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# EQUINEWS®

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*Equine Q & A is the award-winning publication of Kentucky Equine Research. Its intent is to present informative and entertaining articles that advance the primary goal of Kentucky Equine Research and its worldwide affiliates—to ensure superior nutrition for all horses and ponies.*

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# Kentucky Equine Research Congratulates Team Member Champions

Justa Shameless Beggar, a two-year-old Paint colt owned and prepared by Audrey Haywood, tasted enormous success at the Queensland Paint Horse State Championships, held in July at Caboolture. Justa Shameless Beggar was named champion colt or stallion of the show after winning the futurity and amateur-owner classes. The grulla sabino colt is fitted for show by Audrey at her farm, Chance Stud, which is located in Clybucca, NSW. Audrey stands the black overo stallion Holster Special Chance, winner of state and national halter championships two consecutive years.

Audrey realizes the importance of nutrition in developing sound show horses. Therefore, she feeds StableMaster Breed 'n' Grow, a pelleted feed manufactured by KER Team Member Ridley AgriProducts. Audrey also uses several KER supplements when preparing her show horses and makes the most of feeding advice provided by Graham Jenkinson, a KER nutrition advisor.

Samantha Marquis topped the field of competitors at the Queensland State Endurance Championships, which took place August 16 and 17 at Woodford. Less than half of the riders completed the grueling 160-km ride as cold temperatures, wind, and mud wreaked havoc on the trail. Samantha and her mount, Talika Fazahma Bint Himar, conquered the conditions and tied for first place in the lightweight category. Samantha also collected best-conditioned horse honors in her division. Samantha is dedicated to providing top-notch nutrition to her competition horses and has been a long-term user of KER's nutrition advice service.

Hong Kong-based Australian David Hayes is the trainer of Elegant Fashion, winner of the Hong Kong Derby and over \$70 million (Hong Kong dollars) to date. Hayes also finished third in Hong Kong's trainers premiership with 53 wins for the season. The Hayes family relies on nutrition guidance from KER, not only for its successful racing stable but also for its breeding establishments. Horses stabled in Hong Kong are fed StableMaster Furlong, a racing feed manufactured by KER Team Member Ridley AgriProducts.

Casual Look, a three-year-old filly trained by Andrew Balding and ridden by Martin Dwyer, prevailed against a strong field to win the Vodafone Oaks at Epsom Racecourse in England this summer. The classic race for three-year-old fillies is run over a distance of a mile and a half (2.4 km), and the undulating turf


course presents a challenge to even the best-conditioned horses. The field included horses from Ireland, England, and Germany as well as Casual Look, owned by Will Farish III, as the only American entry. The pre-race favorite Yesterday, one of two starters trained by Aidan O'Brien, brought the Ballydoyne colors home in second place. Another respected horse, Hi Dubai from the Godolphin racing stable, came in fifth. Hi Dubai is trained by Saeed Bin Suroor.

Casual Look is trained and raced on feed from Kentucky Equine Research (KER) Team Member Saracen Horse Feeds. Located in Kent in the United Kingdom, Saracen formulates its Race 13 feed to provide exceptional nutrition to equine athletes.

The Vodafone Oaks is Britain's most valuable race for three-year-old fillies. Run the day before the Vodafone Derby as part of the British Horseracing Board's Summer Triple Crown series, the Oaks attracts a large and enthusiastic crowd.

Following an emerging pattern of the past few years, Empire Maker derailed Triple Crown hopes by pulling out a win in this summer's Belmont Stakes. A near-record crowd watched the Juddmonte Farms colt pass the favorite Funny Cide in the final turn and then outrun a tough stretch challenge by Ten Most Wanted to claim the victory by three-quarters of a length. A day of rain had led to a sloppy track, but Empire Maker lived up to trainer Bobby Frankel's sunniest hopes.

Frankel has enjoyed numerous successes this year including wins with Peace Rules in the Grade 1 Haskell Invitational Handicap at Monmouth and with Medaglia d'Oro in the Grade 1 Whitney Handicap at Saratoga. Other Frankel-trained horses who have visited the winner's circle are Wild Spirit (first in the Grade 2 Delaware Handicap), Aldebaran (first in the Grade 2 Tom Fool Handicap), and Johar (first in the Grade 2 San Marcos Stakes). After saddling two entries in the Grade 1 John C. Mabee Handicap at Del Mar Raceway in July, Frankel watched the fillies Megahertz and Tates Creek finish one-two in the contest. Frankel depends on KER Team Member Hallway Feeds to provide superior nutrition to all the horses in his care.

Recognizing the hard work, dedication, and skills that lead to victory, Kentucky Equine Research offers sincere congratulations to these successful horses, riders, and trainers. 

# Fuelling Champions Across the Globe



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# Kentucky Equine Research—

## *Service with a Huge Smile*



Nutrition advisor Cilla Kuiper demonstrates MicroSteed to interested clients.

Want to know more about the Kentucky Equine Research (KER) nutrition advice service and the dedicated people who spend their days doing the enviable job of talking to owners about how to feed their horses? When you submit your diet analysis request to KER, have you ever wondered how the information you give is used, and how nutritional experts come up with a suggested ration from only basic information about your horse, your location, and your current feeding programme?

KER uses a combination of experienced nutrition advisors who genuinely love their jobs and a little help from MicroSteed! MicroSteed is a ration analysis programme developed by KER that establishes a unique set of requirements for each and every horse.

Before KER can help you, a nutrition advisor must ask you a series of questions. KER advisors may spend over an hour gathering information about your horse, especially if it's impossible to see the horse firsthand. Body weight, age, breed, estimated metabolism, and work level are only a few of the facts entered into MicroSteed to calculate a horse's exact nutritional requirements.

The KER representative will ask for the exact weight of what you currently feed in kilos per day. This may seem like an odd request, but this information helps nutritionists accurately assess the current diet. Unfortunately, other



measures including beetroot tins, ice-cream containers, and other odd dippers cannot reliably be changed to kilos, so please take the trouble to weigh your feeds before requesting a diet analysis.

When an advisor asks for a medical history and information about vices or other undesirable behaviors, the responses are used by KER to further refine the requirements and are taken into account when formulating a balanced ration to suit your horse. The programme calculates requirements for nutrients such as energy, protein, electrolytes, macrominerals, trace minerals and vitamins, and then it's just a case of coming up with a ration that fully meets all of those requirements and suits the particular needs of the horse involved.

Using your geographic location, nutritionists will choose a pasture and hay type from MicroSteed's large database of Australian forage analyses. Advisors can also alter heat and humidity levels to match as closely as possible the conditions in which your horse lives and works. By asking about your preferences for pellets, home mixes or sweet feeds, KER will formulate a ration to suit you, the owner, as well as your horse. The result is a suggested ration and a full explanation as to how each ingredient is contributing to the nutritional balance of the diet and how this relates to your horse and his specific problems or requirements.

But the service doesn't end there! Along with your diet analysis, you will receive a range of articles that specifically relate to your horse. These articles are written by experienced nutritionists and explain in detail some of the aspects of equine nutrition that are pertinent to you. You will also get guaranteed satisfaction. If the suggested ration is for any reason unsuitable, KER will help you develop a more appropriate one for your horse and teach you how to use products to maximise efficiency and economy.

KER is one of the best consultants in the business for one reason: its employees are given the flexibility and the support to do their jobs as they see fit, and they are highly motivated to improve the health and performance of all horses.

Let's introduce you to the sales and advice team, the individuals with smiles that go ear to ear just because of what they get up for each morning.

Cilla Kuiper is the office-based helpline operator. She is most likely the person you will speak to when you call the 1800 number. In addition to her office duties, Cilla travels occasionally to call on local clients. A native of Western Australia, Cilla has extensive experience as well as formal education in all aspects of equine management and care, and has chosen to specialise in nutrition.

