Soaking hay before feeding it to horses is common practice to help reduce respiratory disease. But does it really help cut the amount of dust inhaled by the horse. And for how long should the hay be soaked for the optimum effect?

A recent study at the University of Edinburgh looked at the effect of soaking hay on the dust levels in the stable. Rather than look at the dust concentration within the stable as a whole, Dr Jenny Clements and Dr Scott Pirie confined their measurements to the breathing zone - the region around the horse’s nostrils.

Although all dust is unpleasant, from the point of view of respiratory disease, the important dust is that which is small enough to reach the small airways where it may cause inflammation. This is known as respirable dust. These dust particles are generally considered to be 0.5 - 5 μm in diameter.

A battery-operated sampling device attached to the horse’s head collar allowed the respirable dust concentration (RDC) to be measured within the air that the horse was actually breathing.

They found that simply immersing the hay in a bucket of water more than halved the average and maximum RDC in the horse’s breathing zone. Soaking the hay overnight (16 hours) did result in lower RDC but the difference was not significant.

Clements and Pirie conclude that “there is probably little advantage in terms of equine respiratory health in soaking hay for 16 hours compared with simple immersion.”

It is often thought that little can be done to improve the respiratory environment when two stables share the same airspace. Now it seems that this may not be correct. In a further study, Clements and Pirie showed that improving the management of one stable had beneficial effects on the neighbouring stable.

They found that changing the feed from hay to haylage, and the bedding from straw to shavings, at the same time as improving the ventilation, led to a fall in the RDC. This was apparent both in the stable containing the horse and in the neighbouring (empty) stable within the same airspace.

For more details see:

Respirable dust concentrations in equine stables. Part 2: The benefits of soaking hay and optimising the environment in a neighbouring stable.
JM Clements. RS Pirie.
Not only do horses like a choice of forage; it appears that they prefer to find their food in different places. Results of a recent study suggests that providing multiple and single forages in several places may benefit the horses behaviour.

Most stabled horses are provided with hay in only one place. This limits their natural patch grazing behaviour. How would they behave if they had a choice of locations?

Dr Debbie Goodwin and colleagues conducted a small series of trials to evaluate the behavioural responses of stabled horses given the opportunity to choose between two locations providing either single or multiple forages.

Two stables facing each other across a common gangway were used for the study. One stable contained a single forage, (initially the meadow hay that was usually fed on the yard.) The other stable contained six different forages.

Horses were given the opportunity to choose between the stables containing the single or multiple forages. They were introduced for five minutes each of the two stables.

The horses were then released into the gangway between the stables and given five minutes to choose between the two stables. Most horses first entered the stable nearest to where they were released. However, if the stable they first entered contained only one forage, most horses moved to the other stable with the multiple forages. Overall, they tended to spend more time in the stable with the multiple forages. Some horses moved between the stables several times.

The trial was repeated, this time using the horses’ preferred forage as the single forage. Even though their favourite forage was available, horses still moved from one stable to the other.

The researchers suggest that this may indicate that horses are motivated to move between foraging locations regardless of the palatability of the forage.

So, it may be beneficial for the horses’ behaviour to provide them with multiple and single forages in different places.

For more details see:

Responses of horses offered a choice between stables containing single or multiple forages. D Goodwin, HPB Davidson, P Harris. Vet Record (2007) 160, 548 - 551
It has been suggested that diets with an increased ratio of omega-3:omega-6 fatty acids might be helpful in human conditions such as asthma. As with human asthma, recurrent airway obstruction (RAO) involves an inflammatory response. Would it be possible to reduce the inflammation and so limit the severity of the disease by supplementing the diet with omega-3 fatty acids?

Omega-3 and omega-6 fatty acids are used by the body to produce eicosanoids - chemical messengers that control complex processes such as inflammation. Generally, the omega-6 eicosanoids tend to promote inflammation. The omega-3 fatty acids tend to have an anti-inflammatory action.

