



EQUINE NUTRITION AND CLINICAL NUTRITION



Dr Jennifer Stewart BSc BVSc PhD Equine veterinarian, consultant nutritionist and Jenquine CEO
www.jenquine.com

Horse Nutrition can be simple with Jenquine all-4-feet®

Just the same as many of our medical conditions have diet and nutrition in their cause, prevention and management, it's the same with horses. Common challenges that veterinarians and owners face (including stomach ulcers, colic, tying-up, laminitis, hoof conditions, leg and joint problems in growing horses and performance issues) can be helped or even prevented with correct nutrition. There are a few rules of thumb that can help us reduce many veterinary conditions and keep our horses stronger and healthier.

The simple rules when feeding all horses are:

1. Plenty of roughage/forage and then more
2. Avoid high starch/sugar feeds
3. Good quality protein
4. Oil
5. Vitamin E
6. Biotin
7. Supplements can cause problems

Why high roughage, low-starch, quality protein, oil-enriched, vitamin E, biotin and reducing multiple supplements are important.

1. Roughage and stomach ulcers:

Hay, pasture, chaff, beet pulp, hayage, hulls or other fibre. If not at pasture, horses/ponies need around 6kg a day for a 300kg pony, 8kg for a 400kg galloway and 10kg for a 500kg horse. This helps prevent and heal stomach ulcers. All roughages/pastures have some mineral and protein deficiencies. Jenquine all-4-feet® is ideal as a pasture/roughage balancer – especially if hays are soaked as soaking increases mineral loss.

Stomach ulcers can affect any horse at any age. Up to 90 percent of racehorses and 60 percent of show horses, as well as non-performance horses and even foals are affected by gastric ulcers. Spending 6 hours with no roughage/

forage increases stomach ulcer risk x 4. Medications can help ulcers heal, but can reduce absorption of calcium and other minerals. Several recent studies have shown that widely-prescribed anti-ulcer medications can significantly reduce calcium absorption from the intestine. Feeds and feed management are always cheaper and go a long way to healing and preventing ulcers.

Horses need to have constant and free access to some sort of roughage. Saliva is very high in bicarb and helps neutralise the approximately 40 litres of stomach acid produced each day.

Chewing produces saliva and to eat 1kg of hay:

- Horses make 3000-3500 chewing movements and produce up to 45 litres of saliva a day.
- Ponies make 5000-8000!
- 1kg of concentrate/hard feed only requires 800-1200 chews = less saliva and increased risk of stomach ulcers.

Horses only produce saliva when they are eating but the stomach acid is produced 24 hours a day. Even 4-6 hours without food can cause stomach ulcers. You should always include some lucerne as the high protein and calcium levels provide more acid-buffering and horses fed lucerne have a lower risk of ulcers.

NOTE: Stomach ulcers in horses are not the same as stomach ulcers in people! They more closely resemble human 'gastro-oesophageal reflux' disease and the clinical signs are the same: in people, chest pain/heartburn, irritability, poor appetite and failure to thrive; which can be a cause of girth shy, cold-backed, 'nappiness', sour attitude, behavioural problems, reduced appetite/picky eater, weight loss and poor performance.

2. Low-starch/sugar feed and stomach ulcers:

These too increase the risk of stomach ulcers and gut acidosis – and hence colic, hoof problems and laminitis. They also produce swings in blood sugar levels and gut pain from acid = performance problems and 'hot' behaviour. The majority of 'cool' low starch feeds are based on grain by-products such as millrun, bran and pollard which are all HIGH in starch and sugar. Jenquine all-4-feet® does not contain grains or by-products and is low in starch and sugar - making it suitable for horses with or at risk of stomach ulcers.



