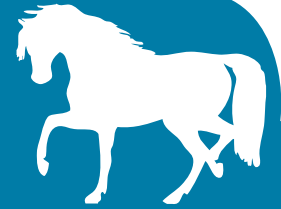


# Waitara Pony Club Newsletter



NOVEMBER 2010

The silly season is upon us, and with it come busy times. Many of us – or most defiantly I do, turn the horses and ponies out for a week or so to a) have a bit of a break and b) give the horses a mid season rest so they don't putter out from over work before the cold seasons hit.

I must stress again the importance of hoof care with the oncoming hard ground, whispers have it that we are in for an extremely dry summer and that equals hard ground. For those who are going to be doing lots of competition on the hard ground – it is a excellent idea to start conditioning the horse to harder surfaces by doing road work (walking and trotting on the road) or hard track or races on farms. By starting now with conditioning you will help the horse model its legs and the legs structures response to hard ground and can help prevent lameness later on. If you want to know more on conditioning to hard surfaces or bone/tendon modelling flick me an email.

And with the silly season already starting I remind you that we need your help on the 18/19th of December. Coming out next week will be two programs – one for our Closed ODE (which means only WPC members can enter) and one for our Training ODE – this is open to all riders and will take a mammoth effort from our club to run.

*Pip Bint, President*

## THIS MONTH

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The Tack Shack in  
Motoroa is now open  
Saturdays!  
10am - 1pm

## WANTED

### Hay wanted urgently

5-6 square bales, last years preferred.

Ph Mel 757 2882 or 021 074 2016

*If you have any items you would like listed for sale or wanted you can contact me directly at [melclark44@hotmail.com](mailto:melclark44@hotmail.com) to have it listed in the monthly newsletter. Please have details and any photos in by the 16th of each month. Newsletters will go out around the 18th.*

## 9yo 13.2hh Pony Mare (Crossbred) (Trademe #331800614)

Lightly Hunted, jumps hedges, wire and spars. (was nicknamed the jumping flea!)  
Done 60cm ODE, SJ up to 80cm & extensive  
Will be capable of jumping much higher, has jumped well over a 1m playing around in Indoor arena.  
Mounted Games (great to vault on and off)  
Great to trek/ in company or alone  
Great for opening gates off

Winning Team Turangi Genesis Games 2009  
Been to PC Games and HOY Mounted Games \*2  
Heaps of MGA placings in lower north island

Good to float, trim, clip, handle, sometimes need feed to catch.

Ideal Project pony for teenager.

Forward moving pony who would need a confident rider, not first pony! Has a lot of potential as a PC alrounder, a lot of untapped jumping potential.

In Light work.

Genuine reason for sale as rider has completely over committed themselves and the pony is going to waste in the paddock.

Priced well below as really want this pony to go to a new home to be used!

**\$3000 plus GST**

06 754 7176 or 027 243 2869

## 13.2hh 7yo Quarter Horse/Appolloosa Pony Mare (Trademe #331802315)

Done 60cm ODE, SJ up to 80cm & extensive Mounted Games (great to vault on & off)  
Great to trek/ in company or alone  
Great for opening gates off  
Been to a few hunts and jumped spars  
Been placed in handy hunter

Will be capable of jumping much higher

Winning Team Turangi Genesis Games 2009  
Been to PC Games and HOY Mounted Games  
Heaps of MGA placings in lower north island

Good to float, trim, clip (did use a calming paste), sometimes need feed to catch. She can be a little bossy on the ground, nothing major.

Forward moving pony who would need a confident rider, not first pony! Can easily carry an adult.

Recently been to Opunake show and did SH & SJ up to 75cm clear.

In Light work. Make great project pony for a teenager.

Genuine reason for sale as rider has completely over committed themselves and the pony is going to waste in the paddock.

**\$2500 Plus GST**

## 17" Wintec Pro Jump Saddle

Interchangeable gullet  
(have narrow and medium size)  
Cair Panel  
Good condition  
Unmounted

**\$500.00**

## 17" Chevalier GP Saddle

Medium gullet size  
Good condition  
Unmounted

**\$150.00**

## 17" Status GP Saddle

Medium gullet size  
Good condition  
Unmounted

**\$150.00**

Phone 755 1361 or caylee.aspden@halliburton.com

## Dressage saddle

17.5, Black

**\$1000.00**

Phone Helen 754 6385

## 17.5" CTD "Soniera" Flat seat jump saddle

very smart Black with yellow stitching. Ex cond. Med gullet. Small flaps with blocks in front and behind leg to help maintain good leg position. Rider out grown.

**\$1,000**

Phone Bernie 027 413 1980 or 06 756 9188 eve

## Lessons & Arena Hire

60m x 20m all-weather arena; show-jumps; easy vehicle access; tie-up and wash-down area  
Riding & horse mastership lessons: \$20  
Arena Hire: \$5/horse

Nicola Ekdahl

752 2523 / 021 445 753 / wade\_nik@vodafone.co.nz  
17 Thomason Rd, Egmont Village

## Free Tb mare as a broody

16 years chestnut with blaze, 15hh. Is giving as in their old float she kicks out at back door, rubs her tail on ramp. Owner believes would be better in a new float. No time wasters or leaner ppl.