Equine diets contain more omega-6 fatty acids than omega-3. Pasture contains more omega-3 PUFAs than preserved forage, but the omega-6 PUFAs still predominate.

Dr Annabella Khol-Parisini with colleagues at the University of Veterinary Medicine in Vienna, Austria, investigated the effect of giving a supplement containing high levels of omega-3 fatty acids to horses suffering from recurrent airway obstruction (RAO).

Horses received a standard diet with the addition of either seal blubber oil or sunflower oil. After 10 weeks the supplement was switched so that each horse had received both.

Seal blubber oil (SBO) is hardly a normal constituent of the equine diet. But it is an excellent source of omega-3 polyunsaturated fatty acids (PUFAs). In particular it contains high concentrations of the longer chain omega-3 fats docosahexaenoic (DPA), docosahexaenoic acid (DHA) and eicosapentaenoic acid (EPA).

Alpha-linolenic acid, the omega-3 fatty acid contained in vegetable sources such as linseed oil, must be converted to the active longer chain fats in the body.

The scientists found that both oil supplements were well accepted by all horses in the study. Adding seal-blubber oil to the diet did not significantly improve the clinical signs of lung function. However, they did find some differences between supplemented and control horses.

Major changes in plasma and white cell fatty acid concentrations occurred in the SBO supplemented horses. After ten weeks of supplementation with SBO, omega-3 PUFAs (EPA, DPA, and DHA) were significantly higher in the plasma. Only EPA reached significantly higher levels in the white blood cells.

Horses that were given the seal blubber oil had a higher ratio of omega - 3 to omega-6 fatty acids in the plasma and the white cell plasma membranes. The white cell counts in the epithelial lung lining fluid were lower in the supplemented horses.

So, although there was no improvement in clinical signs, these findings suggest that seal blubber oil might have a beneficial effect on lung inflammation.

For more details see:

Effects of feeding sunflower oil or seal blubber oil to horses with recurrent airway obstruction.
The risk of a positive dope test can be dramatically reduced by paying attention to stable management, according to recent research from the Laboratoires des Courses Hippiques in France.

Meclofenamic acid is a non-steroidal anti-inflammatory drug (NSAID) that is excreted mainly in the urine. After a single intravenous dose, the concentrations in the blood and urine fall rapidly.

Dr Marie-Agnès Popot and colleagues found the detection time after a single intravenous injection (2.2mg/kg) of meclofenamic acid differed according to the stable management of the horses involved. A full report is available in the Journal of veterinary Pharmacology and Therapeutics.

In the first experiment, six horses were housed on straw in stables that had been cleaned thoroughly beforehand. Dirty straw was removed daily and new straw added. The total meclofenamic acid and its breakdown products in the urine fell, as expected, for the first 48 hours after administration.

But then all of these horses showed an increase in levels 60 - 144 hours after they had been given the drug. It seemed likely that this was due to the horses eating straw contaminated with the drug that had been excreted in the urine.

Two horses were kept in stables that were subjected to more vigorous cleaning than those used by the first six horses, but the straw was still only partially changed each day. These horses still showed a second peak of meclofenamic acid in the urine, but it was less marked.

A single horse kept on wood shavings also showed a similar “rebound” in urine concentrations of meclofenamic acid.

Only in horses that had their stables completely cleaned out and the straw replaced daily did the urine concentrations of meclofenamic acid fall as expected and remain below the limit of quantification - (i.e. the level below which the amount of drug could no longer be accurately measured.)

Horse owners and competitors should be aware that horses might take longer than expected to clear drugs from the blood stream and produce negative urine samples.

The scientists emphasise the need to control bedding conditions following drug administration in competition horses to avoid drug recycling and prevent inadvertent positive dope tests.

Bedding may prolong positive dope tests.

For more details see:
Spurious urine excretion drug profile in the horse due to bedding contamination and drug recycling: the case of meclofenamic acid.
MA Popot, L Menaut, S Boyer, Y Bonnaire, PL Toutain.
Hand hygiene for reducing disease transmission.