Commercial Horse Feed*	Starch	Sugar	Non-structural carbohydrates (NSC)%
Jenquineall-4-feet® (laboratory analysis)	2.1	3	9.5
Stance wCoolStance	0.2	9.3	9.5
Omega Weight Gain	9.8	6.4	16.2
Stance GoStance	11.3	12.1	23.4
Barastoc Calm Performer	25.1	5.6	30.7
Mitavite Economix	23.2	8.3	31.5
Mitavite Xtra Cool	25.5	7.5	33
Mitavite Gumnuts	22.3	10.7	33
Horsepower Equestrian	26.7	6.7	33.4
Nutrice Show and Competition	28.7	6.7	35.4
Weightlifter Calm	29.6	10.4	40
Mitavite Formula 3	28.5	13.7	42.2
Pryde's EasiResult	26.3	16.3	42.6
Barastoc Cool Command	37.4	6	43.4
Mi-Feed EasiRider Cool Mix	40.3	5.7	46

*Richards N (2008) Proc.Aust. Equine Sc. Symp., Vol 2:25
THE NON-STRUCTURAL CARBOHYDRATE CONTENT OF SOME COMMERCIALY AVAILABLE HORSE FEEDS IN AUSTRALIA

Avoiding swings in blood glucose is especially important for pregnant mares, performance horses, creep feed, weanlings, youngsters less than 10 months old, horses with PPID, Cushings and weight issues, ageing horses, tying-up and PSSM,

Jenquine all-4-feet® is based on vegetable protein meals and oil-seeds and is low in starch and sugar (Table 1).



3. Good quality protein:

Regardless of discipline, age, work level or reproductive status, essential amino acids affect hoof integrity, work capacity, body composition (amount of muscle vs amount of fat), power-to-weight ratio, endurance and reproduction. Lucerne, soy meal and whey protein are all 'good quality' because they are high in lysine, methionine, threonine, leucine amino acids that build muscle, stamina, tendon strength, bone, red cells etc. Jenquine all-4-feet® has high quality protein enriched with free-form amino acids.

Amount of feeds that can be replaced with 1 cup (250ml) of oil	
Oats	700g
Barley	600g
Corn	600g
Rice bran	450g
Flaxseed	600g
Commercial grain mix	630g

4. Oils especially those high in omega 3:

Adding oil to the diet provides benefits for all horses in terms of acidosis, arthritis, behaviour, coat, fertility, inflammation, immunity, PSSM, vaccination response, skin, temperament and tying up. And, oils also offer owners another tool to maintain body condition in horses that lose appetite when under the stress of training, competition and travelling.

Oil provides around 3 times as much energy as grains – so 330ml of oil provides the same amount of energy as 1kg of oats – but without the risk of 'hot' behaviour and hind-gut acidosis (Table 2).

Oils can also have a calming effect on excitable horses – including weanlings and those prone to tying-up. Reactions to loud noise and visual stimuli are reduced in horses on 10% oil diets; weanlings take less time to learn handling and working horses had less startle reactions when 11% of dietary energy was provided by oils.

So, which oils to choose? Most diets are based on cereal grains, which are rich in omega 6 oils. The natural, grazing, browsing horse has a diet based largely on grass and browsing forage which contain a much higher proportion of omega 3 oils. The PUFAs in corn, sunflower, safflower, soy and rice bran oil are mainly Omega 6, which tend to



Omega 6 and Omega 3 levels in common feedstuffs		
Feedstuff	Omega 6 (gamma-linoleic acid)	Omega 3 (EPA/DHA/alpha-linolenic acid)
Grass (cold season C3)	3.8	8.2
Grass (warm season C4)	3.6	4.6
Lucerne hay	3.9	7.9
Canola meal	12.1	3.5
Barley	10	1
Flax seed	59	226
Linseed meal	2.1	7.3
Oats	23	1
Rice bran	71	3
Soy meal	5.9	1
Sunflower seeds	230	0.6
Canola oil	186	91
Coconut oil	18	0
Corn	532	12
Fish (salmon) oil	17	10
Linseed oil	127	533
Olive oil	98	7.6
Peanut oil	320	0
Rice bran oil	334	16
Soy oil	504	68
Sunflower oil	289	0.4

aggravate inflammation. Oils with a high level of Omega 3 fatty acids don't intensify inflammatory processes – in fact, they reduce them. Vegetable oils with higher concentrations of omega 3 fatty acids include linseed, flaxseed and fish oil (Table 3).

5. Vitamin E:

A powerful anti-oxidant and supports optimum performance and immune function - including improved colostral IgG for new foals and in older horses, response to vaccination. Most diets do not reach minimum recommended daily intakes. Jenquine all-4-feet® is high in vitamin E.