Please contact selena on 027 740 8679

# ASPECTS of PASTURE that can ADVERSELY AFFECT YOUR HORSE

Until recently I had no idea of the impact that various aspects of the pasture can have on the health and temperament of our horses. Go thru the list of symptoms carefully. As you read, light bulbs will go on for you regarding horses you currently own or know of, or have owned or known in the past. You too, will realize how countless, perfectly good horses have suffered, been punished, become 'problem horses', caused accidents, labeled 'bad', 'nuts', 'unmanageable', deemed unrideable, diagnosed with brain tumours, wobbler syndrome, and sent to the knackers, all because of the grass!!!!

This information provides an explanation for many things going on with our horses where extensive investigations have previously failed. It comes from years of my own personal observations and experiences and those of the hundreds of horses and riders I have met and assisted over the last 10 years of teaching Horsemanship throughout NZ. Additionally, in the spring of 2004 I conducted the "Equine Health & Behaviour Survey", the results of which have been very revealing. Horse owners frequently experience unexplained changes in their horse's temperament and personality. If you are like me and believe that horses do not 'plot against us' and are definitely NOT 'dirty' 'nutty', 'mongrels', 'bitches', 'pigs', 'f.....g cows', 'have got attitude' (the list goes on!), then there must be other reasons for this kind of behaviour. There is a strong correlation between the soils and pasture and the raft of health and behavioural problems our NZ horses are plagued with, some mildly, some chronically and sometimes acutely. Aggressiveness, herd-bound behaviour, pasture heaves, obesity and laminitis are just a few that spring to mind. For example things have been going great with your horse, and then he starts spooking at things in the arena, or rushing out of the float, or you are paying for a lesson and he's not 'himself', so it's a complete waste of money, all of these sorts of things. He doesn't like being touched or brushed..... I've had the saddle fit checked but it's still like he's got a sore back..... Why do some horses bleed from the nose when they're out at pasture?? What is the cause of head-shaking/flicking? Why can't I get rid of that mud-fever? How come my horse has got sore feet? Goes to bite me when I'm doing up the girth? I'm feeding my horse heaps but he won't put on any condition... My horse is on 'nothing' but I can't keep the weight off..... What is the cause of many respiratory troubles? Skin troubles? I believe the answers to these questions and many, many more, lie within the following information.

*(The following information is not intended to replace veterinary advice, merely to give you an overview. If symptoms are acute, or persist, call your veterinarian)*

- Overview
- Signs of Myco-toxicity/ Mineral Imbalances
- Respiratory Problems
- Nose-Bleeding
- Skin Conditions
- Mineral Imbalances Especially Magnesium Deficiency
- High Sugar / Lack of Fibre
- Fibre Requirements According to Lifestyle
- Why Add Fibre
- How Much Fibre
- B-Vit Deficiency is Caused by a Lack of Fibre
- Selenium
- Photo-sensitivity – the Real Cause of Sunburn and Mud-Fever
- Head-flicking/Shaking



## An Overview

In New Zealand horses are either kept on pasture primarily meant for other stock like sheep or cattle, or on paddocks grazed by horses alone. Both situations lead to problems.

The former consists of **high production** grasses (eg the rye/clover mixes) which, because of our climate and the fertilizer regimes applied to them, reach even higher production. This is counter-productive to the health of the horse, whose digestive system is highly specialized and different to other species. Their natural diet of grass, herbs, shrubs and leaves is RICH in fibre and POOR in carbohydrates.

**High production** grasses are LOW in fibre and HIGH in sugars and carbohydrates. Whenever the grass grows quickly, which is mainly in spring and autumn, but also at many other times of the year in our climate, it leaves the essential minerals behind and becomes deficient, most obviously in magnesium.

Fertilising with super-phosphate, urea, or nitrates accelerates growth and causes plants to be shallow rooted and therefore less able to uptake minerals from deeper in the soil. It also lowers the pH (acidifies) the soil and pasture. In healthy soil there needs to be the right balance of fungi to bacteria. **The lower the pH, the more fungi and the less bacteria. Fungi really thrive in these acid conditions. Rye-grass also loves a lower pH. This IS the root cause of why MYCO-TOXINS and MINERAL IMBALANCES are such a big problem. See below.**

Add to this the fact that that paddock of green, growing grass your horse is grazing is the equivalent of a bowl of sugar! Then we go to the feedstore and buy more sugar in the form of molassed grains. No animal stays healthy for long when their diet is predominantly sugar. This high sugar/carbohydrate, low fibre intake leads to amongst other things (See Obesity) an impaired insulin response, contributing to insulin resistant and 'diabetic' horses and ponies which are prone to laminitis and eventually the Cushings-like syndrome. It also leads to restricted peripheral circulation (eg in the hooves) and hind-gut acidosis, which has much more serious consequences than the horse just having runny manure for a few days!!!

Many horses graze pasture that is termed 'horse-sick' because it is never fertilized or attended to. It will likely have a low pH (docks, gorse, blackberries and other undesirables love this environment) which, as already mentioned, also suits the endophyte rye-grass and fungal populations in general and also tells you loud and clear that the soils lack, amongst other things, calcium and magnesium.

Add all this to the fact that perennial rye-grass, containing endophyte fungi that produce mycotoxins that are known to affect the health of stock, is the dominant grass species throughout New Zealand. In actual fact myco-toxins are present, to varying degrees, on and around ALL plants everywhere, including legumes. (I am told by a researcher at Kimihea that the rye-grass of North Canterbury is a particularly virulent strain) Stress on the grass caused by drought, or being eaten by an insect or an animal, causes myco-toxin production to go even higher.



