

EQUINE NOTES

October 2016

Welcome to the Spring Equine Notes Newsletter.

We hope that everyone has had some Winter rest and recharged their batteries for the Spring and Summer months and what normally is a busy but exciting time.

We have been fortunate to have had a relatively mild winter, with most horses coming through the winter in good condition.

The Racing season and competition seasons for many is already underway in the south, although several trainers were able to race their horses out of the District during the winter months.

Spring is an ideal time of year to ensure that your horses are fit and ready to take on the up and coming competitions.

Levels of selenium and other important trace elements (phosphorus, iron and magnesium) can easily be measured by a blood test. As the weather warms up and the grass starts to come away, parasite (worm issues) can arise resulting in diarrhoea, colic and occasionally weight loss.

A faecal egg count and appropriate deworming program can help avoid these problems. This time of year is also a good time to get your horse's teeth done if they are due.

Foaling has already begun in Southland and before long we will be starting to breed mares again.

Southern Vet Centre will continue to offer foaling and breeding services to all mares including natural, fresh and frozen artificial insemination. In addition this year we will be offering an Embryo Transfer Service (see the article page 2).

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US locum returning for 2016

Phil Burns is set to return for this coming breeding season. Phil; a member of a 6 veterinarian equine practice in Wisconsin has been leaving the US winter behind and coming to work in Invercargill over our busy summer for 10 years now.

Phil has been a regular fixture to the equine team from November to February most years. He had last year off but is all set to be here again this summer.





NEW at Southern Vet Centre this season: Equine Embryo Transfer

Annemarie Wezenbeek, DVM

Embryo Transfer (ET) is the process in which your mare (the donor) is bred to a stallion and the embryo is then transferred to a surrogate mare (the recipient), who carries the pregnancy to term.

Your mare will be listed as the dam, while the recipient mare is the surrogate mother until the foal is weaned.



Annemarie Wezenbeek

ET's in horses were first described in the 1970's, but the technique wasn't commercially available until the 1980's. Since then the procedure has gained widespread acceptance and popularity.

What makes ET's so popular with breeders is that it enables you to continue competing your mare while the recipient mare carries the pregnancy to term. Or, in case your mare has a subfertile uterus and is prone to losing embryo's, her embryo can be transferred into a healthy uterus of another mare.

Another advantage would be the possibility to obtain more than one pregnancy per year. Multiple pregnancies are not allowed in some breeds, so it will be necessary to consult individual breed registries, for their guidelines regarding embryo transfer and registration of offspring.

The success of an embryo transfer program largely depends on creating an embryo in the first place! Either via natural serving or artificial insemination with chilled or frozen semen it is hoped a strong and healthy embryo is created.

On day 7-9 after ovulation we flush the embryo from the uterus; we then check the embryo under the microscope and transfer it into the uterus of a recipient mare.

Generally once a healthy (grade1) embryo is obtained and

transferred into a healthy recipient at the optimal stage of her cycle, pregnancy rates range internationally from 65-90%

The most challenging part of the procedure from a veterinary point of view is to make sure that the recipient mare is at the optimal stage of her cycle to accept the embryo. To achieve this we will need to synchronise the breeding cycle of at least 2-3 young and healthy surrogates to the cycle of the donor mare, in order to have one recipient perfectly ready at the time of transfer.

To bypass this hurdle we offer the ET service in partnership with colleagues in Te Awamutu and/or Rangiora. They maintain a mob of recipient mares year-round. Over the last 10 years transporting equine embryos for transfer has been performed routinely in the USA and Europe and has shown to have no detrimental effect on the embryo. Having more potential recipients lined up enables us to optimise your chances of a successful ET program.

After a pregnancy is established and we have passed the 42 day pregnancy test, the recipient can come 'home' to your place to carry her pregnancy to term. While in your care the recipient ('the goose who lays the golden egg'), needs looked after well! After weaning the foal and before her return to stud we will vet check the recipient mare to make sure she is fit for transport back to stud.

