

For  
**Gallopers  
& Pacers**

# Talking Horses



The newsletter with news, views and practical advice

## In this Issue...

- Soft Palate Problems - the latest review
- Research Roundup - Feeding lucerne before exercise can reduce gastric ulcers
- Shin Soreness - Early Recognition

*Plus Handy Hints and lots more...*

## From the editor...

It's that time of the year again when the nation stood still for the running of the Melbourne Cup. This year's winner, Americain, is a truly international horse - USA bred, French trained and Aussie owned. In Harness racing, Melbourne trainer, Ian Dornauf has a horse with a lot of potential, having won most of its starts in higher stakes races. It is an exciting time!!

In this issue, we discuss the relatively common problem of soft palate dislocation, or technically 'Dorsal Displacement of the Soft Palate', or **DDSP** in racing horses. It affects up to 20% of gallopers to a varying degree, with a slightly lower incidence in harness horses. It can result in a good horse dropping out of serious contention in a race. An in-depth review of the problem and the methods used in an attempt to correct it was recently reviewed in the Equine Veterinary Education Journal, USA edition.

We also provide a brief reminder on how to reduce the risk of shin soreness as young gallopers take to the tracks.

We include some interesting research findings and as usual, a number of practical handy hints.

Good Racing,

*Dr John Kohnke*  
BVSc, RDA

## Did you know that...

Young gallopers have a 40-50% risk of developing sore shins in their first preparation. Young harness horses very rarely develop sore shins because they race at slower speeds on banked tracks and have two legs on the track surface at any one time to share the additional loading. Racing greyhounds have a 20% risk of developing shin soreness if they are galloped around sharp bends on a poorly banked, compacted racetrack. Young racing camels can develop sore shin bones when ridden fast over hard compacted desert surfaces in early training.

## Handy Hint

### Finding the Underlying Cause of a 'Runny Nose'

Many trainers have at least one horse in the stable which develops a clear nasal discharge early in its preparation, which often persists for weeks as a thin mucus discharge from its nostrils. This collects after exercise, although in most cases it does not appear to hamper speed or race performance. Other horses develop a 'throaty' cough during warm-up exercise in preparation for each day's training. It is a good idea to monitor the horse with a runny nose by taking its temperature early in the morning before training to check for any temperature 'spikes' above 38.4°C which could indicate an active low grade infection, possibly a residual virus. A blood test to check the lymphocyte levels and monocyte count will help determine whether it is infection, or a more chronic low grade Pharyngeal Lymphoid reaction (throat tonsil immune reaction), with monocytes above 5% of the total white cell count. If the nasal discharge is a clear mucus, it may be recommended to have the horse scoped to check the amount of mucus in the lower windpipe area or streaming up the windpipe, hopefully without any hint of a blood-tinged colour which could indicate a 'bleed'. Your vet may prescribe a course of antibiotics and mucolytic agents to help control any mild secondary infection and help thin the mucus so that it can be expelled more easily.

## Handy Hint

### Managing Pharyngeal Lymphoid Hyperplasia (PLH)

Diagnosis of PLH can be confirmed by scoping the throat area in a young horse with a persistent cough or nasal discharge. In most cases, the 'throaty cough' occurs as it warms up on the track, particularly under cold early morning conditions when inhaled cold air passing over the reactive tonsil can trigger 'throaty cough'.

Although inhalation of corticosteroids in a nebuliser may be helpful, simply drenching a mixture of 30mL glycerine and 1.5ml 10% Betadine (PVP iodine) over the tongue in an oral syringe 5-10 minutes before working the horse each day for 10 days, is often helpful to provide an adherent antiseptic covering over the tonsil area to help reduce PLH reaction and coughing. Supplementing the ration with immune support nutrients, such as **Kohnke's Own Active-8**, at 2 scoopsful daily for 10 days, and then 1 scoopful daily for another 10-14 days, has been claimed by many trainers to help maintain optimum immune defence in the tonsil area and minimise symptoms of PLH in young horses with 'reactive' tonsil tissue in the throat.