Kim Oldfield is the marketing assistant, but also has a keen interest in nutrition and enjoys manning the helpline when Cilla is travelling. Hailing from South Australia, Kim enjoys racing and rodeo when not assisting KER clients.

Megan Luckhurst is one of the mobile advisors for KER, busily scurrying around the Victorian and South Australian regions, visiting horse owners on farms as well as advising over the phone. Megan owns a beautiful warmblood mare and her only complaint is that she devotes so much to her job that she never has time to ride her!

Graham Jenkinson is the stud specialist, and with his vast experience in the industry acts as father figure and mentor to the team. His main task is taking care of many of the top studs in the Hunter Valley and Southern Queensland, and visiting prospective new clients to introduce them to the special stud service that KER offers.

Sonja Vandermark (nee Gardner) is our token Pommy. She worked at the research facility in Kentucky before making her home in Australia. She has based herself in the Northern Rivers region of New South Wales and is busily establishing the advisory service for our Queensland and New South Wales clients.

Denise McKay is the newest mobile advisor, having recently completed a degree in Wagga Wagga. Denise is now based in Sydney and looks after trainers and horse owners in that region.

Needless to say, all of our advisors feel very lucky to have such fun and rewarding careers and are happy to talk to all horse owners, from Pony Club members to Olympic champions. We believe that the key to our success is great customer service, and the ability and willingness to go the extra mile.

If you would like to speak with a KER advisors about getting your FREE diet analysis or for advice on any of your horses' nutritional problems, please call the national nutrition hotline on 1800 772 198, e-mail inquiries to [equivit@ker.com](mailto:equivit@ker.com), or visit the KER Web site at [www.ker.com](http://www.ker.com). ☺☺

## Free Feeding & Nutrition Advice

# Rags to Riches – The Story of Snow

**N**ovember 2002. Somewhere near Maryborough, a Queensland town not far from Hervey Bay, a school bus wound its way through its usual homeward run. From the window, a couple of schoolchildren spotted what looked like a dead horse lying in the ditch. When the children arrived home, they told their mother what they had seen. She decided to walk the kilometre to the spot the children had described to see if she could offer assistance.

The horse in the ditch, later named Beau, was a cob-type gelding that was starving and obviously left to perish. He was alive but just barely, as he was suffering from pneumonia and general weakness. Immediate action was required, for it was apparent nobody else cared about this animal.

With patient persistence, the mother and her children managed to get the gelding to his feet and slowly walk him to their 25-acre rented property. On further investigation of the property on which Beau had been found, a second horse, named Snow, was discovered. Even more emaciated than Beau and

locked in a small dirt yard without food and water, Snow too had almost lost his battle to live.

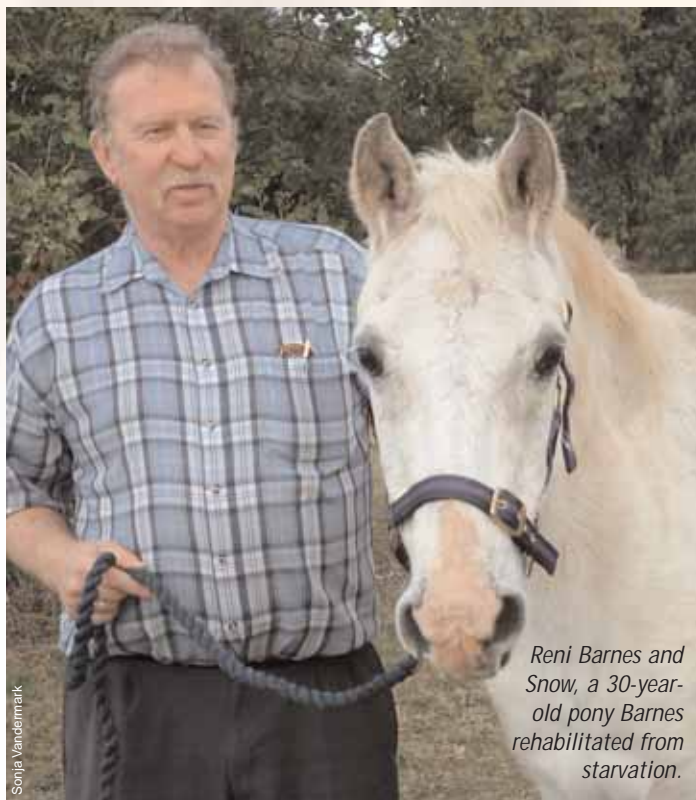
Again, the mother and children made the long journey home, this time with Snow. However, their paddocks were drought-stricken with little forage. Without much money to spare, she bought a bag of pellets from the produce store, and she divvied these out thriftily for the first few days after Beau and Snow's rescue.

A local veterinarian donated his time to help the horses. Together they nursed Beau back to health, ridding the horse of any sign of pneumonia. The mother notified the Royal Society for the Prevention of Cruelty to Animals (RSPCA) of how she had tried to help the animals but did not have the means to look after them for a long period of time. In the meantime, however, she continued to do her best.

Enter Reni Barnes, a computer shop owner from Kingsthorpe, a township just outside of Toowoomba. With the death of his beloved wife Sheila, a horse lover, in February 2002 and the absence of his horse-mad daughter who was pursuing a career in journalism in Melbourne, Reni longed for the companionship of people and horses that had been a part of his life for as long as he could remember. The proverbial straw that broke the camel's back came with the death of his daughter's pony Banner, by then his sole companion. In passing one day, he mentioned to a friend who had ties to the RSPCA at Kingaroy that he had room available for a neglected horse if one should be needed. Just days after the mother and children rescued Beau and Snow, Reni got the call.

The trip to Maryborough was almost 300 km, and Reni was not sure what to expect when he got there. What he saw on his arrival was enough to break the heart of any animal lover. The horses were nothing but skin and bones, with their spirit literally drained from them. Both horses were infested with lice and internal parasites. Their teeth and feet had been completely neglected.

The return trip to Kingsthorpe was no doubt difficult for Beau and Snow, but there was no other option, as the horses had to be transported to a place where they could be cared for properly. Snow fell



*Reni Barnes and Snow, a 30-year-old pony Barnes rehabilitated from starvation.*

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down while attempting to load into the float, and it took 25 minutes before both were settled safely inside and ready to go. The journey home was the longest and most anxious trip of Reni's life. He stopped every 20-30 minutes to let the horses rest and to check on their condition.

Just a few days after arriving home safely, Beau lost his fight for life. Despite looking more robust than his companion, the veterinarian explained that he had been much sicker and that his weakness had made it impossible for him to survive the ordeal. Reni was devastated by the loss and clung onto his hopes for Snow's survival that much tighter.

Though he was emaciated with a myriad of health problems, Snow had the desire to survive that kept him going each day. For the first few weeks Snow was understandably depressed, and though he was gaining weight, a visible difference was slow to appear. His spirit flagged. He'd been brought to a strange place that he didn't know or care to know, he'd lost his mate, and he'd been subjected to the pokes and prods of needles, multiple delousing baths, and repeated visits from the farrier and dental technician. At approximately 30 years old, Snow thought that maybe he was too old for all of this!

There were a few highlights to his convalescence. Plentiful hay filled his aching belly and Reni's companionship provided more company than he'd had in months.

After six weeks with little noticeable improvement, Reni decided that he needed some advice on feeding Snow. His wife and daughter had always been the horse-crazy family members, and though he really wanted to help, Reni realized he wouldn't be able to do this alone. Reni searched the Internet for advice on how to deal with a neglected horse and eventually found the Kentucky Equine Research (KER) Web site. With nothing to lose, Reni sent an e-mail asking for feeding suggestions that might start putting some weight on old Snow. What he got in reply was not only some help with how to feed his new charge, but a new group of concerned friends who from then on followed Snow's progress every step of the way.

