as they proliferate rapidly and can quickly result in corneal ulceration and in severe cases, full thickness erosion and corneal rupture and iris profusion (prolapse), resulting in blindness.

Handy Hint 4

How to Apply an Eye Ointment

You may be required to instil an antibiotic eye ointment twice daily into the eye to help control a corneal infection following an eye injury. Firstly, place the tube of eye ointment in your pocket for 5 minutes to warm it up and make it less viscous. It also makes it more comfortable to apply the ointment at body temperature rather than being cold. Hold the eye lids apart with the thumb and forefinger and deposit a small 'bead' of ointment in the trough formed by the lower lid. Do not try to deposit the ointment or eye drops directly onto the cornea as the horse will pull away or blink, or you may touch or jab the cornea if the horse moves. Then distribute the ointment over the cornea by holding the eye lids together and gently massaging the lids for 2-3 seconds. In most cases, you will not require a nose twitch to hold the horse's head steady. Before each new application, gently wipe any old residue of ointment away from the edge of the lower lid with a soft, moist tissue.

A Simple Eye Patch

An old bra (no under wires), with one cup and a shoulder strap removed, makes a handy, practical eye patch. A 'D' cup size is best with some elastic stretch remaining to maintain the cup shape. Tie the remaining bra straps to the noseband and across the head below the ears to the halter strap. The short bridging point between the original 2 cups of the bra is attached to the halter, positioned midway between the ears and throat latch. A small strip of elastic adhesive tape can be used to hold the bridging strap in place on the halter strap. A black bra cup is helpful to keep the light out. It allows the horse to still see with its 'good' eye, without being shadowed by a conventional mesh fly mask if fly worry is not a problem.

Handy Hint 5

Diagnosis of a Corneal Ulcer

Your vet should be involved in confirming the severity of a corneal ulcer by use of a fluorescent staining strip to identify the borders of the ulcer, although ulcers already healed will not take up the stain and may complicate the diagnosis. A swab taken of the ulcerated area is helpful to identify the type of microbial contamination, including bacterial and fungal organisms, combined with a bacterial antibiotic sensitivity test to determine the most appropriate antibiotic therapy, or fungicide in the case of a fungal contamination. Initial broad spectrum antibiotic therapy may be advocated at the time of examination to control any further secondary infection, but ideally a microbial culture (e.g. cytology) is essential to identify the exact causative organism, so that no further delay to controlling an erosive microbe is taken which could otherwise endanger the long term health of the eyeball, or compromise the horse's sight, as a result of excessive fibrous scarring of the cornea as it heals.

Treatment

The treatment is a job for your vet, even if you have leftover ointment or a pinkeye patch or spray used for cattle and sheep. Horse's eyes are much more delicate and clear vision is essential for use as a riding horse. More extensive ulceration is best managed by suturing the eyelids partly closed to cover the ulcerated area whilst allowing the horse to see with restricted vision . In more severe ulceration cases, your vet may create a conjunctival flap to provide mechanical protection to the cornea and encourage healing by increased blood flow and minimise risk of adhesions forming on the corneal surface. Aspergillus species fungi are a common contaminate of the cornea following laceration with abrasive plant leaves or spines or hay. In this case, a fungicidal ointment or eye drop medication will resolve a fungal-induced ulcer.

Handy Hint 6

Check if the Cornea is Cloudy

The cornea often appears to be cloudy, with a pink or white discoloration relative to the type of microbial invasion, as it becomes inflamed and opaque during the early phase of corneal infection. If the cornea appears cloudy, it is most likely due to increased corneal moisture with loss of transparency and blurred diminished vision. Do not attempt to treat the ulcer by flushing with water as it will introduce ulcerative organisms such as Pseudomonas. Do not use left-over corticosteroid eye ointment as the drug is likely to increase the risk of ulceration by reducing corneal immunity and natural resistance to infection. It is best to take the horse indoors out of direct sunlight and cover the affected eye with a fly mask or an old bra (Refer to handy Hint 5) and contact your vet immediately. Corneal damage very rarely heals by itself without targeted therapy and often the horse can further traumatise the irritated, painful eye by rubbing its head on its leg, a tree or stable wall.

Restricted Vision following Corneal Scarring

It is common for the cornea to heal with a patch of white scar tissue if the ulcerated area is not treated promptly with an appropriate medication. Although the fibrous scar tissue shrinks as it heals to reduce the surface area covered, the opaque scar tissue can block vision and result in a horse developing a 'blind spot' on the surface of the cornea. This may be accompanied by an increase in blood vessel invasion (neovascularisation) which spreads out like a web over the cornea surface. This can be limited in area by special drug therapy - consult your vet for advice. Generally, if the scar area is in the centre of the cornea, the horse will be more likely to have severely restricted and blurred vision and therefore be unpredictable due to the 'blind spot'. If the scarring is on the periphery of the cornea, the 'blind spot' is usually less likely to affect the vision, although the field of view normally visible through the area may be reduced and result in a 'blind spot' when the horse is approached from the side on which the scar is located.