In recent years there has been an increase in reports of infection spreading between horses in equine hospital and clinics. Examples include methicillin-resistant *Staphylococcus aureus* (MRSA) and *Salmonella* spp. One route by which such infections spread is on the hands of animal handlers and clinicians.

As in the field of human medicine, attention has turned to methods of reducing the risk of transmitting infectious agents from one patient to another. Washing hands with soap and water between patients is good basic hygiene practice. But there are various reasons it might not be practiced as often as it could be. Regular washing may lead to drying and cracking of the skin. Especially outside the hospital environment soap and water may not be readily available.

Alcohol-based hand rubs, with or without additional antibacterial agents, are rapidly effective against a wide range of organisms. They may have advantages over anti-bacterial soaps. For example, they may be easier and more convenient to use, and may cause less skin irritation. But are they as effective at reducing the number of bacteria on the skin?

A pilot study carried out at Ontario Veterinary College (OVC) and Colorado State University (CSU) College of Veterinary Medicine, suggest that they may be at least as effective as hand washing with soap.

Veterinary students from the two colleges carried out physical examinations on horses, under the supervision of Dr Josie Traub-Dargatz. The standardized examination procedure included inspecting the eyes and ears with a pen torch, running the hands all over the body, measuring the rectal temperature, inspecting the oral mucous membranes and picking up all the feet.

Samples were collected for bacteriological culture before and after handling the horse (from the left hand) and before and after cleaning the hands (right hand)

Three hand-cleaning protocols were assessed:

- The hands were rubbed under running water, washed for 15 seconds using an antiseptic soap containing 0.3% triclosan, and then dried with a paper towel.

- A 1 cm spot of an alcohol-based gel was applied into the palm of each hand, the finger tips of the opposite hand were dipped into the gel and then the product was rubbed over both hands until the hands were dry (This generally took about 30 - 60 seconds)

- One squirt of an alcohol lotion containing chlorhexidine was applied to each hand similar to the alcohol gel as described above and then rubbed over both hands until they were dry.

Because of the wide variation in bacterial numbers, the researchers reported the reduction in bacterial number on a logarithmic scale. They found that after washing the hands with antiseptic soap the bacterial count fell by less than 0.6 log10.

In contrast, the bacterial count was reduced by between 1.29 log10 (CSU) and 1.44 log10 (OVC) for the alcohol-gel group, and 1.47 log10 (CSU) and 1.94 log10 (OVC) for the chlorhexidine-alcohol lotion group.

Both alcohol-based hand rubs produced significantly larger reductions in bacterial count compared with the hand washing. The chlorhexidine-containing alcohol rub appeared to be slightly more effective than the alcohol gel but the difference was not statistically significant.

The study showed that the alcohol-based products were effective at reducing the bacterial counts, even though they are not intended for use on grossly soiled hands. Dr Traub-Dargatz points out that this is an important finding for ambulatory practitioners who may not have ready access to hand-washing facilities. However there was no evaluation of the impact on viruses or on some specific bacteria that may pose a nosocomial risk such as *Clostridium difficile*.

For more details see:

Researchers at the University of California, Davis have developed a new test that should help eliminate a debilitating skin disease.

HERDA (Hereditary equine regional dermal asthenia, also known as hyperelastosis cutis) causes weakness in the skin, especially along the back, which stretches and tears easily. Signs of disease often do not become apparent until the horse starts to be broke to saddle at about two years old. Affected animals have a poor quality of life and are usually euthanized.

Quite how the disease has its effects is not certain, but it is thought that it may be due to a failure of the horse’s normal healing processes or a deficiency of the immune system.

The disease is caused by a homozygous recessive gene. Horses with only one copy of the mutant gene are carriers. Breeding two carrier horses gives a 25% chance of producing an affected foal. Breeding a carrier horse with a normal horse will not produce an affected animal, but stands a 50% chance of producing another carrier.