Red Clover



White Clover

## What are the Signs of Toxicity and/or Mineral Imbalances?

Because both these tend to happen unpredictably and simultaneously, especially coinciding with flushes of pasture growth, it can be difficult and fruitless to try and differentiate so it is best to address both issues regardless.

- **Toxins are ones that have been ingested with pasture or feed (They respond to a toxin-binder or removal from pasture)**
- **Mineral imbalances are complex and it is important to consider the inter-relationship of them all, however malnourishment of the macro-minerals such as Calcium and Magnesium have very serious consequences. They definitely require urgent attention in the short term in the form of appropriate supplementation.**

Meanwhile if your horse exhibits any of the following then it is highly likely he is 'affected' by his diet, in particular the grass he is eating.

<p><i>Often starts with:</i> General 'tetchiness', an unwillingness to be touched, or tensing up and reacting when touched, especially around chest and thorax</p>	<p><i>Staggers:</i> Heavy on the forehead, stumbling over nothing Standing 'base-wide' Difficulty backing up, out of floats etc Discomfort walking downhill Slightly drunk or 'zonked' looking Head twitch Uncoordinated movement, staggering, giving out in the hind-quarters</p>
<p><i>This can cause:</i> Cinchiness/girthiness, not standing for saddling/mounting general crabbiness when ridden, pinning ears, swishing tail etc. tightness, tenseness, impulsiveness, wanting to run off, can't use your legs reaching around to bite the girth when ridden</p>	<p><i>Heat stress:</i> Instantly overheats when you put the cover on Running madly around paddock for no reason (while other horses aren't) Slamming into fences/gates Excessive sweating, white sweats, smelly sweats, sweating in unusual places, eg on top of rump, patches on upper neck General agitation Fence walking</p>
<p><i>Progresses to:</i> Touchy around ears Flings off suddenly when haltering Difficulty with bridling Sore across the loins Uncharacteristic bucking when first moves off with girth tightened Discomfort when walking downhill Excessive aggressiveness towards you or other horses (viciously biting you, attacking, hounding other horses, you think they're a 'rig') Excessive herd bound behaviour (eg screaming maniac, irrationally attached to another horse) Can exhibit both these previous two 'opposite' behaviours concurrently!! Bucking (quite violent and "out of the blue") Bolting off in short bursts 'Ballistic' behaviour</p>	<p><i>Head-Flicks:</i> Like a bug has flown up their nose, can be worse on sunny days</p> <p><i>Colic:</i> When autopsy shows hindgut necrosis due to vaso-constriction of blood supply to the intestine (too late to try a toxin-binder)</p> <p><i>Reproductive:</i> Raging seasons, not cycling properly Difficulty getting in foal Abortion Prolonged gestation Reduced milk production Weak suckling by foal</p>
<p><i>Hypersensitivity:</i> Excessive spookiness/alertness Shies away when approached, hard to catch 'Spaced out', 'wired', 'not there', hallucinating Eyesight seems to be affected, can't judge jumps Overly claustrophobic (reluctant to ride close to the arena wall, rushes off the float etc)</p>	<p><i>Ill-thrift:</i> Chronic dull/rough coat Won't put on weight, looks wormy but not, no topline Consistently small, frequent manure Scours/diarrhea Lifeless eyes, dull, nobody home No energy, lethargic Falling asleep on thier feet (like narcilepsy)</p>

## Myco-toxins

These are produced by various types of fungi. Some of these fungi live inside the plant and are called endophytes. Perennial rye-grass which is the predominant grass in New Zealand contains endophytes which produce two very harmful myco-toxins, namely lolitrem B and ergovaline.



**Perennial Rye-Grass**

Make it your business to be able to recognize these grasses. When not in seed, the rye-grass is characterized by narrow, dark green, shiny leaves.

The rye-clover pastures seen on most NZ farms is nothing short of disastrous for horses and will cause you nothing but Trouble! Clover is 1/3 higher in sugar and starch than grass. All rye-grasses are high sugar grasses therefore even when they have had the endophytes removed as in low or zero-endophyte strains they are still not suitable for horses.

Compare the lower picture with the one above. Horses thrive on the high fibre diet. Have you ever noticed when the grass browns off in the late summer that horses 'bloom' and are 'easier going'? Same in winter when they are eating more hay and the grass is not growing at all or very slowly. The following is a picture of a horse in blooming health with excellent feet. He was just rounded up off the country pictured above. (The brown one!)

Equally dangerous are the myco-toxins produced by fungi that live on the outside of plants and in the surrounding soil, especially on the seed heads and in any decaying matter. You will perhaps have heard of the ergot, rust molds and facial eczema spores. Maybe even of Aspergillus, a known asthma allergen in humans.

Until recently, we horse owners didn't take too much notice of fungi in our horses' environment, apart from knowing not to feed moldy hay or feed. Because they are usually invisible, and myco-toxins do not show up in blood tests, it has taken awhile to make the connection between many health and behaviour problems in our horses and these insidious equine trouble-makers!!