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# Soft Palate Problems A Review

Horses have a large upper airway channel to enable them to inhale large volumes of air into their lungs during exercise, with 80% of muscle energy being metabolised aerobically using oxygen. Studies have shown that volumes of air, up to 2,250 litres, are inhaled at 140 breaths per minute in the average galloper and 1800 litres at 80 breaths per minute in a harness horse. However, a horse can only breathe through its nose as the long soft palate locks under the epiglottis to prevent mouth breathing and the risk of inhaling food and saliva, especially at the gallop.

Paralysis of the muscles or damage to the nerve supply to the soft palate is the most common upper airway condition affecting racing horses, resulting in obstruction of the throat area (pharynx) and entrance to the windpipe (larynx). It is the underlying cause of soft palate abnormalities which can affect the throat area and interfere with airflow. It is most common in Thoroughbreds and less common in Standardbreds, ranging from 10-20% of all horses in training to some degree. It also occurs in working horses which are ridden with their head flexed downward, such as dressage horses.

There are 2 conditions involving the soft palate. The most common is a wave-like 'billowing' of the partially paralysed soft palate, although it still remains in position under the bottom border of the epiglottis, or entrance to the windpipe. This is termed 'palatal instability' (PI) and horses with early forms usually develop a noisy 'gurgling' respiration when breathing in during a fast workout. This is a result of the turbulent flow of air over the partially 'sagging' soft palate, like a sail or sheet billowing in the wind.

Although swallowing during a fast workout can temporarily re-engage the soft palate flap under the epiglottis as the tongue moves forward to tighten the soft palate at speed, the soft palate usually 'dislocates' or 'displaces' from beneath the epiglottis to result in true soft palate dislocation, termed **Dorsal Displacement of the Soft Palate**, or DPSP. This usually results in loss of speed and performance.

## Underlying Causes

Although the exact cause of PI and DPSP is unknown, it is thought to be caused by damage to the nerves of the soft palate which maintain the soft palate muscles taut in the pharyngeal cavity at the rear of the nasal airway exit into the throat. Anatomically, the soft palate nerves originate from the vagus nerve as it passes within the lining of the pharynx into the neck and chest. Researchers have blocked the pharyngeal branch of the nerve in the back of the throat with local anaesthetic and produced the typical symptoms of DDSP exhibited at speed.

Other studies have indicated that 'excitement' of some pharyngeal muscles occurs at an increased rate of breathing, which may explain why most clinical DDSP cases occur only at the gallop or all-out pacing speed. Other theories being investigated include abnormal nerve function in the tongue and swallowing muscles, laryngeal paralysis and weak tongue muscles which result

## Handy Hint

### Increased Swallowing before Soft Palate Displacement

Observations indicate that where a horse is making a regular 'gurgle' as it breathes in, due to a 'wind-turbulence' sound as a result of PI, it will then repeatedly begin to swallow, lowering the bit on its tongue as the tongue moves backward. The soft palate will then displace upwards to give the characteristic 'fluttering' sound as it breathes out. The cause of the increased swallowing is presently unknown, but researchers consider it is stimulated by attempts to prevent the soft palate disengaging from under the epiglottis. Some horses regularly exhibit some degree of turbulent air noise on inspiration (like a soft 'snore') suggesting partial billowing of the soft palate without DDSP, which does not affect their performance. Many affected horses with PI do not show symptoms when relaxed during training even at near maximum speed, but may exhibit the characteristic 'fluttering' of DPSP when excited during a race, resulting in a reduction in performance. The 'fluttering' sound is a combination of the paralysed soft palate 'flapping' in the air flow as the horse breathes out and also air escaping under the soft palate into the mouth causing the cheeks to billow out and make a 'soft' fluttering sound at the same time. However, recent studies have shown that 20-30% of horses which develop DPSP fail to exhibit the audible characteristic 'gurgling' and 'fluttering' sounds, but their performance is likely to be less than optimum.