Cilla Kuiper, one of KER's nutrition advisors, offered some suggestions of what to feed and how to feed it. On her advice, Snow began to eat a diet that consisted primarily of roughage. He was also given Barastoc Senior, a pelleted feed specially formulated for geriatric horses, and Equi-Jewel, a high-fat rice bran supplement. Multiple e-mails, usually progress reports and more questions and answers, flowed steadily between Reni and Cilla. The story had touched Cilla so much that she related every detail to

her colleagues who were all moved by Snow's plight and Reni's kindheartedness in bringing him back from the brink.

Snow stuck very close to Reni's house for the first three to four months and became worried when he was left alone. He also became a bit of an escape artist in his efforts to slow Reni's daily departure for work. Sneaking through the gate and ambling off down the road became a hilarious game for Snow, and meant that Reni would lure Snow back into his enclosure with food. Snow was hungry all the time by now, devouring his KER-prescribed feed and always looking for more. He ate the cat biscuits that Reni left on his porch for the cats, and he gorged on the pasture and hay that he had access to, which was no easy feat without any front teeth! He would wander into the feed shed whenever Reni's back was turned and stick his head in the bag of Barastoc Senior or Equi-Jewel in utter delight with his own cleverness. He even tried to walk into the house if the door was left open!

Snow's appearance started changing almost immediately on the new feeding program. As he started to gain condition, Snow became more independent and eventually realised that the van always came back, and that Reni was always going to be there for him.

It wasn't long before Snow became a bit of a local celebrity, with constant visits from neighbours offering scraps of veggies, apples, carrots and bread. He delighted in the fact that his belly was always full and he had lots of new friends. His spirit returned and he actually started to believe he was a bit of a superstar. These days, in the moments that he's feeling particularly precious, he simply turns his heels



# Brief Guidelines for Rehabilitating the Neglected Horse

**S**o, you've just acquired a neglected horse that you're going to nurture back to health. Do you know what you're getting into? Rehabilitating a chronically neglected horse is a noble and extremely rewarding process, but it's no easy task. Are you sure you can handle this huge responsibility?

When presented with such an opportunity, you must first assess the likelihood of success, as some horses may be too ill to recover and lead healthy, normal lives. In some instances of severe neglect, it may be kinder to euthanise a horse than to put it through the stress of a demanding rehabilitation program. One factor to consider is the age of the horse and condition of the teeth; an aged horse with poor teeth is difficult to save, even in the best of circumstances. Hardier breeds such as ponies, warmbloods and drafts may be easier to rescue and more likely to fully recover than finer breeds such as Thoroughbreds and Arabians. The presence of severe underlying clinical problems, in addition to malnutrition, may prevent the horse from making a full recovery.

Once you've determined the horse is a strong candidate for rehabilitation, you should consider whether you are able to afford the time, medication and feed required. You will also need access to an equine veterinarian, preferably one with experience in refeeding neglected horses, and appropriate facilities.

The horse should undergo a thorough veterinary inspection at the onset of a rehabilitation program. When rehabilitating a horse, it is best, from a legal standpoint, to be under the guidance of a veterinarian to avoid being charged with neglect yourself.

Evaluating teeth, worm and lice burden and any physiological problems that the horse may have and discovering any ailments that may make attempts at rehabilitation futile will save time, money and possibly heartache. A blood test is useful in eliminating diseases or organ weaknesses as possible causes of condition loss.

The basis of the wasting should be established, if possible. If the condition is thought to be caused by malnutrition alone, with secondary factors being manageable, then the likelihood of recovery is good. The horse will need regular checkups from the veterinarian throughout the rehabilitation process.

The first 24 hours will be the hardest to endure. Once the horse is eating well, it will take several weeks for it to gain enough energy to start depositing muscle and fat. Changes in disposition and attitude are more noticeable during the first week or two than any real increases in body weight. As the horse becomes familiar with eating and is slowly moved to a more energy-rich diet, you will begin to see an improvement in body condition. Rehabilitation is, however, a slow process and may take as long as three to six months before the horse resembles a normal, well-cared for animal.

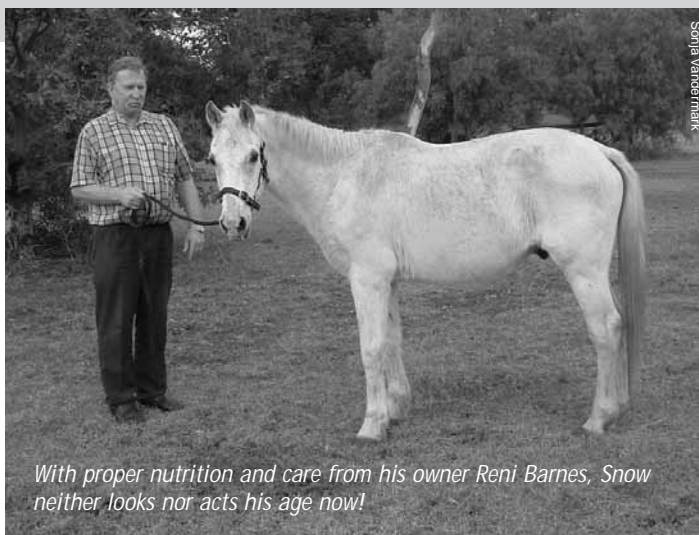
Further information and detailed feeding plans can be obtained from Kentucky Equine Research by calling 1800 772 198.

More health care and welfare information is available through local horse councils, veterinarians, Pony Club associations, the RSPCA, the Australian Horse Industry Council or the Bureau of Animal Welfare (Department of Agriculture and Rural and Affairs). ■

and with a flick of the tail trots away up the paddock with but a sideways glance. Reni calls him a precocious twit, but he wouldn't give him up for quids. The two are the best of mates and it's obvious to anyone who sees them together that Snow has adopted Reni as his saviour and messiah every bit as much as Reni has adopted Snow as his new best mate.

With the onset of winter, Snow had built up a good covering of fat and a coat that would make a yeti proud! In recognition of his wonderful contribution to the health of this equine, and for letting us make public their heart-warming story of friendship and courage, KER and Ridley AgriProducts said thank you to Reni and Snow by providing a new rug for winter and halter and lead. Snow would also like to thank Ridley AgriProducts for his three free bags of Barastoc Senior and KER for two bags of his absolute favourite food in the world – Equi-Jewel. He looks forward to getting even fatter with the help and advice that Reni gets from Cilla and anticipates a bright and happy journey through his twilight years with Reni.

Reni had an incredible support network through Snow's convalescence. Thanks must go to both the local veterinarian Max Wilson for numerous visits and advice, and to Allen's Rural Store for its assistance with hay and feed.



*With proper nutrition and care from his owner Reni Barnes, Snow neither looks nor acts his age now!*

KER would like to praise the work of Reni and all the other kind and selfless people who help to rehabilitate neglected horses. With organisations such as the Horse Welfare Society Victoria Inc (formerly Project Hope) dedicated to filling the gaps left by the law and the jurisdiction of the RSPCA, and with people who care enough to give up their time, money and love to put right what has been done wrong, our world becomes more pleasant, we can fight the cruelties and injustices that we see every day and we can all be reminded of the power of a little kindness.

Thank you Reni and Snow! Rest in peace, Beau. ☹☹

BRIDGE THE GAP BETWEEN

# OCD AND Nutrition



Conformation flaws of the limbs are easily identified. With time, even the most novice horsemen can develop a practiced eye for a buck-kneed, splay-footed, calf-kneed, or pigeon-toed horse. Horses with straight legs often, though not always, remain sounder through the rigors of training and competing than their crooked-legged counterparts. From casual inspection, however, it's impossible for horsemen to know what's happening to bone beneath the skin. One of the most career-debilitating bone afflictions of young horses is osteochondritis dissecans (OCD), a developmental orthopedic disease that's invisible to the eye.