6. Biotin:

Although the healthy horse gut synthesizes most B-vitamins -including biotin- stress, travelling, competition and stabling can reduce production and increase requirements. Hooves and feet of many horses benefit from biotin with additional zinc and methionine that together promote hoof wall growth and integrity. When feeding Jenquine all-4-feet® at correct feeding rates, additional supplements are not required (except on veterinary advice).

7. Supplements:

Can cause clinical and sub-clinical problems (these can't be seen but do impact on health and performance): 60-77% of horse owners in Australia feed concentrate/ manufactured feeds plus up to five (and sometimes 10!) additional supplements. Risk of overlap and subclinical toxicity is high and many horses are being fed in excess of dietary requirements - with some excesses approaching maximum tolerable levels. Jenquine all-4-feet® means no



heat-processed and contains no grains or by-products. It can be fed to all horses to balance any roughage/pasture/ grain-based diet.

Jenquine all-4-feet® removes the need for multiple supplements (except on veterinary advice) and the need to buy multiple different feeds for different horses.

Jenquine all-4-feet® is a concentrated feed that is ideal for ALL horses and ponies - and their feet. Based on diet analysis, it may replace, balance or remove the need to feed the following:

- Many manufactured feeds
- Balancers
- Amino Acid muscle builders
- Hoof supplements
- Omega 3 oil
- Tying up supplements

If you are currently paying for two or more of the above Jenquine all-4-feet® will save you money and you will know that your horse is getting everything they need – all you need to add is fibre and extra salt/oil/energy if needed. How easy is that?

More information and feeding guides are available on our website www.jenquine.com



Dr Jennifer Stewart specialises in Equine Clinical Nutrition, she has over 40 years experience as is currently the only practicing equine veterinarian and clinical nutritionist in Australia.

Dr Jen offers diet analyses that go beyond standard spreadsheet-based programs and minimum recommended intakes and standard feeding guides. They take into account recent veterinary and scientific studies, effects of growth, clinical conditions, performance problems etc and as well as the current diet.

If you would like a diet analysis by Dr Jennifer Stewart go to our website www.jenquine.com/store click on Equine Clinical Nutrition and fill in the form. You will receive a personalised diet analysis and a 1-on-1 phone consultation, undertaken and reported by Dr Jennifer Stewart.

confusing spreadsheets and working out total daily amounts from multiple labels – it's all done for you.

It is a fundamental principle of nature that every horse and pony needs the same basic nutrients and the more they eat the more they take in.

The essential nutrients required are the same, but the amounts required vary with:

- age
- breed
- body weight
- clinical conditions
- exercise intensity
- growth
- reproductive status

These horses/ponies require the same nutrients but in larger amounts:

- horses in work
- spelling and growing horses,
- broodmares,
- breeding stallions,
- convalescing
- aged horses and ponies

Pregnant mares, growing and hard-working horses simply need to be fed more of the same nutrients to ensure that their increased requirements are met.

Jenquine all-4-feet® is a veterinary formula that has been tried and tested by many veterinarians and horse owners with amazing results, making it suitable for all horses at all ages, stages of life, work level, breed and equestrian disciplines.

It is both a feed replacer and balancer and is based on vegetable proteins, free-form amino acids, biotin, omega 3 oils and vitamin E. Jenquine all-4-feet® is not cooked or

NOW THERE IS A FEED TO SUIT: all horses | all ages all disciplines

AUSTRALIAN MADE
VETERINARY FORMULA
EQUINE CLINICAL NUTRITION

LOW IN
STARCH 2.1%
SUGAR 3%
NSC 9.5%

High in Amino Acids,
Antioxidants, Omega 3
& Biotin

Energy DE 10MJ
Protein 25%
Oil 12%
Omega 3 oil 7%
Biotin 80mg
Methionine 26g
Lysine 30g
Vit A 26KIU
Vit D 12KIU
Vit E 4000mg
(per kg-see website for more)

DR JENNIFER STEWART'S

all-4-feet®

YOUR ALL-IN-ONE FEED / SUPPLEMENT
/ BALANCER / REPLACER

JUST ADD FIBRE +/- EXTRA ENERGY

10kg



Jenquine
BRINGING SCIENCE TO YOUR FEED BIN



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