Naturally there is a downside to the ET program. Obtaining and handling the early embryo requires considerable skill and is a time consuming procedure. This combined with the synchronisation of recipient mares contributes to the cost of Embryo Transfer compared to conventional breeding programs.

If you consider using our embryo transfer services this season, don't hesitate to contact us for more information and to check whether your mare would make an eligible candidate for ET.

Selenium Supplementation

Heather Cottle, BVSc

Selenium deficiency is a common finding in horses throughout Southland and is diagnosed on a regular basis. Unfortunately for large chunks of New Zealand, our soils tend to be extremely deficient in selenium and this is especially true for alluvial based areas such as coastal Southland. The feeds that we harvest from these areas (hay, balage and crop) are also deficient, meaning ongoing supplementation is necessary.



Heather Cottle

So what is selenium?

Selenium is a mineral that is absorbed by forages and grains and in its natural (organic) form presents as the selenoamino acids (such as selenocystine, selenocysteine and more commonly selenomethionine). Selenium is commonly supplemented in inorganic forms (sodium selenite and sodium selenate) however these are not fully metabolised and stored by the body to the same extent as the organic forms of selenium. Selenium is a key nutrient to combat oxidative stress which is important in preventing poor muscle development, preventing tying up and to counteract white muscle disease in foals. In combination with Vitamin E, selenium helps to protect biological membranes and damage caused by peroxides and oxygen free radicals. Selenium and Vitamin E are also important for the maintenance of resistance to infectious disease. Studies have shown that mares fed Sel-Plex Se such as found in Selamin Gold have foals with stronger immune systems due to higher antibody titres in the hours post foaling giving them every chance to develop into strong healthy youngsters. As well as affecting fertility, supplementation with selenium may help to allow mares to expel their placenta post foaling and prevent retention of foetal membranes.

Selenium Toxicity

Toxicity is the issue of most concern to people and selenium in its inorganic form can be extremely toxic if overdosed, there are two forms of toxicity that may appear.

Acute or sudden onset selenium toxicity and chronic selenium toxicity (Alkali Disease). Acute toxicity can be seen as blind staggers which is characterised by apparent blindness, head pressing, sweating, abdominal pain, colic, diarrhoea, increased heart and respiration rates and lethargy. Chronic selenium toxicity (consistent long-term overdosing or the ingestion of selenium accumulating plants) is characterised by alopecia (hairloss) especially about the mane and tail as well as cracking of the hooves around the coronary band. Fortunately there are few

plants that actively accumulate Selenium in New Zealand.

It tends to be hard to pin anybody down as to what is a safe amount of selenium to give which is why consultation with your Veterinarian is recommended. We can run a simple blood test on your horse to check what their current selenium level is, and this will also give us an idea of what the horse's supplementation over the last 3 months have been. By looking at your horse's diet, additional supplements fed we can provide you with recommendations as to what your horse requires.

Selenium Supplementation

Everybody's feeding regime is different and different feedstuffs can contain differing amounts of selenium. Putting selenium prills on paddocks will result in a temporary boost to the grass selenium levels. If you are feeding a commercial feed with a selenium additive in it you may need to adjust the amount you administer orally. We find that selenium levels in racehorses fed fortified premixes at the recommended daily amount have good levels of selenium in their blood, where as idle horses fed on pasture and hay with only token gestures of hard feed have frequently have low levels. Selenium levels in the winter time also tend to be lowest for these animals. The recommended guideline is 1mg per day for the average 500kg horse but in areas deficient this tends to be a little on the low side and most recommendations are 2mg per day (equivalent to 5mls of Selmit 5 (Selenium selenite) -i.e. 25mg/ fortnightly). Most owners tend to give this oral dose in a one off amount on a given day of the week. It should be remembered though that sodium selenite doesn't metabolise well so the horses' body will only be able to use what it needs at the time of administration and then excrete the rest in urine and manure.