OCD can be defined simply as an interruption in bone development.

During normal bone growth, cartilage is remodeled into bone. It is during this physiologic revision that ossification goes awry and OCD lesions originate. On radiographic or arthroscopic examination, these lesions appear as flaps, which in severe cases may actually detach from the bone and enter the joint capsule. These free-floating flakes of cartilage are called joint mice.

Some lesions are detectable when horses are as young as one month of age, but most are likely formed by the time horses are six months old. Usually, however, lesions are not diagnosed until a later age. In racehorses such as Thoroughbreds and Standardbreds, lesions are often detected when horses enter training, usually by two years of age. Because warmbloods are not started in training until much later in life, lesions may not be discovered until horses are five or six years old.

Three categories of OCD lesions are recognized: (1) those showing clinical and radiographic signs; (2) those showing clinical without radiographic (but arthroscopic) signs, and (3) those showing radiographic but no clinical signs. Clinical signs of OCD include joint effusion or swelling and lameness of varying degrees. Often clinical signs are absent altogether.

In typical cases of OCD, horses have one or two lesions that are frequently bilaterally symmetrical, which means that if the joint of one hind limb is affected the contralateral joint may also be affected. Severity of bilaterally symmetrical lesions may differ; only one, for instance, may cause lame-

ness or other clinical signs of disease. Interestingly, if a lesion is found in one fetlock, practitioners will often radiograph the remaining three fetlock joints because there is a tendency for OCD to be present quadrilaterally. Once again, clinical signs may not accompany all lesions. In rarer instances, horses present with multiple lesions in various joints and bilateral symmetry may not be evident.

Veterinarians have pinpointed certain joints in which lesions typically occur including the fetlock, hock, stifle, and shoulder. Though less common, lesions have also been described in the elbow, hip, and cervical vertebral joints.

Much of the research conducted on OCD has involved Thoroughbreds, Standardbreds, and various warmblood breeds, primarily Swedish and Dutch Warmbloods. Though researchers have focused on these breeds, OCD has been identified in seemingly all breeds of horses. One study involving 161 horses affected with stifle OCD included 82 Thoroughbreds (51%), 39 Quarter Horses (24%), 16 Arabians (10%), 9 warmbloods (6%), 5 crossbreds (3%), 3 Paints (2%), 3 Appaloosas (2%), and 4 horses of unknown breeding (2.5%).

Researchers have been wrestling with OCD for nearly 50 years; the first mention of the syndrome appeared in veterinary literature as early as 1947. As interest in OCD has mushroomed in the scientific community, a well-defined set of causative factors has been cataloged. Sitting atop the list of potential causes is nutrition.

**“Lot 241 is a nice-bodied colt and bred well, but has Doc read the radiographs yet?”**

**“He stands correct, but how does he look on film?”**

**“She’s a great mare but it seems every one of her foals has problems with OCD.”**

## Reducing the Incidence of OCD Through Nutrition

Nutrition is thought to play an important role in the pathogenesis of OCD. Deficiencies, excesses, and imbalances of nutrients may result in an increase in the incidence and severity of the syndrome.

Appropriate mineral balance of rations is of particular importance in deterring the development of OCD. Deficiencies of calcium, phosphorus, copper, and zinc may invite bone growth problems. Less common than mineral deficiencies are mineral excesses, which usually occur because of overfortification or environmental contamination. Though massive supplementation can occur, environmental contamination is a more likely cause. If a farm is experiencing an unusually high incidence of affected foals or if the location and severity of the lesions are abnormal, environmental contamination should be investigated. Blood, feed, and water analysis should be performed. Chemical analysis of hoof and hair samples may uncover the underlying cause in such a situation. Farms that are located near factories or smelters are the most likely candidates for this type of contamination, although OCD from a zinc-induced copper deficiency has been reported on farms using fence paint containing zinc or galvanized water pipes.

The ratio of minerals may be just as critical as the actual amounts of individual minerals in the ration. Too much calcium, for instance, may stand in the way of proper absorption of phosphorus, copper, zinc, and iodine.

Excessive energy intake can lead to rapid growth and increased body fat, which may predispose young horses to OCD. A study conducted by Kentucky Equine Research in the mid-1990s revealed that growth rate and body size may increase the incidence of OCD in Thoroughbred foals. Yearlings that possessed OCD of the hock and stifle were large at birth, grew rapidly from three to eight months of age, and were heavier than the average population of yearlings.

The source of calories for young horses may also be important, as hyperglycemia and hyperinsulinemia have been implicated in the pathogenesis of OCD. Foals that repeatedly experience an exaggerated and sustained increase in circulating glucose or insulin in response to a carbohydrate (grain) meal may be predisposed to the development of OCD. Studies with fetal and foal cartilage cells suggest that the role of insulin in growth cartilage may be to promote cell survival and that hyperinsulinemia may be a contributory factor in OCD. To help protect foals from OCD, therefore, it is prudent to feed them concentrates that produce low glycemic responses, such as those that incorporate fat and fiber as energy sources. These specialty

feeds minimize the amount of sugar and starch in the diet, thereby reducing the likelihood of OCD and Kentucky Equine Research has developed several low-glycemic feeds including NRM Evolve.

## Feeding Practices

One of the most common problems of feeding young horses is excessive intake that results in accelerated growth rate or fattening, two conditions that may result in OCD. Calorie consumption is key. Large intakes of grain are appropriate if the forage is sparse or poor quality. For example, grain intakes as high as 2% to 2.5% of body weight may be necessary to sustain reasonable growth in weanlings that have no access to forage other than tropical pasture. Conversely, grain intakes higher than 1% of body weight may be considered excessive when weanlings are raised on lush pastures or have access to high-quality lucerne hay.



Mark Lewellyn

Occasionally, the concentrate offered to a growing horse is incorrectly fortified to complement the forage that is being fed. The problem occurs particularly when the forage is mostly lucerne or clover. Most concentrates for young horses are formulated with levels of minerals and protein needed to balance grass-based pastures or hay.

Inadequate fortification of grain is another concern for managers of young horses. The most common reasons for inadequate fortification are using unfortified or underfortified grain mixes, using correctly fortified feeds at levels of intake that are below the manufacturer's recommendations, or using fortified feeds diluted with straight cereal grains. These errors in feeding can be corrected by the incorporation of a highly fortified grain balancer supplement. Feed stores typically stock a supplement pellet that will round out the nutritional profile of the young horse's diet.

### Prevention

In almost every circumstance of OCD, the surest way of determining if nutrition is a contributing factor is to perform a ration evaluation, which compares the intake of several essential nutrients with the requirements of the horse. Gross deficiencies or excesses of key nutrients can then be identified and corrected.

Ration evaluations can be approached in two ways. One way is to add up what is being fed and compare it to the horse's requirements. This is actually more difficult than it may first appear since most horsemen do not actually know exactly what their horses are eating. Alternatively, a new ration may be developed.

One easy way to determine the appropriateness of a ration is through the use of Gro-Trac, the growth-monitoring software designed by Kentucky Equine Research. One special feature of Gro-Trac is the ration evaluator, which allows users to work with their feed manufacturers in determining the best feed for their horses. For more information on Gro-Trac, please contact Kentucky Equine Research at 1800 772 198.