An increase in number of affected animals seen recently is thought to be related to selective breeding programs. The condition is particularly common in certain lines of cutting horses.

Horses often only show signs after being sold on from their breeders, who may be unaware of the carrier status of their breeding stock. Having a test to identify carrier animals will allow them to control their breeding program to avoid producing affected animals.

Dr Danika Bannasch and colleagues at the University of California Davis School of Veterinary Medicine identified a mutant gene that was homozygous in all 64 of the affected horses in the study.

They traced the mutation to chromosome 1, the largest of the horse’s chromosomes. They did this by identifying the section of the genome that was identical in horses affected with the disease. Then, by comparing related regions of chromosomes of other species, such as humans, dogs and cows, they narrowed it down to a group of 20 genes. Finally by analysing those genes they identified the mutation.

When they looked for the mutant gene in apparently normal quarter horses they found it in about 3.5% of them. This is similar to the incidence of the carrier state suggested by previous studies.

“Identification of the gene enabled us to develop a DNA screening test to help horse breeders avoid producing horses with this disease,” Bannasch said. “Equally important, the test should prevent the unnecessary destruction of young horses that actually have less serious skin irregularities, which can be mistaken for the early stages of HERDA.”

For more details see:

Homozygosity mapping approach identifies a missense mutation in equine cyclophilin B (PPIB) associated with HERDA in the American Quarter Horse. RC Tryon, SD White, D L Bannasch. Genomics (2007) doi: 10.1016/j.ygeno.2007.03.009
Laryngeal disease in draft horses.

Laryngeal paralysis (idiopathic laryngeal hemiplegia, ILH) is considered to be a problem mainly of taller horses.

The larynx is an important site of performance-limiting abnormalities in the horse. It acts as a shutter to keep food material out of the lower airway. When the horse breathes in, the arytenoid cartilages and the attached vocal folds are pulled wide open (abducted) to allow the air to pass. Any significant obstruction to airflow through the larynx may limit the horse’s performance.

Between 2% and 10% of Thoroughbreds are affected. In athletic animals the condition can have a significant effect on performance.

But what about draft breeds? As they work at slower speeds the condition may go undetected and any effect on performance may be small. However, the roaring noise that is often a sign of the condition, may still be heard.

To investigate the extent of the problem in draft horses, veterinarians working at the Michigan State University Veterinary School examined some of the horses at the 2005 Michigan Great Lakes Draft Horse Show.

Lead researcher Jeffrey E Brakenhoff DVM examined 183 of the horses at the Show, at which some one thousand draft horses were entered. Overall, 35% of draft horses were affected with ILH.

The researchers found that the different breeds of draft horses were affected to differing extents. Most commonly affected were Belgians (42%), followed by Percherons (31%). The condition was less common in Clydesdales, of which 17% were affected.

In Belgians, the researchers found a significant relationship between height and the risk of ILH. Of the Belgians with ILH, 83% were 183cm or taller. In contrast, only 48% of Belgians with normal laryngeal function were taller than 183cm.

Analysis of the records showed that for every 10cm increase in height there was a nearly 4 fold increase in risk that the horse would be affected with ILH.

A similar association between height and ILH was found in Percheron horses. However, an increase in height did not seem to increase the risk of ILH in Clydesdales.

Draft horses with ILH were no more likely to perform poorly in pulling competitions than unaffected horses. Neither did Brakenhoff find evidence of exercise induced pulmonary hemorrhage (EIPH) in horses competing in pulling competitions.

Horses with ILH tended to have higher amounts of mucus in the airway. This may be because the affected larynx is less effective at preventing dust or food debris entering the lower airway.

The researchers suggest that high prevalence of ILH in draft horses is likely to be due to selection for characteristics associated with ILH - such as horse height (at least in Belgians and Percherons).

For more details see:

The prevalence of laryngeal disease in a large population of competition draft horses.

JE Brakenhoff, SJ Holcombe, JG Hauptman, HK Smith, FA Nickels, JP Caron.