Our climate in NZ, and the generally low pH of the soils, means the conditions are frequently very favorable to the explosive proliferation of fungal spores and myco-toxins. If you happen to live anywhere near any orchards you



**Paspalum**



will know how often they spray for fungi. You will have seen molds suddenly appear on horse manure from time to time. Fungi love acidic conditions, so pasture fertilized with traditional super-phosphate makes an ideal environment for them.

The lifestyle of the typical kiwi horse means they spend most of the time out grazing the pasture. Consequently they are inevitably ingesting and inhaling vast numbers of fungal spores and myco-toxins 24/7. Not just at certain times of the year, but any time the conditions favor fungi!

It is no surprise that the results of the "Equine Health & Behaviour Survey" fit with this information. The horses with the most, and severest symptoms are invariably grazing the 'improved' pastures, especially the rye/clover mixes. Of these, most are also being fertilized with super. However, there are some horses with severe symptoms that live on rye-grass pasture that hasn't been fertilized in 10 years, and some that graze 'low-endophyte' pasture and still show symptoms. Thousands of horses throughout New Zealand suffer, for many months of the year, from an array of the symptoms listed below.

All of the 'severe' cases have exasperated owners who have spent many hundreds, sometimes thousands of dollars investigating other possible causes. They have had numerous blood-tests (which time after time come up clean), equine practitioners of all descriptions, multiple saddle fittings and sometimes up to three new saddles, horse dentists and hoof trimmers. Finally they hear about feeding a toxin-binder (a completely natural food that locks on to toxins in the horses' intestine, prevents them from going thru the intestine wall and into the bloodstream, and carries them out with the manure). Within days they are astounded at the difference in their horses. Even their husbands notice improvements!!

Due to the fact that there are hundreds of different myco-toxins lurking in and around all pasture types throughout New Zealand it is no surprise that the above scenario is very common. Because feeding a toxin-binder is simple, comparatively inexpensive, and totally safe, it would seem logical to go down this avenue along with addressing mineral imbalances, first if any of the above list of symptoms arise in your horse.

## Respiratory Problems

**May be caused by Inhaling Toxins and Pollens which are Allergens.**

***These symptoms therefore don't respond to a toxin-binder:***

- inflamed nasal membranes
- 'runny' noses, gunk in the corners of their eyes
- blisters/ulcers up the nose (swabbing proves negative for Herpes)
- coughing in paddock and/or on exercise
- excessive snorting
- breathlessness, out of 'puff' after very little exertion, can't get fit
- wheezing
- 'gunk' out of one or both nostrils periodically
- nose-bleeding when at rest out in the pasture

Many horses suffer from one or more of the above symptoms, some to the point where they are retired or their careers cut short. Once again extensive investigations which involve scoping, blood tests, etc are often fruitless and expensive.

On a sunny day, hold your horses' nostril open towards the sun and look up the nasal passages. Hopefully it is pink and clean looking. If it looks inflamed, or looks yellowy and bumpy, or there are little 'blisters' or even larger ulcerations, then your horse could have one of the allergies we are talking about.

When you think about it horses have their noses down in the grass eating most of the time. Whilst they are eating they are also breathing. There are quizzillions of fungal spores in the grass which get sucked up their noses. For instance spores from the rust molds and aspergillus fungi, both very common on our pastures, are known to cause hay-fever and asthma in humans. It stands to reason that some horses will also have allergic reactions to them. In fact some of the symptoms in our horses are very similar to asthma in humans.

If your horse has the laboured or noisy breathing, (symptoms similar to asthma), then he is suffering from constriction of the airways. Remember that magnesium is a natural dilator so keeping magnesium levels right up there is hugely beneficial. (Major clue)

Pasture with any length to it creates the ideal

### Toxin-Binders Explained

A toxin-binder helps to protect the horse from the toxins which can cause ill-health..

It is NOT a cure. It merely locks on to the toxin, making it too large to go thru the intestinal wall, thereby preventing the toxin from getting into the bloodstream of the horse. Sometimes, when the climate favours proliferation of fungi, or grazing hard means horses are eating the base of the plant\*\*\*\*, or when seed heads are present, the toxin-binder has its work cut out and you will need to up the dose, or completely remove the horse from pasture until the symptoms subside. \*\*\*\*(this causes the plant to 'dial up' mycotxin production as a survival response to discourage the animal or insect from eating it). Horses do not become 'immune' to the toxin-binder. How could they? It does not even enter their bloodstream.

environment for fungi to proliferate within hours of the right conditions, so in this case very short, or zero pasture is best. It goes without saying to feed good quality, non-dusty (dunk in water if necessary), non-mouldy hay.

Leaving matter to decay on the ground, such as toppings, creates a wonderful environment for fungi.

An interesting fact is that when your soil is biologically active and minerally balanced, (ph up towards 7) fungi will not thrive, whereas they love in an acidic environment. (See Probitas). By attending to the 'cation capacity' (Calcium, magnesium, sodium and potassium balances) the pH of the soil will improve. This reduces the fungal populations to the optimal level.

One suggestion in the meantime, is to smear some Vaseline around the inside of the nostril to catch the spores and pollens on the way up. (Apparently you can do the same thing on aeroplanes and buses to prevent other peoples' germs going up your own nose!)