Not all cases of OCD can be traced to a nutritional origin. Other factors such as heredity, management, growth rate, and trauma may also be implicated. By feeding a well-balanced, low-starch diet and aiming for moderate growth, breeders can help build a sound skeleton and a solid foundation for a long-lasting athletic career. ∞

### 2003 Kentucky Equine Research Nutrition Conference

For the first time since its inception 13 years ago, the Kentucky Equine Research Nutrition Conference was held on foreign soil—Sydney, Australia. From August 23-25 more than 200 horse owners, stud managers, scientists, and veterinarians gathered in the capital city to attend a series of talks chock-full of information on growth and development of the equine skeleton.

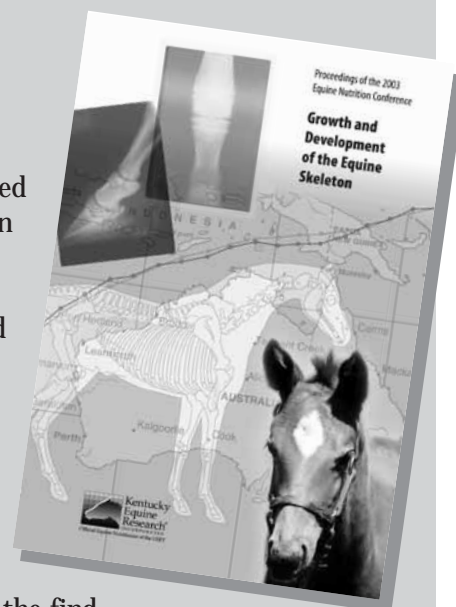
The symposium included presentations by leading researchers in the field of equine orthopedics. The featured speaker of the conference was Dr. C. Wayne McIlwraith of the University of Colorado, widely acclaimed as the pioneer in equine arthroscopic surgery. In addition to equine nutritionists Drs. Joe Pagan, Larry Lawrence, and Peter Huntington from Kentucky Equine Research, presentations were given by Drs. Brad Dowling, Neville Grace, Andrew Dart, and Elwyn Firth, as well as Ms. Elizabeth Owens.

Topics presented at the symposium included overview of bone disease, surgical and medical management of osteochondritis dissecans (OCD), the role of nutrition in the management of developmental orthopedic disease (DOD), new developments in treating hock lameness, principles of bone development, nutritional assessment of weanlings and yearlings, managing growth for different commercial end points, new techniques for studying bone disease, conformation and its relationship to soundness, effects of growth promotants in growing horses, new techniques for measuring growth in foals, and the effects of exercise and training on skeletal development.

### Miss the Conference But Still Want the Goods?

Information disseminated at the conference has been archived in spiral-bound proceedings. Sixteen fact-filled papers are contained in this 200-plus-page booklet. This compilation is undoubtedly one of the most comprehensive publications on growth and development of horses ever assembled.

All of the articles contain the findings of recent scientific trials and valuable reference lists. To order a copy of the proceedings, contact Kentucky Equine Research at 1800 772 198, 03 9530 6339 (fax), or e-mail at [equivit@ker.com](mailto:equivit@ker.com).



# FEEDING HORSES IN AUSTRALIA AND NEW ZEALAND

Australia and New Zealand are great horse-producing countries. Australia has the second largest horse population in the Western world, and New Zealand horses have long plundered Australia's richest races. Over 18,000 Thoroughbred foals are born each year and about 36,000 race annually at one or more of Australia's 400 racetracks. The Standardbred industry also thrives in Australia where approximately 9,000 foals are born yearly. Other popular breeds include Arabians, Quarter Horses, warmbloods, and various pony breeds. Equestrian sports are very popular and Australia has taken the gold medal in the team three-day event competition at the last three Olympics.

Horses are bred and trained in a variety of conditions and climates in New Zealand. On the North Island of the country, which is about the size of Japan or California, pastures remain green and high-quality throughout the year, and breeding of Thoroughbreds and Standardbreds is a widespread hobby and business. In addition to racing, New Zealanders have excelled at three-day eventing in recent years, and New Zealand-bred horses are renowned for versatility and toughness.

While horses in Australia and New Zealand still require top-notch nutrition to achieve performance goals, they are fed somewhat differently than horses in North America and other parts of the world.

## Pastures

Snow falls only rarely in areas where horses are kept throughout Australia, so horses can graze pastures during most of the year. Grazing horses are typically not stabled at night and have carte blanche access to pasture. Overstocking, understocking, and poor pasture management practices are common, so great variation in pasture quality and quantity is apparent. In recent years research and extension activities have been directed at maximizing pas-

ture growth and reducing the costs of supplementary feeding. In southern temperate areas, heat and lack of rain cause pastures to dry off over summer and autumn, creating a need for supplementary feeding of horses during this time of year. Irrigation is used in some areas to maintain growth of pasture during dry periods. In northern parts of the country, subtropical or tropical conditions prevail so the growing season occurs during summer. In northern Australia, tropical grasses such as kikuyu, buffel, and setaria are common. These grasses have high oxalate levels that interfere with calcium digestibility and can lead

to the development of nutritional secondary hyperparathyroidism (big head) and various bone disorders.

The North Island of New Zealand is warm and receives more than adequate rainfall. This area is home to the main Thoroughbred breeding studs. The South Island of New Zealand has traditionally been the primary breeding region for Standardbreds. Pastures are mainly ryegrass and clover on both islands. South Island pastures may experience isolated snowfalls from May through September. Poisonous plants in horse pastures are not a concern in New Zealand. Pastures rarely dry off over summer in the North Island, but they do become barren in the South Island. Mares are often managed without supplementary grain as high-quality pastures supply enough energy and protein; however, pastures do not meet all mineral needs.

## Hay and Chaff

Australian horses are fed forage in the form of hay, chaff, pellets, and cubes. Lucerne (alfalfa) is the most common hay fed to horses, followed by grass (meadow)



and oaten hay. Lucerne hay is grown in all Australian states and is widely available, whereas grass hay is harvested in southern areas. Lucerne and grass hay is usually packed in small bales and the unit of feeding is a biscuit, which is similar to a flake. In northern Australia the only hay available is lucerne. While this hay is acceptable for various classes of horses, lucerne can be problematic for some performance horses because of the excessive amount of protein.

The nutrient value of grass hay can vary widely according to the composition of the grasses, time of haymaking, and other factors. Clover is often intermingled with grasses. A high clover content will increase the nutrient content of the hay, with good-quality clover hay approaching lucerne hay in nutrient density and palatability. However, it may be difficult to purchase clover hay year-round.

The climatic conditions at the time of haymaking are usually favorable, so hay grown in Australia is generally free of dust, molds, and other contaminants. Oaten hay is fed less commonly because production is lower and storage is more difficult. It is fed in sheaves or bales. Because hay quality is generally acceptable, horses are not usually fed haylage (fermented forage).

Australian horses are fed large quantities of chaff or chopped hay. Chaff is made in commercial chaff mills and marketed in large (40-kg) bags. Chaff can also be produced on the farm using a small-scale chaff cutter. Many horses are fed a mix of oaten or wheaten chaff and lucerne chaff with their grain. Most commercial chaff is steam-cleaned to remove dust and allow easier cutting. Some chaff is rough cut and includes some longer fiber. Good-quality chaff should not contain any formed grain, but grain kernels are often found in chaff.

Some manufacturers add oat-laden chaff to their products because the grain is cheaper than pure chaff.

The principal advantage of chaff is that it can be mixed with the concentrate portion of the feed so that the horse consumes forage with the concentrate. This can slow the intake of concentrate and prevent starch overload in the large intestine. There is considerable debate as to the merits of oaten chaff over wheaten chaff and vice versa. In some parts of the country it is easier to get good-quality wheaten chaff, while in other areas high-quality oaten chaff is more readily available. If you have a horse that cannot tolerate any oats, it may be best to use wheaten chaff, but in other cases chaff is chosen on quality and price.