Size matters, at least for ponies. Their height determines whether they are eligible to compete in pony classes. For those close to the height limit of 148cm, a few millimetres can make all the difference. But how accurate are the methods we use to measure horses’ height? And what factors affect the accuracy?

These questions have been addressed by work carried out at the Queens Veterinary School Hospital, University of Cambridge, by Dr Luis Lamas and others. They have been looking at different methods of measuring the horses’ height, and assessing the effect of various factors on the resulting measurement.

The traditional measuring stick has a scale on the vertical portion and a horizontal arm, which is placed onto the highest point of the horse’s withers. A single spirit level helps to position the stick perpendicular to the ground.

The researchers compared the accuracy of three measuring sticks. The most accurate (or least variable) results were obtained by using a measuring stick with two spirit levels at right angles to each other on the horizontal bar. This stick gave a 57% improvement in accuracy compared with the traditional stick with only one spirit level. There was no further significant improvement in accuracy when a laser measuring device was fitted to the horizontal arm.

So for the second part of the study, which looked at the effect of various factors on the accuracy of the measurement, they used the modified measuring stick with the two extra spirit levels.

They found that there was often a slight variation in height when an individual horse was measured several times. This was so even if the conditions were the same and the same examiner carried out the measurement. Three consecutive measurements carried out by one person on the same horse gave a range of measurements of ±1.06cm.

There was more variation (±1.89cm) when three different people performed the measurements. This is likely to be due to differences in the examiners choice of the highest point of the withers and how hard they pressed the measuring arm down onto the withers.

Relaxation was an important factor in getting consistent readings. Unlike the hind limbs, which are attached firmly to the spine through the sacroiliac joint, the forelimbs are attached only by muscle. The horse’s trunk is suspended in a cradle of muscles that extends from one shoulder blade to the other. Contraction and relaxation of these muscles allows the chest (and hence the withers) to move up and down. Allowing the horses to adapt to their surroundings led to a reduction in height (0.84cm). Low doses of tranquillisers had a similar but less marked effect.

Head position had an effect on the measurements - especially if it was raised as high as possible or lowered to the ground. Raising the head resulted in a small increase in height. Lowering the head slightly produced a small reduction in height, but lowering the head to a grazing position resulted in a significant reduction.

In this study, neither transportation nor lunging exercise had a significant effect on height.

For more details see:

Some factors affecting the accuracy and variability of measurements of the height of ponies.
LP Lamas, G Giovagnoli, MF Heath, LB Jeffcott.
Veterinary Record (2007) 160, 691 - 694
Monitoring cyathostomin treatment.

A commonly used laboratory test is of little use in monitoring the response to treatment of cyathostominosis according to scientists in Scotland.

Larval cyathostominosis is one of the most serious parasitic problems of horses in temperate regions of the world. The cyathostomins (or small red worms) migrate into the large intestinal wall where they spend a variable length of time encysted before emerging. If large numbers emerge at the same time they can cause considerable damage to the gut wall.

As it is the larval stages that are responsible for the damage, no eggs are passed in the faeces. So unless the larvae themselves are found in the faeces, it is difficult to confirm a suspected diagnosis of larval cyathostominosis.

Electrophoresis of the serum proteins provides a way of separating different groups of proteins in the blood. Certain disease conditions produce changes in the relative proportions of the different bands. For example an increase in the alpha-2 globulins is associated with acute inflammation. Chronic liver disease often results in an increase in the gamma globulins. Horses with a heavy burden of large strongyles may show an increase in the beta globulins.

Serum Protein Electrophoresis (SPE) is a simple test, requiring only a blood sample. It is frequently used to assess the extent of cyathostomin (small red worm) burdens, although there is little evidence to support its use.

John Abbott and colleagues at Glasgow University School of Veterinary Medicine have been assessing whether the test is useful for monitoring the response to treatment for cyathostominosis.