Keep magnesium intake right up there as when magnesium levels decline, the incidence of allergies and asthma rises. (see "Magnesium Deficiency" below)

### Nose-Bleeding

This can occur when the Aspergillus fungus 'sets up camp' in the walls of the guttural pouch of the poor horse. Their preferred location is on one of the major blood vessels that are right there. The blood vessel gets damaged and bleeds. It's as simple as that. Sometimes this colony of fungi damage nerves in there, which can cause difficulty swallowing.

Unfortunately it's not that simple to eradicate it. It is a serious and debilitating condition and horses have been known to bleed to death. Surgery may be required.

This form of nose-bleeding is not related to exercise. If it is induced by exercise there is a different cause.

There is an excellent article "The Whys and Wherefores of Guttural Pouch Disease" by Dr Dwayne Bennett. Google will find it. Go to 'Guttural Pouch Mycosis' for more details.

### Skin Conditions

I am talking about the persistent ones that don't respond to the normal treatment regimes. Where the poor horses rub and scratch their bellies on the ground so much that they bleed, or reach around and bite their elbows until they bleed. These conditions require a drastic reduction in sugar (lush grass) consumption and corresponding increase in hay consumption to restore hind-gut health and function, which will kickstart B-Vit production (essential for healthy skin), ensure omega 3's are in the diet with a good quality multi-vitamin and mineral supplement.

The answer lies in getting the horse into a state of optimal health.

### Mineral Imbalances especially Magnesium Deficiency

Unless you have been organically farming for years, or applying the Probitas (or similar system) to your soil, your pasture WILL BE minerally imbalanced, in particular deficient in calcium and magnesium. These macro-minerals are so vital to life that if the animal isn't getting them from the grass he is eating then we must supply them in the form of a supplement for the following very good reason...

*\*\*\*\*The body pH of the horse (or any mammal including us) is supposed to be up around 7. When the pH is less than 7, from eating too much sugar/carbohydrate from grass and molassed grains, the body is acid and numerous health problems arise from being in a state of 'acidosis'. If the diet does not contain enough calcium and magnesium then the body has to continually swipe these vital minerals from the bones, muscles, (including the heart), nerves, and brain, to maintain this pH.\*\*\*\**

**In layman's terms, here are some facts. Think about them and draw your own conclusions!!!**

Calcium excites the nerves and magnesium relaxes them. The brain is part of the nervous system! (Attention Deficit Disorder type symptoms). They 'lose the ability to process information' (can't think straight), you have difficulty getting their attention, they become over-sensitive, spooky and cause accidents and so on.

Calcium is necessary for muscle contraction and magnesium is necessary to release them. Horses are 80% muscle.

Lack of calcium/magnesium causes 'spasticity' of back muscles, tight hamstrings, tenseness, muscle cramps.

Boron is a 'synergist' for calcium and magnesium, which means it helps calcium and magnesium to do their jobs. In the absence of boron, up to 40% of calcium and magnesium is lost in the urine. Boron is also commonly lacking in our soils.

Calcium, magnesium, boron along with copper, are high on the list of minerals necessary for proper bone formation and maintenance as well as joint health.

Spring time (worst time of the year for mineral imbalances) is when mares are in the third trimester of pregnancy, and are nurturing their growing newborn foals. (Increased requirements)

Lime is calcium, so liming is a good start and will take care of part of the daily calcium requirement. Magnesium is not so easily applied via the soil short term.

Our climate in New Zealand is changeable, warm and wet. The spring 'flush' is well known with its associated problems, but there are many slightly lesser 'flushes' throughout the year depending on conditions. Anytime the grass shoots away it grows too quickly to uptake minerals, especially magnesium.

There is a huge emphasis in New Zealand on grass production, and comparatively little on the health of the stock that are eating it. Many of the pastures our horses



are grazing are primarily for sheep and cattle, and are more suitable for improving weight gain and milk production. Furthermore, they are fertilized with substances that promote rapid growth and therefore lack of mineral uptake.

Magnesium deficiency can cause many of the symptoms listed above in horses, including staggers. This is well recognized in cattle in the spring and remedied with magnesium supplementation. It is referred to as 'grass staggers' to differentiate it from 'rye-grass staggers' caused by the Lolitrem B endophyte in the rye-grass.

Magnesium is one of the most important minerals in the cell. Some is stored in the body, mainly in the heart and the skeleton, from where it is released when deficiencies occur in the diet.

Magnesium plays a vital role in the activation of around 350 enzymatic processes in the body including breakdown of blood glucose. Blood magnesium levels rise after the horse eats glucose or carbohydrates. Simplified : low magnesium = a reduced insulin response. It therefore contributes significantly to the development of obesity, the 'diabetic' horse, associated laminitis and eventually to the "Cushings-like" syndrome.

Spring grass is especially high in glucose and low in minerals including magnesium. Deficiencies affect the cell membranes of nerve and muscle tissue, leading to many of the above symptoms, especially the 'hypersensitivity' ones.

Magnesium is one of the essential electrolytes, along with calcium and potassium. Too much calcium and/or not enough magnesium can predispose a horse to 'tying up' (severe muscle cramps)

### **Symptoms include:**

- Excessive spookiness/alertness/excitability
- Loss of appetite/poor condition
- Nervousness
- Exhaustion
- Cramps
- Cardiovascular irregularities

Epsom salts (magnesium sulfate) can be fed short term, however, regular feeding can lead to gastro-intestinal upsets, even diarrhea. Magnesium oxide is a form of magnesium that is usually applied to the soil. From there it would be processed thru the plant into a form that the body can utilize. It is imperative to feed a highly absorbable, organic form that is non-toxic and whatever the horse doesn't need will go out with the urine or manure.