Because chaff is so popular, use of forage cubes or pellets is not as common as in other countries. The use of



lucerne pellets instead of chaff has increased recently on studs and spelling operations, where pellets can be stored in silos. This can reduce the cost and handling required compared to bagged chaff. Forage cubes have been developed only in recent times and have not made any significant impact on feeding practices. Unlike countries in the Northern Hemisphere, beet pulp and soy hulls have only recently become available as alternative forms of digestible forage. Alkali-treated sugarcane bagasse (plant residue) is used as a cheap fibre source in some commercial feeds made in North Queensland.

In many southeast Asian countries, all horse feed is imported. This makes forage very expensive, and there is a tendency to feed less than is desirable for digestive health. Compressed hay is imported but bagged chaff is a more popular feed because it is easier to transport. In India fresh lucerne and very poor-quality grass hay are the popular forages.

In New Zealand, lucerne and oaten chaff are the primary forms of forage added to grain. Meadow and lucerne hay is fed in similar quantities to stabled performance horses and horses in the paddock. The haymaking season is shorter and more difficult in New Zealand, and therefore a great deal of care is needed to ensure hay is cured properly. Because it is harder to make good grass hay in New Zealand, haylage is becoming popular and is made commercially or on the farm. Most racing stables have access to pasture and will often cut about 6 kg of wet pasture for each stabled horse.

### Whole Grains

Australians have traditionally fed more straights or cereal grains than premixed feeds, although this pattern is changing with the development of better quality feeds

and recognition of the performance, convenience, and value these products can offer. Oats are by far the most common grain fed to horses based on safety, price, and the fact that there is no need for further processing. Australian oats are usually lower in protein than many Northern Hemisphere varieties, averaging less than 9% crude protein on an as-fed basis. Corn or maize is more expensive than oats and cannot compete on a cost per energy basis, but because it is often necessary to increase the energy density of the ration, corn is sometimes used. It is usually fed in amounts of less than 2.5 kg and is most popular with racehorse trainers. Corn is fed cracked, steam flaked, or extruded.

Barley is perceived by many to be a cool feed (one that will not cause a shift in behavior) and is fed either steam rolled, micronized, extruded, or boiled, but again it is usually fed in small amounts. Barley is a popular feed in show-ring circles where it is often the grain of choice. Sorghum is an economical grain grown in Northern Australia but is not widely used. Triticale, a hybrid between wheat and rye, is a recent addition to the grain menu of some Australian horses. It is reported to be an effective and safe feedstuff, but there is no published information on its digestibility. Limited studies have shown that the cultivars of triticale that are closest to rye (Abacus and Madonna, for example) are well digested by horses, but cultivars closely related to wheat (Tahara) are not well digested in the small intestine.

Wheat bran and pollard are by-products of flour milling that are common ingredients in pelleted feeds and home-mixed diets. Wheat bran has been a popular ingredient, particularly for use in a wet feed (bran mash) with various supplements, but its use is declining and the quality of the bran available these days is dwindling. Wheat pollard (shorts) has been popular among show-ring enthusiasts that want to put condition on horses without feeding extra grain, but because pollard is low in fibre, there are better ways to feed horses and achieve the desired outcome. Stabilized rice bran is also used in many feeding programs for body and coat conditioning due to its high fat content. It is also commonly used in diets requiring energy from sources other than grain.

### **Commercial Feeds**

The range and quality of commercial feeds available in Australia have increased dramatically in recent years. Feed mills produce pelleted, textured, and extruded feeds. Some popular feeds are designed to be used as concentrates fed at approximately 2.5 kg per day, with horsemen adding straights according to the nutritional needs of the horse. Some low-energy textured feeds contain lucerne or oaten chaff as a source of fiber. These are ideal feeds for horses in light work.

Recently feeds for performance and growing horses have been produced containing high levels of fat. Specialized feeds have been developed for horses prone to tying up or behavioral problems.

### **Protein Supplements**

In racehorses, protein supplementation is usually provided by the feeding of lupins, tick beans, peas, and sunflower seeds. These supplements contain a higher energy content than traditional grains, but they are fed in smaller amounts. Linseed and cottonseed meals are traditional protein supplements, but the use of these additives has declined while canola meal use has increased. Lupins are legume seeds that are becoming an increasingly popular ingredient in the diets of horses. They are a palatable energy and protein source with a low starch and high fibre content. However, lupins have low levels of methionine and tryptophan. Because of their hard outer covering, lupins are usually fed cracked but can also be steam-flaked or micronized in modern mills.

Tick beans and peas are also fed as protein supplements; they are lower in protein than lupins and have moderate levels of limiting amino acids, but contain higher starch levels than lupins. Some varieties of beans and peas are unpalatable or contain toxic components. The contention that linseed meal or sunflower seeds make horses “look better” is likely to be due to the high oil content, as both provide relatively poor-quality protein.

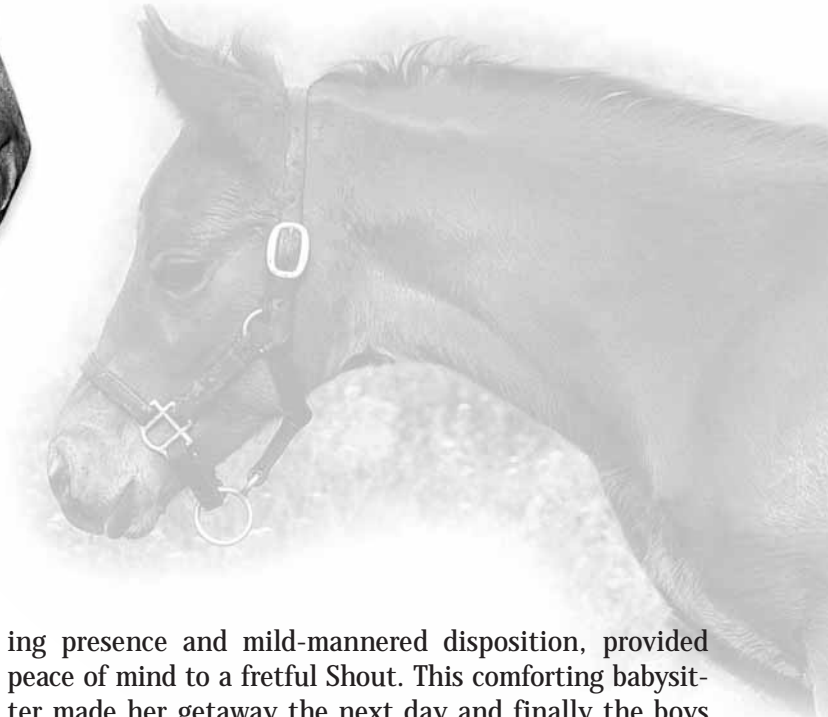
On breeding farms, the value of soybeans is increasingly being recognized, and it is fed as soybean meal, which has had most of the oil content removed, or full-fat soybean meal. The full-fat version contains 20% fat but is only 35-38% protein. However, some breeders still use protein supplements with low-quality protein such as sunflower seeds and cottonseed meal. Copra (coconut) meal has become a popular supplement in recent years.

Protein content in high-quality New Zealand pastures varies from 16-28%, and where horse have access to this pasture, protein intake is not the major limiting factor to growth. Commercial feeds tend to be formulated with lower protein content in New Zealand than similar feeds in Australia, where pasture quality is not as good at all times of the year. Protein supplements given to racehorses are mainly full-fat soybean meal, peas, and sunflower seeds, despite their high price.