Alternatively, daily supplementation with an organic form of selenium may result in better metabolism however these products are generally more expensive than Selenium Selenite products. Often the easiest way to supplement selenium is in a good quality mineral, vitamin supplement that utilises the natural forms of selenium selenomethionine and other seleno-amino acids.

If you have any questions about selenium supplementation in your horse or wish to have your horse's blood selenium levels checked, please feel free to phone us at any of the VetSouth clinics.



Equine hospital facilities

The equine hospital situated at the PetSouths Findlay Road veterinary complex has been around 20 years now. In 2010 the entire building was enlarged and on the equine side a second treatment room was added. The equine hospital consists of stabling, horse paddocks, two treatment rooms and a horse surgical theatre. The treatment rooms contain stocks to restrain horses and allow invasive examinations like reproductive and upper airway examinations to be safely performed. X-ray examinations, ultrasound examinations and minor surgical procedures are also performed in the treatment rooms.

The Veterinarians utilise the latest in digital computer x-ray gear used to produce high quality images. Images are no longer produced on film but almost instantaneously on a screen. These images are stored digitally and can be emailed or transferred in digital format. Similarly the clinic based ultrasound machine can be used to examine all sorts of 'soft tissue' areas from tendons to abdomens; eyes to lumps, and the lungs and heart.

The advantage of ultrasound is its non invasive nature which builds a picture of what lies beneath the probe. Nasal and upper airway examinations are performed using flexible 9mm diameter fiberoptic scopes – these allow for an up-close examination of hard to reach places.



Major surgical procedures requiring general anaesthesia are performed in the theatre. Horses are first anaesthetised in the padded knock down box then moved via overhead hoist into the adjacent theatre and onto the surgical table. At the end of surgery horse are hoisted back into the recovery box to wake up.

In the theatre itself is a gaseous anaesthetic machine used to keep the horse asleep while surgery is undertaken. Associated with this are monitoring machines to measure blood pressure and blood oxygen capacity.

Horses staying after surgery are boxed in 5 stables at the back of the clinic. They can also be kept outside in one of the 5 paddocks.



Interesting facts about horse vision

The horse has the largest eye of any land mammal.

A horse can see better at night than a human. However, it takes a horse's eyes longer to adjust from light to dark and from dark to light than a humans.

Horses are not colour blind. They have what researchers call "dichromatic" vision, or "two-colour" vision. Research indicates horses can perceive blue and green tones, and color variations based on them. However, they have difficulty with other colours, including reds.

Most of the time, a horse has "monocular" vision. This means a different image is seen by each eye so that a horse is seeing two different pictures at the same time. A horse can also have "binocular" vision. Binocular vision is when both eyes work together to see one picture (humans have binocular vision). A horse only has binocular vision when it is looking down its nose.

A horse has a wide range of vision. A horse can see completely around its entire body except for small blind spots directly in front of its face, underneath its head, and directly behind itself. This is why it's very important not to walk up right behind a horse - you are in its blind spot and if you startle it you may get kicked.

- Most of the time, wherever a horse's ear is pointing is where the horse is looking with the eye on the same side. If the ears are pointing in different directions, the horse is looking at two different things at the same time. There are exceptions to this. For example, if a horse has its ears pinned back against its neck in anger, this does not mean it is looking backwards with both eyes
- Due to the anatomical location of horse's eyes and their pronounced location on the sides of their heads, horse's eyes are prone to trauma and ulceration. The horses flight/fight response makes them even more prone to damaging the eye. Injuries to the eyes can be painful and threaten the loss of vision or even an eye, so urgent veterinary attention is warranted.

Beside: The areas with a #1 shows where a horse has monocular vision. The area with a #2 shows where a horse has binocular vision.



Murphy's Horse Laws

There is no such thing as a sterile barn cat.

No one ever notices how you ride until you fall off.

The least useful horse in your barn will eat the most, require shoes every four weeks and need the vet at least once a month.

A horse's misbehaviour will be in direct proportion to the number of people who are watching.

Your favourite tack always gets chewed on, and your new blanket gets torn.

Tack you hate will never wear out and blankets you hate cannot be destroyed.