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## Typical Symptoms

Abnormal upper air sounds that are often reported by jockeys or harness drivers include 'snoring', 'gurgling', 'choking', 'fluttering' or 'swallowing the tongue', with a loss of performance by suddenly 'dropping back', 'pulling up' or losing speed or 'power' when racing. The noise often becomes louder when the head is flexed downwards if the horse is 'reined' back to reduce its speed after passing the post in a race rather than let it run out with its head stretched forward. The loss of performance is invariably linked to abnormal sounds as the horse breathes out. This is not associated with the 'snorting' sound and 'flapping' sound of the nasal opening which some horses exhibit at the trot when their head is flexed downwards on the bit.

## Diagnosis

Although the 'fluttering' sound as the horse breathes out, particularly if its head is flexed downward, is part of the diagnosis of DDSP, the advent of fibre optic 'scopes' has allowed examination of the soft palate positioning under the epiglottis and any abnormal movement at rest and during exercise.

**Scoping at Rest** - Scoping a horse to examine the pharynx at rest, when it is breathing normal volumes of air at 12-16 breaths per minute, has been shown to be unreliable in the diagnosis PI or DDSP. The actual withdrawal of the scope into the back of the nasal area from the pharynx (throat) after passing it into the trachea (windpipe) to check for mucus and inflammation (say in a coughing horse) often results in a DDSP type reflex which disengages the soft palate. However, it is quickly re-engaged as the horse swallows and is not a sign that true DDSP occurs during high speed exercise.

**Scoping During Exercise** - The use of the video endoscope at almost racing speeds on a treadmill has improved the accuracy of diagnosis of DDSP and is helpful in pinpointing the possible underlying cause. Some horses will displace the soft palate when galloping, especially when the head is flexed down ('on the bit') or when pulling up after a fast workout, but they then swallow to re-engage the palate under the epiglottis.

Scoping at high speed on a treadmill helps ensure that a horse will displace its soft palate because the animal can be run for longer at racing speeds, as compared to short 300-400 metre hit outs on the track. However, the excitement and stress of race conditions are thought by some researchers to trigger DDSP which cannot be mimicked on a high speed treadmill.

**Interpretation is a job for your vet.**

**Analysis of Noise Patterns** - Studies in the early 2000's in the USA by Prof Fred Derkson, pioneered a new technique of recording abnormal sounds made by horses as they sprinted past a microphone. The sound patterns on expiration can be matched to determine the source and character of the sound. Distinctive sounds are made by 'roarers' on inspiration, DDSP horses mainly on expiration and other characteristic 'gurgles' by horses with PI or epiglottic entrapment or pharyngeal inflammation. However, noise patterns are not an infallible way to confirm DDSP, as up to 30% of horses are 'silent' displacers of their soft palate during intense exercise.

Another diagnostic method ie ultrasound measurement of the position of the bone in the rear of the tongue, however, it is not an accurate or repeatable procedure, with a maximum of 30% positive diagnosis.

## Managing DDSP

Over the 250 years of organised racing, many 'treatments' and tack changes have been used to overcome DDSP. Unfortunately, up until a positive diagnosis was possible using the high speed treadmill scoping technique, it was difficult to confirm that treatment or change in tack was responsible for improving the performance of a horse with suspected DDSP.

## Handy Hint

### Scoping During Exercise Increases Accuracy of DDSP Diagnosis

The most accurate diagnosis is obtained by scoping the horse during exercise on a treadmill as the upper airways are functioning as they would during fast work or racing when DDSP is most prevalent. This may necessitate taking a horse to a clinic with a high speed treadmill or to a training stable, as organised by your vet, with a high speed treadmill. However, scoping a horse at rest is helpful to diagnose pharyngeal cysts and epiglottic entrapment which may cause signs similar to DDSP at rest.