The components of a typical diet for horses in Australia and New Zealand may seem unusual to the horse community in North America and other parts of the world, but nutritionists have adapted these ingredients into well-balanced rations that support growth, performance, and reproduction. ☺☺



# The Last SHOUT



**O**n August 26, 2003 the Quarter Horse colt known as Shout celebrated five months of life. In recent weeks he has completely shed the winterlike coat that all foals have and now has a sleek, rich chestnut coat that is only marred by the occasional black streak, compliments of a freshly painted fence. Over the last few months, he's even developed an amicable, though not loving, relationship with the farrier. So life as Shout knew it was progressing simply and wonderfully.


Only a few days following this birthday of sorts, Shout experienced his first step to independence—weaning. To say Shout greeted this day of reckoning with his usual flair for the dramatic would be a colossal understatement. But did he handle this separation as well as many other anxious, fear-stricken youngsters? Absolutely.

Shout and his playmate Higgins were weaned gradually from their dams. Shout's mother was the first to disappear, leaving Higgins and his dam to comfort Shout. As expected, the first wave of apprehension was the most intense, with a cacophony of whinnying and pounding hooves. When the realization hit that his dam was nowhere to be found, Shout became uneasy and lapped the field at a gallop. Higgins did little to ease Shout's anxiety, merely watching the seemingly half-crazed Shout careen around the field. Skean seemed less fazed by the separation; she may have even been relieved to bid farewell to her youngster.

Once the initial frenzy waned, Shout gradually became accustomed to his parentless state and resumed his usual activities, which included dodging playful nips and kicks from Higgins, eating ferociously, and dozing contentedly in the autumn sun. It was not as though Shout and Higgins were completely abandoned, though. Higgins' dam, a commanding though calming force with her tower-

ing presence and mild-mannered disposition, provided peace of mind to a fretful Shout. This comforting babysitter made her getaway the next day and finally the boys were alone to fend for themselves. So far they've done just fine.

By the beginning of September, Shout had weighed in at 290 kg, gaining nearly 23 kg during his fifth month of life. The colt registers slightly above the average for Kentucky colts born in March. Over the past month, he gained approximately a kg per day, which is slightly less than the 1.4 kg a day he was gaining in July. Higgins, though significantly taller, still lagged behind Shout by a few pounds, but his daily gain was just over a kg per day.

What does the future hold for Shout and Higgins? Shout was bred to be a show-ring hunter, so he will enjoy the luxury of unlimited grazing and casual handling for a couple of years before he's placed in training. If all goes as planned, Shout may be seen at a show near you! Higgins, on the other hand, was bred for the racetrack. Because he is structurally correct, has outstanding bloodlines, and is early-maturing, he is headed for the sales ring in late fall. Though the colts are taking different paths now, their lives may soon intersect again. After all, stranger things have happened. 

JUST ADD

# FAT

Excessive fat in the diet is a menace to human health. An undeniable link exists between obesity and hypertension, elevated cholesterol, diabetes, heart disease, arthritis, and some forms of cancer. But, how do horses fare when fed fat-laden diets? Although not all horses require high-fat diets, equine nutritionists agree that horses can thrive on them. In fact, horses in some athletic endeavors perform better on fat-rich diets than traditional offerings of hay and low-fat textured or pelleted feeds.

Depending on chemical composition, triglycerides can be classified as fats, those that are solid at room

temperature, or oils, those that are liquid at room temperature. To simplify matters, the term “fat” is usually used to encompass both fats and oils.

Fat is an energy powerhouse. Compared to carbohydrates (such as the starch derived from cereal grains), fat provides 2.25 times the energy. In a typical hay and grain diet, horses can use 50-60% of the energy provided. Conversely, horses can use 80-90% of the energy provided in vegetable oil. Because of this conversion efficiency, fats are ideal feedstuffs for weight gain or maintaining condition on horses in rigorous training.

**High-fat diets have been successfully fed to horses with two types of tying up, polysaccharide storage myopathy (PSSM) and recurrent exertional rhabdomyolysis (RER).**

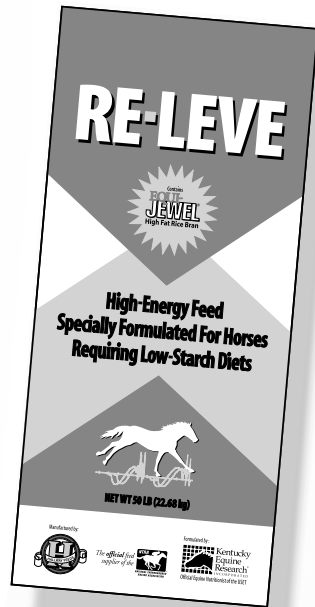
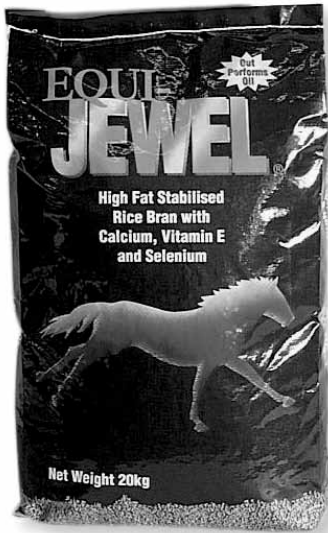
Advantages of feeding fat are numerous. The ability to increase calories without dishing up more feed is one benefit of fat-rich diets. As larger volumes of ordinary feed are dispensed, problems may arise. Grain may escape the small intestine without being properly digested, leaving the grain to pass into the large intestine where fermentation occurs. Fermentation upsets the microbial population in the large intestine and predisposes a horse to colic or founder. Scaling down meal size will therefore minimize the risk of gastrointestinal disease or laminitis.

High-fat diets have also been successfully fed to horses with two types of tying up, polysaccharide storage myopathy (PSSM) and recurrent exertional rhabdomyolysis (RER). PSSM is caused by a glycogen storage malfunction in muscles. In normal horses, cereal grains are digested and the resulting glycogen is sometimes stored in muscle and used as an energy source. However, in horses with PSSM, muscles become saturated with glycogen, triggering an episode of tying up, which is characterized by reluctance or inability to move, cramping of muscles, particularly of the hindquarters, and production of off-colored urine. RER is most prevalent in young, nervous fillies during race training. Treatment for both PSSM and RER typically includes switching from a high-starch diet to a low-starch, high-fat one.

High-fat rations may also fill a void in behavior management. Horses receiving large volumes of typical textured feeds may be bounding with excessive energy, almost to the point of being unmanageable. Fat



Becky Siler



has been tagged as providing “cool energy” to horses. Reactivity trials or spook tests demonstrate that horses are calmer when fed diets fortified with corn oil or mixtures of soy lecithin and corn oil than on textured feeds.

So, how does a horsemen deliver the goods? Perhaps the easiest way to add fat into the diet is by feeding a high-fat feed. Most of these formulations contain 8-10% crude fat. While the benefits of feeding fat are well known in equine nutrition circles, not all feed mills manufacture high-fat feeds, as these tend to be expensive and the demand in some areas may be low.

## Equi-Jewel contains a balanced calcium to phosphorus ratio so there are no worries regarding oversupplementation of phosphorus.

Supplementing fat is also common. Oils can be top-dressed to a meal. Corn oil is the most widely used fat and seems to be preferred by horses when compared to other oils such as canola oil, peanut oil, cottonseed oil, linseed oil, and soybean oil. Recycled cooking oils are not suitable for horses because they can make the feed unpalatable and they contain free radicals, unstable chemical compounds that can cause the horse’s antioxidant defenses to work double time.

A 500-kg horse can tolerate two cups of corn oil daily, although one to two cups a day is a more common offering. Like all new components of a diet, oil should be started slowly and gradually increased to the desired level.