Horses you hate cannot be sold and will out-live you.

Clipper blades will become dull when your horse is half clipped.

If you approach within fifty feet of your barn in clean clothes, you will get dirty.

The number of horses you own will increase to the number of stalls in your barn.

Your barn will fall down without baling twine.

Hoof picks always run away from home.

If you fall off, you will land on the site of your most recent injury.

If you are winning, then quit, because there is only one way to go. Down!

Feed related toxicities - What's good for one species may not be so good for another!

Heather Cottle, BVSc

Many of our horses live on properties and in paddocks that are shared with other animal species. The pet goat that steals the horse's breakfast, the nosey sheep that licks the horse's yummy molasses block and the pokey pony that breaks out of his 'Jenny Craig' paddock for the extra blade of grass only to find his way into the calf feeders are all too common scenarios that occur.



Heather Cottle

Unfortunately for all species, many of the formulated feeds are manufactured for a specific species. Additives are frequently added according to each animal's specific needs. For some animals unintentional consumption of the wrong feed has a risk of eating something toxic.

Supplementation of ewes or dairy calves with pelleted feed or meal is common practice during the late winter and spring months. Many of these 'processed feeds' contain ionophores.

Monensin and Bovatec® are ionophore antibiotics that have a coccidiostatic action and are routinely used in the dairy, beef and sheep industry to decrease the incidence of ketosis, improve feed efficiency (growth promotion) and help control ruminal acidosis.

In the horse and other equids, however, ionophores are highly toxic. Outbreaks of ionophore toxicity occur sporadically and are commonly associated with inadvertent access to calf or lamb meal, although accidental contamination of horse feed during the milling and manufacturing process can also occur. Monensin is much more toxic (ten times more) than Bovatec®.

Signs of acute ionophore toxicity include colic, diarrhoea, anorexia, trembling and ataxia. Increased heart rates (tachycardia) also occur. Horses may develop signs of fulminant heart failure (i.e. coughing, jugular pulses, oedema and dyspnoea or breathing difficulties).

The clinical signs of ionophore toxicity observed include anorexia (first and most consistent clinical sign) occurring within 24 hours of consumption and neurologic signs.

Diarrhoea and abdominal discomfort may be caused by the changes in intestinal flora caused by the antimicrobial properties of the ionophore.

Blood tests can be performed to determine if there has been any damage to the heart muscle. A specific blood test – Cardiac troponin I (cTnI) is a highly sensitive and specific biomarker of myocardial injury in horses.



Horses may have mild elevations in cTnI with most of the affected horses having neurologic signs without biochemical or post-mortem evidence of cardiac muscle disease.

Cardiac damage from Monensin ingestion is dose-dependent with horses absorbing smaller doses at lower risk of developing cardiac disease.

Horses with marked elevations in cTnI at 48 hours or less might be predictive of severe disease. Horses suffering from cardiac muscle damage may result in sudden death during exertion several weeks or months later.

Unfortunately there is no antidote for horses that have ingested an ionophore, however administration of mineral oil and activated charcoal via a stomach tube may help it move through the system faster, in the hope of preventing some of the damage.

Horses are known for being nosy and getting into feed they shouldn't, but problems can also occur through cross-contamination of feed.

Feed mills are generally very careful to clean out the mixing area before making a different kind of feed, but, even with great care, a small amount of Monensin or Bovatec could still get mixed with a batch of horse feed.

If that happened, and it was the deadlier Monensin, it could be enough to kill horses that ate the next batch of feed. Many horse feed mills only produce feed for horses so do not have any ionophores present in the mill.

Supplementation of trace elements and bloat oils through a reticulated water system is common place on most New Zealand Dairy Farms. Horses residing on dairy farms that have access to trough water are likely to be at risk

of receiving excessive amounts of trace elements (cobalt, selenium and copper) as well as potentially toxic bloat oils. Provision of a separate water trough to horses is recommended.

While ionophore toxicity can be a problem for horses consuming ruminant feed, excessive consumption of horse feed by sheep can also have its problem.