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**Tongue Ties and DDSP Bits** - A number of tack changes have been popular to help correct DDSP in racing horses, but although they are widely used, there is no proven scientific evidence that they are beneficial.

Tongue ties are the most common method of controlling DDSP, but studies indicate that they have no mechanical action in reducing soft palate disengagement, although around 30% of horses appear to improve in performance and race earnings on the racetrack over 5 or more races when their tongue is tied down when racing, especially in Thoroughbreds. A special curved bit, rather than a broken snaffle type bit, to hold the tongue and larynx forward is also used. Some Standardbred trainers use a straight bit to help reduce DDSP during a race, with around 40% of suspected DDSP affected horses making less noise and racing more consistently.

A new 'collar' dubbed the 'Cornell Collar' as recognition of the researchers who developed it at Cornell University in the USA, to hold the larynx in a more forward and upward position when racing, has shown a 100% benefit in experimental studies on horses with induced DDSP. More studies are being carried out on clinical DDSP cases and approval is being sought for allowing this device to be used on race day.

**Laryngeal 'Tie Forward' Surgery** - The research at Cornell University to develop the 'Cornell Collar' also pioneered a new surgical technique to anchor the larynx forward by severing a muscle that holds it in position, resulted in an overall improvement in race earnings in 86% of horses, although only 43% of the total number of horses went onto race again.

**Resection of the Soft Palate** - Surgical techniques to stop humans from 'snoring' have been adapted to help make the soft palate more taut and less likely to billow out when a horse is exercising at speed. The aim is to surgically induce scar tissue formation on the rear border or within the soft palate to make it shrink and tighten as it heals. Surgery, now by laser, to remove an elliptical shaped layer of the middle of the soft palate was pioneered by Dr. Tom Ahern from Perth in the early 1990's. Although these surgical techniques and injection of sclerosing or irritant chemicals into the soft palate to stimulate fibrosis and shrinkage of the tissue to tighten it up, are considered to help reduce the incidence of DDSP when racing, this has not been reflected in rigorous analysis of race earnings before as compared to after the corrective surgery or soft palate sclerosis was carried out, with only around 28% of horses showing improved performance.

Many surgeons now combine laryngeal 'tie forward' with soft palate surgery in an attempt to improve the success rate. However, at this time, the success rate seems to be largely dependent on the skill of the surgeon and the combination of methods used.

## Summary of Management

It appears that a combination of a tongue tie and the laryngeal 'tie forward' technique, or the fitting of the non-invasive 'Cornell Collar', are the best options for managing a horse with clinical DDSP as these measures appear to be at least 60% effective in improving subsequent race earnings in DDSP affected horses. Seek advice from your own vet before retiring a DDSP affected horse. Allow young horses with suspected DDSP to mature to 3 years of age and treat for Pharyngeal Lymphoid Hyperplasia (PLH) to help reduce the potential for DDSP before resorting to surgery.

### Handy Hint

#### Young Horses often 'grow out' of DDSP

Many trainers believe that 2 year olds with mild symptoms of DDSP can improve and cease disengaging their soft palate by 3 years of age. It is often recommended to turn the horse out until it is 3 years of age and then return it to a racing prep to monitor any improvement. Many young horses often tense up more during exercise and riders hold them with their neck partially flexed, which may increase the risk of DDSP. In this case, a product such as **Kohnke's Own Mag-E** with organic magnesium, to correct an inadequate dietary intake of magnesium, is widely used by trainers to help a young horse settle during breaking and early training and it may reduce the risk of DDSP. It is also possible that viral EHV-1 & EHV-4 can cause swelling in the pharyngeal area, resulting in Pharyngeal Lymphoid Hyperplasia (PLH) ('rocky road tonsil') and epiglottic swelling, which may mechanically increase the risk of DDSP.