Magnesium needs to be part of the right feeding regime for your horse, according to his lifestyle.

Kikuyu grass contains oxalates which bind up calcium. Horses grazing pastures with significant proportions of kikuyu definitely need to be supplemented with calcium. Feeding some lucerne along with a good calcium supplement is a good option.

Kikuyu grass is not high in nutrition, it is important to have a good feeding regime when kikuyu is prevalent in your pasture.

## High Sugar = Lack of Fibre

### **Insulin Resistance/Acidosis/Laminitis**

Grasses planted primarily to fatten livestock and promote milk production are 'high sugar' grasses. Hay made from wheat, barley, rye-grass or oats is high in sugar especially if it has been made prior to seed formation.

Sugar levels can be elevated in grasses when they are drought stressed or over-grazed. Sugar levels can skyrocket in the spring when grass shoots away. Grains, whilst they contain some protein, are mainly carbohydrate, and therefore oats, corn, wheat and barley contribute to total sugar the horse is consuming. So does any feed containing molasses.

When the input of feed far exceeds the output required for the amount of exercise the horse is doing, problems will ensue!!

What is happening in New Zealand is that we make the mistake of thinking that grass provides enough roughage and fibre. NOT TRUE! Young, green, growing grass is mainly non-structural carbo-hydrate (sugar and starch). Clover is 1/3rd higher in starch than grass. As the grass matures it develops more stalk and becomes more fibrous (as in roadside grass or standing hay). Then it is great as it is more fibre than sugar.

Horses have a small stomach and a short 'small intestine' (where carbs are digested). Then they have a HUGE hind-gut, (the caecum and large intestine), which takes up most of the room in the horses 'barrel'. The hind-gut is meant to be chokka full of micro-organisms which are designed to digest the large quantities of fibre the horse would normally eat. What happens instead is that the excess carbohydrate from the grass / molassed grains diet we force upon them, gets pushed into the hind-gut, where it cannot be digested. There it ferments, resulting in acidosis (low Ph) which kills all those good micro-organisms. The ensuing metabolic chaos, compounded by mineral imbalances especially the lack of magnesium, results in inflammation of the laminae of the hoof and there you have it, sore feet and laminitis.

In fact the horse/pony can eventually become insulin resistant, which is a similar condition to Type 2 Diabetes in humans.

### **Signs of insulin resistance include:**

- being obsessed with eating, especially grass, you can't keep their head up!!
- 'lives on the smell of an oily rag', get fat easily
- has a 'cresty' neck - gets 'pads' of fat behind the shoulders and above the tail
- puffiness, around the eyes and sheath
- urinates a lot - lethargic
- mares don't cycle properly
- drinks a lot
- sore feet (pre-laminitic)
- prone to laminitis

It is important to understand that these horses are not just fat, they have a serious metabolic disorder that needs urgent action! They are like diabetic people and

# PASTURE & YOUR HORSE

suffer from the dysfunction of every major organ system in their body, the circulatory system (especially to the hooves), the digestive system (especially the hind-gut), the reproductive system, the nervous system (including the brain), the endocrine system. They are an inch away from foundering.

Horse owners have reversed these symptoms by restricting grass intake, and feeding plenty of hay that has had the sugar content leached out by soaking in a tub of water for an hour before feeding. The water goes brown and fizzy. Tip it on your garden. Supplementation with chromium, magnesium and omega 3, attention to healthy hoof form and as much exercise as possible are equally important.

## PREVENTION IS WAY BETTER THAN CURE.

Please understand that it is primarily a hind-gut problem caused by sugar overload, lack of fibre and lack of exercise. These horses are the equivalent of the couch potato person who lives on junk food. The key to a healthy horse with healthy hooves is to look after the flora in the hind-gut by ensuring good fibre intake daily.

Oils 5%	Oils 5%	Oils 5%	Oils 5%	Oils 5%
95% Soaked Hay FibaRich Pellets <i>10% of this can be made up of Hay Cubes or Protein</i>	<b>Protein</b> (eg soya bean meal) and <b>Carbohydrate</b> (eg grasses, grains) 15%		25%	35%
	80%	70%	60%	45%
	FibaRich Pellets Hay Cubes Hay	FibaRich Pellets Hay Cubes Hay	FibaRich Pellets Hay Cubes Hay	50% FibaRich Pellets Hay Cubes Hay
<b>Obese and/or Laminitic</b>	<b>Idle</b>	<b>Light Work</b>	<b>Moderate Work</b>	<b>Intense Work</b>
See below	Less than 3 rides per week	Pleasure riding, dressage, hacking, showing etc	Trekking, stockwork, showjumping	Racing, polo, endurance, hunting, eventing



**Fibre**



**Protein & Carbohydrate**



**Fat**

### Important:

- Soak hay in water for one hour (to reduce sugar content) discard water and feed immediately.
- Feed Hay without any perennial rye grass or clover in it.
- Feed Lucerne Hay, Lucerne Cubes or Lucerne/Timothy Cubes to Horses on Kikuyu grass for extra calcium.
- After approx 6-9 months the obese/laminitic horses' metabolism will be returning to normal and they can be fed as 'Idle' Be extremely diligent about not allowing a relapse.
- When on any kind of pasture feed a toxin binder containing mycosorb and a highly absorbable magnesium such as Alleviate.
- For horses in moderate to intense work add carbohydrate (eg grass & grain) and protein (eg soya bean meal, sunflower seeds, tick beans ) according to energy requirements (refer to table above).
- Avoid sugar overload in broodmares, young & growing horses, by ensuring a high fibre intake to offset high sugar content of lush pastures.