Handy Hint 7

How to Remove a Piece of Chaff adhered to the Cornea

Occasionally, a particle of finely chopped white chaff will be blown into an eye when a horse snorts when feeding and adhere to the cornea. It can irritate the conjunctiva, causing swelling, repeated blinking and excess tear flow as the eye attempts to flood the surface of the cornea to dislodge the foreign body. It will also abrade and introduce microbial infection to the surface of the cornea by repeated blinking. You may need to nose twitch the horse to help hold its head steady. Carefully examine the cornea in a well lit area by holding the eye lids apart with the thumb and forefinger. If the chaff particle appears to be covered with a thin film of mucus and adhered strongly to the cornea, then call your vet to have the particle removed with a warm saline flush and a follow-up course of an antibiotic eye ointment. If the particle appears to be more mobile, close the eyelids with the fingers for 3-5 seconds and in most cases, the flood of tears will lift the particle off the cornea and transport it to the edge of the lower lid where it can be gently removed with a soft, damp facial tissue. Do not attempt to grasp the particle with tweezers as you may poke the eye and damage the cornea. It is a good idea to feed rough cut or long chop chaff to minimise the risk and also encourage chewing and salivation to help improve overall digestion.

Handy Hint 8

Conjunctivitis

In most cases, swelling and reddening of the conjunctiva, the membranes lining the eyelids and around the eyeball, is often caused by an allergic reaction to feed, dust, grass pollen, high levels of ammonia in the stable, galloping into very cold early morning air and foreign bodies such as a grain of sand flicked up into the eye or an insect adhered to the cornea when grazing or galloping. Immune reactions to foreign bodies can also result in conjunctivitis. Bacterial infection can be introduced by flies following trauma to the eye, as well as certain parasites and result in conjunctivitis and corneal damage. In northern areas, larvae of the Habronema species stomach worm are spread by flies and an entry point into the horse's body can be through the prepuce, a skin laceration (which results in a 'swamp cancer' growth as the wound attempts to heal) and lips and nostrils, as well as via the conjunctiva. The tissue damage caused by the burrowing larvae and introduced infection, results in inflammation and swelling of the conjunctiva due to an intense immune reaction to the larval invasion around the third eyelid as it is a site of eye lymph tissue defence. Onchocerca spp larvae spread by biting insects, such as mosquitoes which feed around the eyelids, can also result in immune reaction with invasion of characteristic eosinophil allergic reactive cells into the conjunctiva.

Horses suffering from the common Herpes stable virus (EHV-1 or EHV-4) can also develop conjunctivitis, similar to cases of viral 'colds' in humans, with 'bleary' eyes and excess tear production.

Often conjunctivitis is associated with keratitis or corneal ulcers and uveitis. If corneal reaction is suspected, fluorescein staining should be carried out to identify corneal damage. As conjunctivitis often is associated with corneal irritation, a course of antibiotic ointment will usually resolve the reaction in 2-4 days. In more severe cases, swelling of the conjunctiva or infection with bacteria introduced by flies, often produces a thin 'pus' like discharge, which can block the drainage tube from the eye and result in overflow of tears and collection of white flecks of 'mucopus' in the inside (medial or nasal) corner of the eye around the third eyelid.

Uveitis

The uveal tract includes the iris (around the pupil), ciliary body and other internal membranes within the eye. It can occur, secondary to corneal reactions (keratitis), but it may be associated with an immune-mediated reaction, which appears to be intensified by the UV waves in sunlight.

In most cases, affected horses develop 'cloudiness' within the eyeball, with excessive blinking and tear flow. If left untreated, it can result in blindness with shrinking of the eyeball and development of cataracts in long standing cases in older horses.

If you notice a 'cloudy' appearance within an irritated eye, rather than an opaque appearance associated with surface corneal reaction, it is essential to seek advice from your veterinarian.

Anti-inflammatory medication, immunomodulators and drugs, such as atropine, to induce pupil dilation to reduce pain and improve drainage within the eyeball are all used to treat uveitis. It is also essential to ensure that a dark mesh fly mask is fitted when the horse is grazing under sunny conditions. Unfortunately, uveitis often recurs and it is important to regularly monitor a horse with a previous history of uveitis. It is now regarded as an 'unsoundness' during a vet examination for sale, as there is a risk of reduced vision, continuing episodes and eventual blindness.