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### Handy Hint

#### Relationship between Tonsil Reaction, PLH and DDSP

Many young horses develop a persistent thickened and reactive tonsil area as they recover from the 'stable virus' (EHV-1, EHV-4) infection. The single large pharyngeal lymph area (tonsil) in the back of the throat can harbour active EHV virus, which the immune system under stress from airway pollution and dust during training, is unable to counteract. These horses can become 'carriers' and spread the aerosol viral particles to other horses in the vicinity of a stable or during transport. Often the PLH condition involves increased mucus secretion and lymphocyte and monocyte cell activity, which results in a persistent PLH while in training. Although PLH has not been directly related to poor performance, it is possible that it could increase the likelihood of DDSP in young horses in training.

Medical treatments using inhaled corticosteroids, glycerine and DMSO throat sprays have proven to not always be effective to correct DDSP. Further research is underway.

## Shin Soreness - early recognition

Despite years of research into the underlying causes of shin soreness in young racehorses, there is still up to a 40-50% incidence of a young horse going 'shinny' in its first prep as a 2 year old training on an Australian racetrack. Some trainers appear to have higher number of shin sore young horses as compared to other trainers training on the same track. As tracks dry out in early summer, the risk is increased in all 2 year olds galloping on compacted, highly concussive track surfaces. The risk is also increased if young horses are galloped 'too fast-too early' in their preparation or when heavy front-ended, precocious young horses are over-galloped in a 'get fit quick' program over 6-8 weeks, or the training track has tight, poorly banked corners.

### Recognising the Early Signs

Most young horses show subtle early signs before they go 'shinny'. Although some trainers believe that a youngster needs to go 'shinny' to 'toughen the legs', there is a risk of long term damage to the front cannon bones and even the chance of bone failure and fracture. As well, if a young horse is worked fast in an effort to make it go 'shinny', the chances are that the fetlock joints are likely to develop overload stress and the start of joint cartilage damage and subchondral bone collapse, which in many cases, require long term layoff from training and soundness issues as the horse ages in subsequent preparations.

**Regular monitoring of track conditions and careful observation of the young horse for signs of reduced stride length and 'heat' in the shins will help to identify the early signs of shin soreness before they progress to a more advanced stage with the risk of long term unsoundness.**

### Handy Hint

#### Plan the Training Program to Allow Cannon Bone Modelling

Training programs should be designed to allow the cannon bones to experience and adapt to the loading and deformation strain imposed by higher speed galloping. The leading forelimb is subjected to the greatest amount of strain, particularly when cornering, so it is recommended that the initial high speed work should be carried out down the straight to model the shins, reducing to a slower pace around the turns. Galloping in a straight line will not induce periosteal reaction to the same degree as occurs when the cannon bones are loaded as a horse is galloped around a compacted, inadequately banked bend on the racetrack.

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### Handy Hint

#### Early Signs of Shin Soreness

The early signs of discomfort due to bone surface reaction and inflammation on the front surface of the leading cannon bone include shortened front limb stride, 'proppy' action with higher front limb action, running wide on a corner and galloping with the head held more upright and reluctance to 'get on the bit'. In early cases, the front surface of the front cannon bone feels 'warmer' within a few hours after exercise if the hand is run down the front surface before each day's work. As the inflammation increases after each fast workout, a withdrawal response will be apparent if the front cannon bones are squeezed with the hand and in most cases, the horse will show lameness and head bobbing at the trot and change the lead leg during a gallop and rest it forward after a hard gallop.

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While slow long distance pre-training helps to build and condition the muscles, joints and limbs, the bone that the horse is building is more suited to long, slow work rather than to racing. If the shins become severely inflamed with deposition of a bone splint or a 'bucked shin' swelling, the bone laid down is a weaker form of fibro-elastic bone as a temporary reinforcement to prevent bone failure. This type of bone has little residual strength and if the horse is rested from training, this temporary reinforcement 'splint' is resorbed. The bone profile or cross-section returns to its original weaker structure that is unable to withstand the increased loading imposed by galloping too fast-too early when training resumes.