## Why Add Fibre?

### Adding fibre to the diet of NZ pasture fed horses is vital:

- It keeps the hind gut and its resident micro-organisms healthy, preventing sugar overload, which causes hind-gut acidosis (sloppy manure), ADD (attention deficit disorder), insulin resistance, metaboliinsulin resistance, metaboliinsulin resistance, metaboliinsulin resistance, metabolic chaos, lc chaos, lc chaos, lc chaos, laminitis.a
- The digestion of fibre has immune-boosting, anti-allergic and hormone regulating effects.
- The fermentation of structural fibre is a major source of energy.
- Fibre helps synthesise B-Vits & Vit K for calmness and good health.
- Provides fuel for their internal body heater.
- Creates a water reservoir for proper hydration, especially after sweating, urinating and salivating.
- Requires more chewing = more saliva, preventing stomach ulcers.

### Does your horse eat Grass? Clovers? Molassed feeds? Grains?

Consumption of these, without sufficient accompanying fibre according to lifestyle will sooner or later result in a vast array of ill-health problems. Symptoms including many of those in the above list, "bad behaviours" (eg herd-bound, nappy), ravenous appetites, insulin resistance, obesity or ill-thrift, weak, sore feet and laminitis will become apparent.

### ***Green grass does not supply enough fibre in the diet of NZ pasture fed horses.***

## How Much Fibre?

- A 500kg horse requires approximately 2% of his bodyweight per day. ie 10 kgs /day, 365 days/yr. Hay bales vary but this is approximately 1/2 bale.
- This can be achieved with a combination of hay, hay cubes, beet pulp.

NB. A 500kg horse is a large TB type hack. A Park Hack is more like 450kgs. Heavier hacks weigh more. Take empty float to a weigh station, then take horse in float to weigh station, this will give you an accurate weight.

If the horse is light in condition feed according to the weight he should be, not the weight he currently is.

If you want your horse to lose weight, soak the sugar out of the hay rather than cutting down his hay. Horses have a need to be eating and chewing 16-18 hours a day. Long periods without food cause mental stress and stomach ulcers.

## B-Vitamin Deficiency is Caused by a Lack of Fibre

Within the large intestine of the horse, there should be a healthy population of 'good' bacteria, whose purpose it is to breakdown the food further, producing energy-rich, short-chain fatty acids. These bacteria also produce essential B- vitamins, vitamin C and biotin, necessary for just about every function in the body, including healthy red blood cells and optimal function of the nervous system.

Signs that a horse is not making sufficient of his own B vitamins are poor appetite, sour attitude, anemia, poor hooves and skin conditions.

Biotin is one of this large group of vitamins. Everyone is busy supplementing with biotin to improve hooves when all the horse needs is more fibre in his diet so he can make his own. Hooves will not be strong and healthy on a sugar diet!!

Anything that upsets digestion, such as a low roughage diet, (eg, spring-time sloppy manures caused by acidosis) or increased stress of any kind, will interfere with the horses ability to produce his own B vitamins.

It is a good idea to make sure your multi vitamin/mineral supplement has the full range of B-Vitamins. Mycosorb, the active ingredient of toxin-binders such as Tox-Defy and Equigard contains brewers yeast, which is great for B-Vitamins. Since they are water soluble and not stored in the body, you cannot overdose on them

## Selenium

Selenium is essential to good health in the horse. It is a trace mineral which helps to make important antioxidant enzymes that have several functions in the horse's metabolism. These selenium containing enzymes provide antioxidant protection in every cell of the horse's body. They also have roles that affect growth, immune function, muscle recovery and reproduction.

Many areas of New Zealand have soils deficient in selenium, which means unless you are supplementing with it, your horse is likely to be deficient. Too little selenium in the diet is a problem, it's a bit like trying to run a car without oil, causing degeneration of muscle tissue, stiffness of gait and a predisposition to 'tying up'. However, too much selenium is a problem as it is toxic to your horse. This has become more of a possibility since selenium is now added to a lot of feeds.

Annual blood tests are essential, so you know exactly how much to supplement with. It is best fed in small doses often, as in the organic forms available that you add to a daily feed.

For economic reasons, people with multiple horses often resort to the less absorbable, but cheaper, inorganic forms of selenium as in Selmit 1.

### Photo-sensitivity..... (Sunburn & Mud Fever)

Many horses with white faces and/ or white socks, suffer from 'sunburnt' noses, and/or chronic mud fever. Some get ulcers in their mouths.

The first line of thought with mud fever is that it is caused by "mud". The first line of thought with scabs on the nose is "sunburn". However, the truth is that it can be a very complex issue. So if your horse's mud fever doesn't clear up easily, it could be due to Photosensitization.