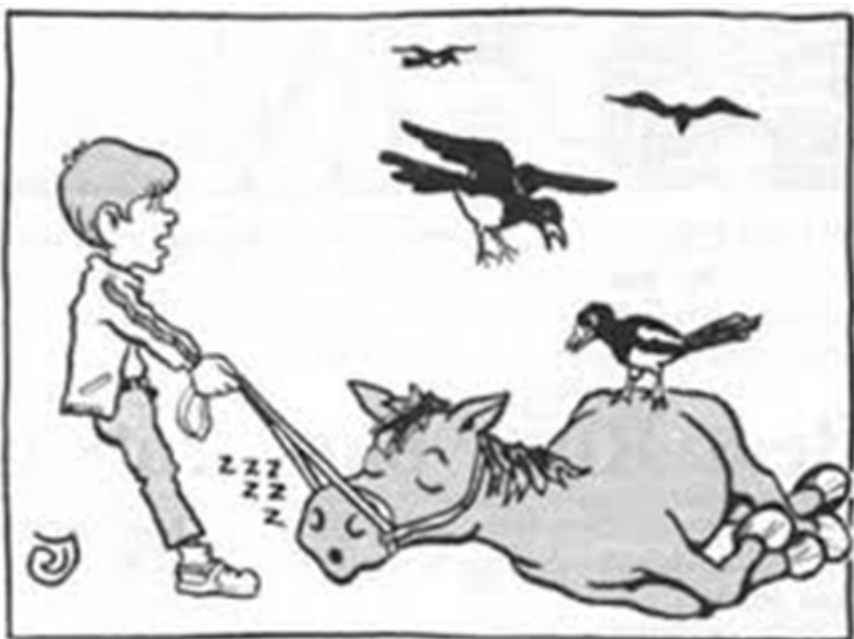
Most formulated horse feeds and horse mineral blocks are fortified with additional copper specific for horses that may be considered too high for consumption by sheep, and this may result in copper toxicity.

Important Tips to Remember

- Ensure products designated for calves, sheep and poultry are stored in a locked, secure shed and away from horse feed.
- Avoid putting horses into an area where other livestock are being supplemented with food containing ionophore additives.
- Use a horse feed specifically produced for horses and if possible from a mill that only produces horse feed.
- Read product labels carefully and talk to us at VetSouth to discuss anything that is on the label.
- Provided an alternate water source if your horse is on a farm with additives being added to the main water system.

If you have any concerns about whether a feed is suitable for horses or suspect your horse has had access to calf or lamb feed, please do not hesitate to contact your nearest VetSouth Clinic.

Sleeping on the job!!



A man has a racehorse who has never won a race. Man in disgust says, "Horse, you win today or you pull a milk wagon tomorrow morning."

The starting gate opens, the horses take-off, they move the gate away and there lays his horse asleep on the track. He kicks the horse and asks, "WHY ARE YOU SLEEPING. The horse, half asleep says, "I have to get up at three in the morning."

Recent dental special

Over July and August the clinic ran a promotion on equine dentistry our 'dental special'. This was taken up by 96 clients and their horses.

Of all grazing domestic animals, horses tend to live the longest. There is a heavy reliance on good teeth to break down their fibrous diet. Horses have evolved with the need to chew food for long periods of the day and so good dental health is vitally important to wellbeing. Poor dental health makes chewing difficult and this can lead to loss of body condition.

The dental examination involves a thorough visual examination and examination with the hand is conducted to check for amongst other things

- Sharp enamel points on the edges of teeth
- Missing teeth
- Loose teeth
- Food packing between teeth
- Gum disease and pocketing around teeth
- Anything abnormal

It is common to get sharp enamel points and these are removed using the latest in cordlesspower dental equipment the 'powerfloat'. The powerfloat has an industrial diamond burr that is very sharp and easily grinds hard enamel without damaging the cheeks or gums.

We run this special each year so watch out next year over this time so you don't miss out.



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