## Management to Reduce the Risk of Shin Soreness

**1. Short Gallops in Early Training** - Commence a program of short, straight-line gallops up the straight over 200 metres (one furlong), twice weekly, at least 4-5 days apart, from the third week of training to progressively load the cannon bones. Short gallops in a straight line do not cause undue stress on bones or muscles after 2-3 weeks of initial conditioning exercise. As the horse develops in fitness, increase the speed and distance travelled to 300-400 metres at each fast workout. Bone modeling is a slow process as is bone fracture healing, so that a step-wise increase in loading over 8-10 weeks will allow time and stimulate modeling in response to the loading forces imposed.

**1. Avoid Tight Circle Tracks** - Do not gallop young horses around tight, compacted curves or end circles on the track too early in their training preparation. Gallop only up straights initially, then work progressively faster into corners and around end circles to allow adaptation to the centrifugal sideways strain forces, starting after 6-8 weeks of training. Avoid sudden introduction to fast work and limit speed of galloping around unbanked, relatively tight bends initially, especially on dry, compacted tracks.

**2. Train on Same Track** - It is best to train on the same track, so that the bends and surfaces are consistent, avoiding compacted areas on the rails when galloping on fast work mornings. The majority of racetracks have training tracks built inside the main grass, turf surface or sand track. These have smaller end circles and can impose additional loading, especially on odd shaped, rather than oval track designs, constructed to provide the length of straight required within the available land area.

**3. Avoid Heavy Work Riders** - Once the young horse is controllable, change to a light-weight fast work rider (50-60kg) to reduce excessive loading as the horse is worked faster at the start of regular fast work. Each extra kg of rider weight is magnified 5-10 times by centrifugal forces when galloping around bends. Avoid over galloping a young horse - give more sprint-ups to increase speed fitness.

**4. Cold Therapy After Galloping** - Apply cold therapy, such as ice boots for 5-10 minutes, after each gallop in the later stages of training. Cold water

hosing (20-23°C) for 5 minutes in the wash bay provides adequate cooling to reduce inflammation - ice gel packs applied for 5-10 minutes are less efficient at removing inflammation. However, ice packs can be wrapped on both front cannons during a walk to cool-out, or during the trip home from the track to help reduce minor inflammation and soreness as training progresses. A magnetic bandage with 1500 gauss field strength, wrapped on both forelimb cannon bones, may be helpful to improve the rate of deposition of calcium and bone minerals and hasten the modeling and strength of bone laid down as it adapts to higher loading during fast work. The bandage can be wrapped in the afternoon and overnight when the horse is resting in its stable or yard.

**5. Check the Shins Regularly for Heat or Soreness** - Observe for signs of a 'proppy gait' or shortening of stride. If early soreness is detected, cut back on the speed of fast work for 2-3 weeks to allow the shins adequate time to model and thicken the bone along the stress pathways. Apply cold packs after training and walk to assist bone repair. If discomfort is more severe, apply a warming liniment overnight or alternatively (not at the same time) a clay poultice overnight until symptoms subside. In severe cases, it is best to rest the horse for 3-4 weeks until the soreness settles down and then recommence on a revised program as outlined above. When horses are rested, the cannon bone actually becomes even less rigid as modeling and the laying down of new bone is resorbed from along the stress lines.

**6. Short Paddock Rest** - In mild cases of shin soreness, turning a young horse out for a 2-3 month paddock rest is a waste of time and reduces the chances of prize money earnings. A short 7-10 day spell to settle inflammation with ice-packing and walking for 30-40 minutes daily, and then return to a modified training program is the most effective way of reducing wasteful down time.

**7. Reprogram Training After Downtime** - For each week that a young horse is rested-up because of other problems (eg. respiratory disease, joint problems, severe tying-up), back step its training program by 2 weeks to avoid shin soreness as the cannon bones may start to resorb calcium and weaken during the lighter work period.