Did you know that...

The upper edges of the iris which form the horizontal elongated pupil with the eyes of horses, are bordered with irregular black 'curtain' like membranes (called corpora nigra or black bodies) which hang down within the pupil. These are thought to scatter excess light and control the glare of sunlight as a horse grazes, so that the horse can see more clearly – a bit like using internal sunglasses. They can increase in size as a horse ages, but rarely develop cancerous growth or interfere with vision.

Other Eye Diseases

Diseases of the lens, with development of cataracts as a horse ages are relatively rare, but certain breeds of horses including Quarter horses and Appaloosas appear to be more likely to develop lens cloudiness as they age. It is also possible that horses with insulin resistance (type II diabetes) have an increased risk of developing cataracts.

Retinal diseases are also very uncommon, but retinal detachment has been suspected of being heritable in some bloodlines of Standardbreds and Thoroughbreds. Any horse with symptoms of poor vision, although the cornea and pupils appear clear and normal, should undergo a thorough internal ophthalmic examination by a specialist ophthalmic veterinarian.

Sarcoids

Any growth of tissue around the eye is most likely to be a sarcoid. Sarcoids usually enlarge slowly and often the hair is lost over the growth. Quarter horses appear to have a higher risk of developing facial sarcoids. A thorough

Minimise Allergic Reaction in the Conjunctiva

If you have a horse which develops repeated episodes of conjunctivitis, it is a good idea to dampen all feed and avoid pasture grazing, especially on flowering ryegrass pastures for a few days to limit any possible allergic reaction. Always dampen ryegrass hay to remove pollen and dust allergies. Dusty working surfaces will also trigger allergic conjunctivitis in some horses, which often settles down after rain or after watering the arena. In some cases, conjunctivitis occurs without any known allergic or irritant trigger.

Handy Hint 10

Handy Hint 9

Checking if the Eye Drainage Duct is Blocked

If tears continuously overflow from the lower lid or the medial side of the eye down the nose, application of drops of fluoroscein stain is a useful way of checking whether the nasolacrimal duct (the drainage tube from the medial (nose side) of the eye to the inside of the nostrils) is blocked. The fluorescent dye will be seen seeping out of the exit just above the pink border in the nostril if the duct is clear, but not if the duct is blocked by 'mucopus' or other exudates from infection. Where the nasolacrimal dust is blocked, mechanical reverse flushing with saline by inserting a fine tube under local anaesthetic into the exit 'puncta' on the upper inside opening of the nostril on the affected side, can be carried out by your vet with the horse restrained.

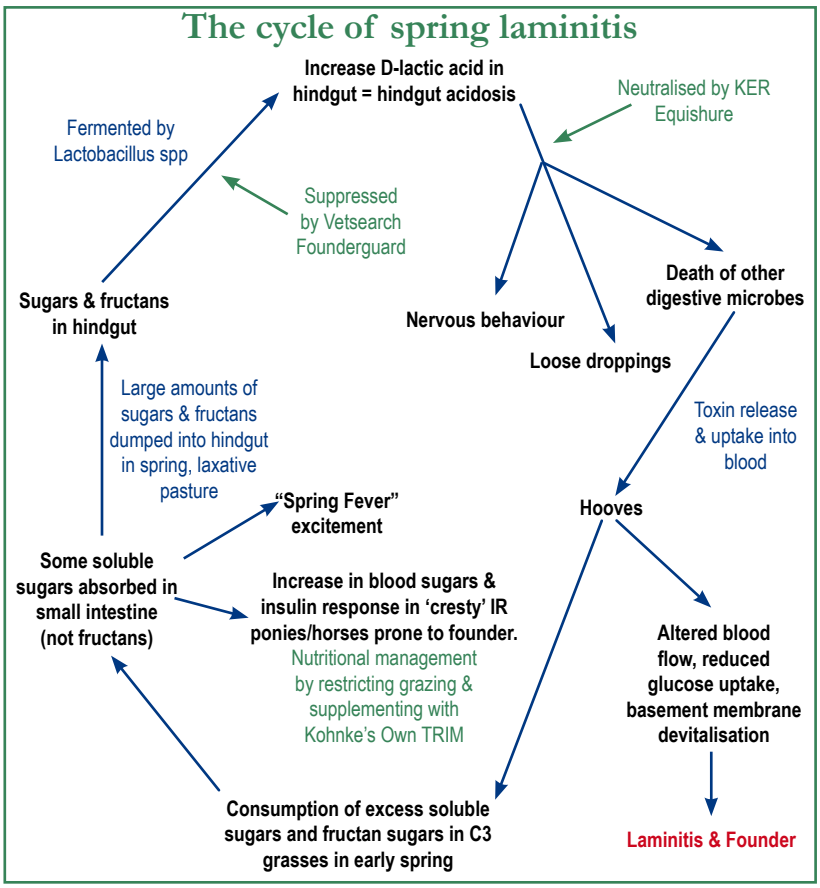
examination should be carried out by your vet. **Note -** Sarcoids were reviewed in E20. Email Gary at newsletters@kohnkesown.com for a copy.