This is caused by eating plants which contain certain photodynamic pigments. These pigments enter the bloodstream and eventually reach the skin. When they reach the unpigmented skin of white faces and white socks, they are exposed to UV rays, they fluoresce, and thereby cause damage to the surrounding skin.

Affected skin rapidly becomes reddened, painful, and raised above areas of adjacent pigmented skin. Serum often oozes through the affected skin to form crusts in the hair. Soon, the dead skin becomes dry and parchment-like, and the hair and white skin slough leaving ulcerated areas that may develop secondary bacterial infections, especially in muddy conditions. Hence the name 'mud fever'. Yet the bacterial infection could be secondary to the real cause which is photosensitization.

When this occurs on the muzzle, it resembles, but is not, sunburn. It is a reaction caused by eating these plant pigments, which are exposed to UV rays in the vulnerable unpigmented skin areas.

Most commonly affected areas are the muzzles of horses with white faces and white socks as in mud-fever.

This explains why some horses that have 'heaps of white' never sunburn or get mud-fever, while others do so, chronically and exasperatingly!! Plants known to cause this kind of photosensitization include Perennial rye-grass, (you might have guessed!) clovers, especially white clover, alfalfa, lucerne, St John's wort and buttercup. Many horses are grazing pastures that comprise these species. Buttercups also contain a chemical that causes dermatitis from direct contact with it.

Protection from UV rays is a huge help in prevention, however, this is tricky on the legs. There are vast numbers of topical applications for treating mud fever, which 'work', but often on some horses but not others. Quite often, just when you think you've got it beat, hey presto, it's back!! Understanding that there are a variety of causes, explains this frustrating scenario.

Preventing the horse eating the offending plants is obviously the best option but not always easy. It is yet another really good reason to work out ways to change your pastures to encourage other species than those listed above. See Pasture... the Solution

### Head-Flicking/Shaking

Now this is a difficult one. Something, the most likely candidate being a neuro-toxin, causes damage to the trigeminal nerve. This is a major facial nerve which goes from behind the eye down the face and branches out to the nostrils and mouth areas. Once it is damaged, increased blood supply, such as on exercise, triggers 'electrical' sensations down the nerve, causing the horse to incessantly flick his head. At first you are sure that a bug has flown up his nose. Flick, flick, flick, then suddenly, simultaneously, they put the brakes on and rub their nose on their lower leg. This is quite likely to happen while you are cantering along. It is so exasperating and believe me, nothing you do will prevent the behaviour.

Head-flicking can be triggered by any kind of 'pressure', (mental or emotional type pressure).

Large vet bills, many hours on the internet, trying nose-nets and UV masks follow. The latter provide temporary relief for some horses.

Over a period of a year or two, the bouts of head-flicking get worse and more frequent. They even become "photic", in other words triggered by sunlight and/or breezes. Not a sign of a flick on overcast days and unrideable on sunny days. One such horse that I know, could be ridden at night. Eventually the horse is exhibiting these behaviours while at rest in the pasture. It must drive them NUTS. It gets to the point where the horse is so distressed he is shoving his head in the hedge to get away from the light, and the owner reluctantly decides to euthanase him.

Personally, I am 100% convinced that the neuro-toxin comes from the rye-grass. And there has to be some connection between the UV sensitivity, as in the photosensitization, and the damage to the nerve. It will become clear eventually. Globally nobody knows exactly what causes it, but if you follow the gist of all this rye-grass stuff, you'll understand why the rye-grass has to be a strong candidate. I think the plants with the photodynamic pigments like rye, clover and lucerne act as 'triggers'.

From The Survey, 90% of the head-flicking horses were grazing rye/clover mixes, most on dairy or ex-dairy. (The other 10% did not know, but from the other symptoms their horses were exhibiting, they most likely were grazing pasture that contains rye-grass). Most were on rye-grass that has been fertilized with super, but some were on pasture that hasn't seen fertilizer for 10 years.

One quarter of the horses for whom their owners filled out an "Equine Health & Behaviour Survey" are head-flickers. (42 out of 170). I have heard of two horses whose head-flicking started after an accident that must have damaged the trigeminal nerve.

All the head-flicking horses from the Survey also exhibit other symptoms of myco-toxicity.

I know of several horses that flick when on rye-grass but cease to do so when taken off it.

The only two horses that I know of that have been completely removed from rye-grass/clover and are now grazing cocksfoot type pasture, are both virtually flick-free. One of these horses belongs to me.

Head-flicking does not seem to respond to a toxin-binder, even large doses. It can be seasonal, but the only hope seems to be complete removal from rye grass. Drastic measures such as blocking or cutting the nerve, give about 4-5 years of flick-free riding, but apart from the risk of a droopy lip, when the nerve repairs somewhat, it comes back worse than ever, and that is the end of it. There are some expensive drugs (cypheptadine) that can help in some cases, but again not long term. It does

seem ridiculous to go to such measures when maybe just removing the horse from the offending pasture could be the answer.

With my horse, even tho he is now basically flick-free, I am sure damage to the nerve still exists, as some flicking can still be triggered by increased exercise, as when I gallop him and get him warmer than normal, or if he gets his knickers in a twist about something (pressure). Maybe the damage to the nerve will gradually repair completely, providing he is not exposed to the irritant again. Certainly, whatever it is that causes it to become photic is gone. This could be to do with the fact he is no longer grazing the grasses that contain the pigments which cause photosensitization.

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