## Research Round up

Two studies, one in Florida in the early 2000's and another in Texas A&M University in 2006, have found that feeding lucerne hay (or chaff) shortly before exercise, can reduce the likelihood and incidence of horses in training developing discomfort from gastric acid burn and associated gastric ulcers by at least 50%.

The Texas A&M study concluded that lucerne hay (referred to as alfalfa in the USA & UK) was much more protective to the gastric lining as compared to grass/cereal hay, such as timothy hay commonly fed in the USA.

Feeding 500g dampened lucerne hay (or 4 litres of dampened lucerne chaff) about 30 minutes before working a horse helps provide natural mucilages (sticky coating and protective compounds against acid burn), saponins (soap-like compounds which 'froth up' in the stomach to spread the mucilages onto the stomach lining) and alkaline buffering compounds from calcium and magnesium in the lucerne to assist saliva in protecting the gastric lining in the upper highly sensitive area of the stomach wall, as well as enhance its buffering action in quelling excess gastric acid produced during exercise when the stomach is often empty.

When started at the beginning of a race preparation, a daily pre-training snack of lucerne hay or chaff, is likely to reduce the risk of gastric burn and ulceration in exercising horses.

## Kohnke's Own® Products of the Month

### Kohnke's Own Cell-Vital PREMIUM® and Harness Special™

If you are mixing your own feeds using grains, protein sources (sunflower seeds, cracked lupins), chaff and hay, **Cell-Vital PREMIUM®** - the 'all in-one' supplement for gallopers, or **Harness Special™** for harness horses, are the best value for money supplements available to correct low or inadequate levels in a racing ration.

**Cell-Vital PREMIUM®** contains 5 Supplet® pellets, including a calcium and a separate live yeast based pellet to balance a racing diet, with only a salt mix, such as Cell-Salts™, needed to meet salt needs. It is more economical to use as compared to adding individual Calcium, Iron, Vitamin A, Vitamin E, Vitamin B12 and Folic acid and live yeast supplements for everyday training.

**Harness Special™** is blended from 4 Supplet® pellets - you add your own calcium because most harness trainers feed at least 3kg of lucerne hay or chaff per day, but it provides higher levels of Iron (23mg/L lost in sweat), organic Selenium, Vitamin A, Vitamin E (2000 IU/dose) as well as more Vitamin B12 and folic acid, than any other supplement available, at an affordable price.

The advantage of Supplet® pellet blends is the elimination of dust, sift-out, nutrient interaction and sludging in the feed bin, as compared to powdered supplements. They can also be used to top-up a ready-mixed feed if you don't feed the full recommended amount and add your own grain to boost energy levels. Refer to the label for top-up dose rates to ensure that your horses are meeting their full nutrient demand in hard training.

**Cell-Vital PREMIUM®** is available in 3.5Kg and 20Kg packs

**Harness Special™** is available in 1.4Kg, 4Kg, 10Kg and 20Kg packs



## Handy Hint

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### Feeding Lucerne and Mucilage/Buffering Compounds Before Exercise

A practical method to minimise the risk of gastric burn and ulceration is widely used by trainers. These trainers feed a 'snack' of 4 litres dampened lucerne chaff, 3 scoopsful of **Kohnke's Own Gastro-Coat™** (assists chewing and salivation by providing mucilages lost in heat processing of feeds) and 2 tablespoonsful (40g) of fine limestone (Ag-lime) to buffer excess gastric acid, given 30 minutes before training each day and before travelling to the trials or races. This small amount of 500g of feed prior to exercise does not cause discomfort when the horse is working - in fact it helps the horse settle and get back on its feed after exercise as it helps reduce gastric acid 'splash' onto the sensitive stomach lining during exercise. If this daily routine is commenced from the day a horse is brought into training, reports from trainers indicate that most horses, including known 'ulcer' horses, appear to be very less likely to develop gastric burn and associated loss of appetite during a race preparation. The 'snack' feed can be given 30 minutes before travelling to the races to help make the trip more comfortable for an anxious horse and prior to the trip home after racing.