They were asked to investigate a problem at a riding school. The horses were believed to be heavily infested with cyathostomins. Indeed, it was the death of one pony in the group that had alerted the clinicians to the problem. Larval cyathostominosis was confirmed on post mortem examination.

The clinicians divided the horses into three groups according to pre-treatment worm egg counts and age. Three different anthelmintics were used:
- Pyrantel - effective against adult cyathostomins.
- Fenbendazole - effective against susceptible adult cyathostomins, although resistance is now widespread. (In fact the cyathostomins in this study were shown to be resistant.)
- Moxidectin - typically highly effective against adult cyathostomins and moderately effective against larvae, including those in the gut wall.

Blood samples were taken for SPE on five occasions over a period of 80 days after treatment. Analysis of the results showed that although many of the horses had raised beta-2 globulin levels initially, they did not fall after treatment of adult (and larval) cyathostomins with pyrantel or moxidectin.

Perhaps changes in the plasma proteins would have been detected if blood samples had been taken more frequently or over a longer period. Nevertheless, these results suggest that SPE is not sufficiently sensitive to monitor changes in level of cyathostomin burden.

Abbott concludes that SPE appears to have little value for assessing the response on cyathostomins to anthelmintic treatment.

For more details see:
Pollution from horse paddocks.

Environmental contamination from horse paddocks is a growing problem, especially as more horses are housed in urban areas.

Dr Sanna Airaksinen and colleagues at the University of Kuopio, Finland have been studying the contamination caused by horses housed over winter in open stables with free access to small paddocks or exercise areas.

In particular they looked at the nutrients and bacteria in surface run-off water. Other factors measured included the electrical conductivity and acidity of the soil, and its phosphorus, potassium and nitrate content.

They compared the difference between one paddock from which the manure was removed and another that was left uncleared. Each 20 x 40 metre paddock housed three adult horses (a stocking density of 37.5 horses/ hectare). Both paddocks contained an open stable (field shelter) to which the horses had access at all times. Half of each paddock was used as a feeding and drinking area. That was also where the horses tended to defecate.

As a consequence the feeding areas of both paddocks tended to be the most highly contaminated. The potassium and phosphorus concentrations were higher in the feeding areas of both paddocks, as was the electrical conductivity of the soil. However, the differences were not statistically significant.

About 3500 kg of dung was removed from the cleaned paddock between October and April. In fact, the total amount of dung deposited on the paddock was more than that, but it was difficult to separate it from the snow during the winter.

The researchers tested the surface run-off water after one month, and again at the end of the winter, when the horses had been on the paddocks for seven months. They found the nutrient content of the water increased over the winter. For example, run-off water from the feeding area of the uncleared paddock contained fifty times more total phosphorus and phosphate after the winter than six months earlier.

The levels of nutrients found in the run-off water pose a threat to surface water quality. For example, the total phosphorus concentration in the water from the feeding area of the uncleared paddock was 40 times that found in field ditches.

So Dr Airaksinen recommends regular removal of dung from horse paddocks to limit water pollution. Particular attention should be paid to the feeding areas, which tend to be the most heavily contaminated.

For more details see:

Contamination of surface run-off water and soil in two horse paddocks.
S Airaksinen, M-L Heiskanen, H Heinonen-Tanski

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Back pain is commonly blamed with for loss of performance in horses. The complex structure of the back makes it a challenge to identify the exact nature of the problem. As well as damage to the vertebrae themselves, the muscles and ligaments may be involved.

The supraspinous ligament (SSL) runs along the middle of the back attaching to the dorsal spinous processes of the vertebrae. It may be damaged as the result of direct trauma. But in most cases, injury is thought to be due to overstretching of the ligament fibres, particularly in jumping horses.

Scanning the SSL is now part of the routine examination for investigating back pain in horses. Signs of damage to the ligament are often apparent.

Changes that might be seen include:
- darker (“hypoechoic”) patches - as an indication of acute active damage to the ligament.
- changes in the alignment of the fibres within the ligament.
- and brighter areas indicating scarring within the ligament.