Corn oil is not without its problems, the primary one being palatability. Most horses that refuse to eat oil are doing so because they’re simply being fed too much of it. If the oil is being added equally between two or more meals and the horse is still turning up its nose in disapproval, try spraying some oil on the horse’s hay or hay


## Re-Leve was created specifically for horses prone to tying up and thyroid dysfunction.

cubes. Alternatively, a different fat source may be tried. Kentucky Equine Research has created a high-fat supplement, Equi-Jewel, that may fit the bill.

Equi-Jewel, a stabilized rice bran, has become a popular fat supplement over the last several years. Equi-Jewel contains 18% fat. Many people prefer it to oils because it’s less messy and, more importantly, because it provides certain physiological benefits to the equine athlete including decreased heart rate following exercise and lower blood levels of lactic acid, which, when elevated, causes fatigue and poor performance.

Equi-Jewel contains a balanced calcium to phosphorus ratio so there are no worries regarding oversupplementation of phosphorus. This is one of the most important considerations when feeding a rice bran product as too much phosphorus can lead to skeletal disorders, particularly in growing horses. Equi-Jewel also contains the antioxidants vitamin E and selenium, two valuable nutrients for breeding and performance horses.

Kentucky Equine Research formulated a high-fat, low-starch feed called Re-Leve, created specifically for horses prone to tying up, thyroid dysfunction, and other problems. Re-Leve contains 12% fat from corn oil and rice bran, and fiber in the form of shredded beet pulp and soy hulls. Initial inspection of Re-Leve reveals a feed that is anything but traditional in appearance. Though it does not resemble typical textured or pelleted concentrates, horses find it palatable and horsemen find it a cure for a multitude of management headaches. While Re-Leve is not yet available in Australasia, some similar feeds are. In New Zealand, the combination of NRM Race 13 and Equi-Jewel will offer similar nutrient specifications, and in Australia a mixture of StableMaster Endurance and Equi-Jewel can be used.

Fat can be a valuable component in the diets of some horses and should not be feared or shunned as it often is in human nutrition circles. In certain situations, feedstuffs full of fat may be the best for the horse. Fat supplements may help your horse overcome difficulty in maintaining or gaining weight, rally against the ill effects of tying up and other muscle ailments, and be the best athlete he can possibly be. 

# Equine Q & A

## What is sand colic and how can I safeguard my horse from it?

The pain resulting from an accumulation of sand in the digestive tract that prevents normal passage of ingesta is called sand colic. As in other types of colic, the first sign of this ailment is usually gastrointestinal distress and inappetence. Other signs include frequent lying down, pawing, rolling, and possibly thrashing. One sign that often forewarns of sand colic is chronic diarrhea that usually progresses in severity over several days or weeks.

Sand gains entrance into the gastrointestinal system inadvertently when horses overgraze sandy-soil pastures or are fed from the ground. Horses that are chronically underfed will likely pick up more sand from the environment because they will scavenge for every stray stem of forage or kernel of grain. Because of the weight of sand, it does not advance normally through the colon or cecum of the large intestine and usually settles in the hindgut. Veterinarians can usually determine if sand is present in the large intestine through ultrasound, radiography, faecal samples, or rectal palpation.

The key to preventing sand colic is astute management. Of foremost importance is where a horse is fed. Feeding systems designed specifically to reduce sand intake should be used. Instead of feeding horses off a sand stall floor, for instance, place large rubber mats beneath a manger or hanging haynet. The horse will consume the majority of the hay from the haynet. Should he decide to delve into the fallen hay, he will be plucking them from a sand-free surface. In pasture situations, hay feeders can be secured on rubber mats or concrete or asphalt pads. Hard feed should also be offered in an appropriate feeder, ideally one large enough to catch any grain that falls from the mouth. As with the hay feeders, these bins should be placed on a hard surface that is cleaned regularly.

In terms of a supplement that may rid the gut of sand, there is only one that may be of benefit. Husks of the minute psyllium seed are often fed as a sand-colic preventative. Such products come as pellets, powders, or granules and are top-dressed to the feed. Psyllium is thought to improve intestinal motility and remove sand by a process known as agglutination, which causes sand granules to bind to psyllium and move through the gut normally.

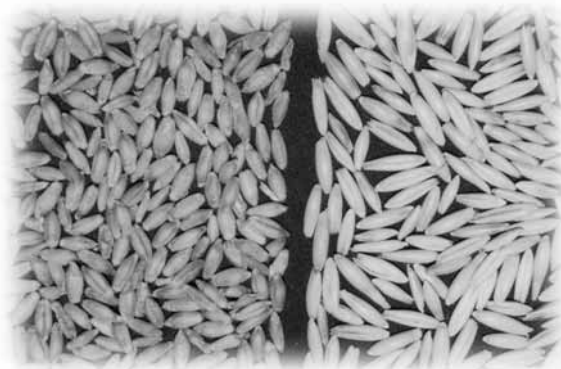
Occasional feeding of psyllium is recommended more often by veterinarians than daily feeding. Dosing once a week or for several consecutive days a month is thought to be more advantageous because the gastrointestinal tract will not have time to become accustomed to psyllium, thus reducing its effectiveness in clearing sand. Daily psyllium intake may also prevent proper absorption of some nutrients from the intestinal mucosa.

The scientific community does not agree on the benefits of psyllium. Numerous studies conducted on psyllium-dosed horses have ended in mixed results; some researchers have found psyllium useful in clearing unwanted sand, while others have encountered only negligible results. Some of these studies have found that adequate hay intake is the best approach.

## Because other grains are becoming difficult to obtain during the drought, I would like to feed triticale to my horses. Is this a suitable alternative for horses?

Triticale is a hybrid of durum wheat and rye and is generally quite palatable to horses. Similar to wheat in structure, triticale is a small, hard grain that is difficult for most horses to chew when raw. Unprocessed triticale contains trypsin inhibitors that may reduce protein digestion and cause an appetite-limiting effect. Heat-treating or soaking triticale destroys these inhibitors and improves digestibility and palatability. When compared to oats, triticale is lower in fibre and higher in energy, protein, and starch. Be careful when substituting triticale for oats, however. On a dipper per dipper basis, triticale is heavier than oats and is therefore more nutrient dense.

Average Nutrient Content	Triticale	Oats
Energy (MJ/kg)	13.7	11.7
Starch (%)	64.0	40.0
Protein (%)	12.0	9.0
Crude Fibre (%)	4.0	11.0

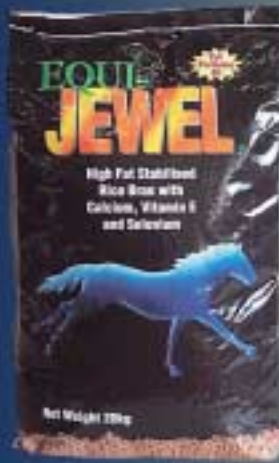


Triticale (left) compared with oats (right).

Some cultivars of triticale are more appropriate for horses than others. For example, the starch in the cultivars Madonna and Abacus is more efficiently digested in the small intestine than that inherent in other cultivars such as Tahara. The primary exception to this rule of thumb is the use of triticale in horses that tie up. For these horses, Tahara, with its low starch digestibility, would be more appropriate. ☺

# EQUI- JEWEL<sup>®</sup>

High-Fat Stabilised Rice Bran



# outperforms oil

- Easier to use than oil
- Highly palatable and digestible form of fat
- Contains the antioxidants Vitamin E and selenium
- **500 g of Equi-Jewel replaces 1 cup of oil**

## SUITABLE FOR

- Horses prone to tying up and those that fizz on grain
- Poor doers, picky eaters and those needing rapid weight gain
- Sales preparation and show horses
- Safe source of energy for aged horses

*Free Feeding & Nutrition Advice*



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# World CLASS Nutrition

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David O'Connor - Eventing  
Photo: Shawn Hamilton



Chris Chugg - Showjumping  
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