Lacerations of the Eye Lids

The lower eye lid in particular is prone to lacerations on fences, feed bins or sticks when grazing, or if a horse rubs its head on a tree. The excellent blood supply to the conjunctiva promotes rapid healing of lacerations, which often appear worse initially, but start to heal in 2-3 days. Your vet may prescribe an anti-inflammatory (eg 'bute') in severe cases to limit pain and tissue swelling where the lower lid is torn and hanging down. It is best to have the lid edges sutured back in place to realign the lower border as promptly as possible by your vet. This will not only avoid devitalisation of the lid edges and leaving a gap in the lid, but also improve the cosmetic repair and avoid continuous overflow of tears down the face and associated fly worry which is likely to introduce infection to the eye. If the laceration is small, then it may heal itself if it is kept clean and the eye is medicated daily with antibiotic ointment as prescribed by your vet. However, it is important to check that the opposing edges of the lids rejoin without distortion and inversion of the conjunctival lining, as it will heal as a fault or a 'nick' in the lower lid which will allow tears to overflow. In this case, consult your vet for advice.

Spring Laminitis – be aware and be prepared

Spring is the recognised season for laminitis and founder. Cold weather (C3) grasses growing under the warmer, sunnier conditions of spring produce higher quantities of soluble sugars and 'fructan' sugars during daylight growth hours between 10am to 4pm. However, the cool over night conditions in early to mid spring do not allow these sugars to convert to structural carbohydrates and plant tissue over night to allow plants to grow. They accumulate in the plants leaves and stems and when grazed by horses and ponies in subsequent daylight and overnight periods, can result in excess uptake of soluble sugars from the small intestine into blood, as well as the overload or 'dumping' of excess soluble sugars and 'fructan' sugars into the hindgut, where they are rapidly fermented to D-lactic acid.



Horses (and humans) do not have an enzyme in the small intestine which can digest and split 'fructans' in grass (or fructose sugars from fruit in humans) into absorbable glucose, so large amounts of these pass into the hindgut. Certain Lactobacilli species of D-lactic acid producing bacteria in the hindgut are able to digest these sugars, producing D-lactic acid and gas from fermentation. The concentration of D-lactic acid - a non-absorbed, non-metabolisable acid compound, builds up as 'fructans' (and excess sugars) are overloaded. It irritates the bowel wall to increase motility (resulting in soft droppings and diarrhoea), as well as lower hindgut pH to develop hindgut acidosis. Higher acid concentration suppresses and kills other digestive microbes, releasing toxins which are readily absorbed into the bloodstream through the compromised gut wall. These trigger blood flow reduction, hamper glucose uptake and result in basement membrane attachment failure between the hoof wall and pedal bone within the hooves - all resulting in laminitis and progression to founder where internal collapse and pedal rotation can occur. Insulin-induced laminitis (insulin resistant animals with EMS) can be minimised by limiting grazing, providing soaked hay and supplementing with **Kohnke's Own TRIM**.

Management Hints to Minimise Laminitis

- Limit grazing to between 8am-10am when grasses (especially ryegrass, fescues, cooksfoot and clovers) have the lowest 'fructan' and soluble sugar content.
- Prevent pasture access during bright sunlight hours 10am-4pm – either confine the horse to a yard with hay (soaked for 'cresty' IR horses and ponies), or fit a grazing muzzle to prevent excess grazing.
- A short turn out between 4pm-6pm, with a small feed of hay to reduce appetite before turning out ,is usually safe as excess consumption is unlikely.
- Confine horse or pony to a yard or small grazed off area with hay overnight

Note - Although the levels of 'fructan' sugar, soluble sugars and non-structural carbohydrates (NSC's) in growing plants decrease overnight, horses and ponies can graze up to 40% of their total daily intake in the first 3-4 hours in the evening due to natural grazing habit. It is therefore best to restrict grazing overnight in high risk horses and ponies, especially those which are overweight or have a 'cresty' neck and excess tail butt fat deposits.

- Supplement with Founderguard or Equishure each day in a small hard feed to limit hindgut acidosis. **Kohnke's Own TRIM** will provide nutrients which have a role in glucose metabolism and insulin activity in IR or EMS affected 'cresty' horses or high risk animals.
- Consult your veterinarian for advice.