But how significant are these changes? Are they necessarily the cause of the horse’s problem?

Scientists at the University of Cambridge looked at whether ultrasonographic changes are related to the use of the horse (ridden or unridden) or the presence of clinical back pain.

Dr Frances Henson and colleagues found no significant difference in the ultrasonographic appearance of the SSL between groups of ridden and unridden horses, and those with unrelated back pain.

They examined thirty-nine horses as part of the study:
- Group 1. (13 horses) had not been ridden and showed no sign of back pain.
- Group 2. (13 horses) had been ridden regularly but with no history, or current sign of back pain.
- Group 3. (13 horses) with clinical signs of back pain.

Abnormal ultrasound findings were found in all horses - regardless of whether they had been ridden or not, or shown signs or back pain. Each horse had at least one abnormality in the SSL. Most (61%) of the abnormalities occurred between the spinous processes; 39% occurred above the dorsal spinous process. Most (68%) of the abnormalities were found in the lower thoracic region (T14 - T17).

So the presence of visible changes in the supraspinous ligament does not necessarily mean they are the cause of back pain.

The scientists conclude that abnormalities may occur in the SSL without any other evidence of clinical disease. To clarify the diagnosis and prove that these lesions cause pain they recommend that local anaesthetic techniques should be used.

“The clinical importance of potentially abnormal ultrasound findings can only be evaluated when combined with clinical history, physical examination, local analgesic techniques and absence of other diagnostic evidence that might explain the origin of the pain.”

For more details see:

Ultrasonographic evaluation of the supraspinous ligament in a series of ridden and unridden horses and horses with unrelated back pathology.
FM Henson, L Lamas, S Knezevic, LB Jeffcott.
BMC Vet Res(2007) 3, 1
http://www.biomedcentral.com/1746-6148/3/3
Virginamicin and laminitis: new research.

Do you have horse that suffers from laminitis? Do you give Founderguard (TM) to try to prevent it recurring? If so, researchers at London’s Royal Veterinary College would like to hear from you.

Founderguard (TM) contains the antibiotic virginiamycin. It is believed to help prevent pasture-associated laminitis by preventing an overgrowth of bacteria that occurs in the horse’s large intestine following a sudden influx of fructans.

The long-term use of in-feed antibiotics has caused concern because of the risk of bacteria becoming resistant. This is particularly so in the case of virginiamycin and led to use of the drug in animal husbandry being banned. Virginiamycin is closely related to the streptogramin antibiotic quinupristin-dalfopristin, which is the only antibiotic that is effective against certain life-threatening human infections, such as vancomycin-resistant Enterococcus (VRE) and methicillin-resistant Staphylococcus aureus (MRSA)

The real concern is not that using virginiamycin in horses could lead to resistant equine bacteria, but that those bacteria might be able to transfer the resistance to human pathogens.

So, to limit the use of virginiamycin, it is only available in the UK under the terms of a special treatment certificate.

If it could be shown that there is little risk of human bacteria developing resistance as a result of virginiamycin being used in horses, it might be possible to persuade the government to relax the restrictions.

Dr Nicola Menzies-Gow is setting up a project at the Royal Veterinary College to investigate whether the long-term use of virginiamycin in horses with pasture-associated laminitis encourages the development of streptogramin-resistance in equine gastrointestinal enterocci.

The study plans to look for the genes for streptogramin resistance in the bacterial population of faeces of horses being fed virginiamycin. Bacteria will also be cultured in the presence of virginiamycin. The researchers hope to demonstrate that any resistance that does develop is short-lived and does not transfer to other bacteria.

To conduct the research they need faeces from horses that have been treated with virginiamycin. If you can help please contact Dr Menzies-Gow at the Department of Veterinary Clinical Science, RVC, Hawkshead Road, North Mymms, Hertfordshire, AL9 7TA. (UK).

or by e-mail : nmenziesgow@rvc.ac.uk