

A NUTRITIONAL JOURNEY AROUND KENYA (20-31.03.2016)

<http://drralitsagrancharova.weebly.com/>

I found Kenya mesmerising. It is so diverse in every single way. Well, maybe except for a few things, one of which was the centrepiece of my trip – equine nutrition in Kenya.

Most horse owners in Kenya do not have access to a variety of feeds for horses. They usually rely on companies producing horse feeds to supply their equines' nutritional needs as making up an individual diet plan and following it without the risk of running out of certain key ingredients is very high. Of course these companies face the same problems – supplying every individual ingredient of the original recipe is not always possible for various reasons and the end product usually changes in composition – having one or more components less or having them replaced with different ones. The nutritional analysis of the end product is therefore always changing. In most cases this reflects very poorly on the horse.

What is the alternative for the horse owner in Kenya who is concerned about the health of his or her equine? An individual diet plan with ingredients that are not only unreliably available but also very expensive (that is if the health of the horse as well as its top condition are a major priority).

What about the horse feeds available in Kenya? Are they good? Do horses do well on them? Do they perform well on them? How can you actually measure the quality of a horse feed?

Before I came to Kenya I had the chance to look at the typical equine diet by consulting horse owners who wanted an improved diet and general health for their animals. I was surprised by the relatively large amounts of concentrated feed horses in Kenya were consuming as opposed to horses in Europe (e.g. UK, Germany, Bulgaria, France) and Asia (e.g. Israel) under similar amount of exercise. Most of them had good weight and would start losing condition if the feed amounts were reduced. It took months of research and analysing samples of local grasses and hays to find out that despite eating forage similar in nutritional quality to forages in Europe, most horses in Kenya required more

protein than their European cousins (based on personal research and findings). The research into the causes of the higher protein requirements of Kenya horses will continue on my next trips to the country, but I am more than interested in hearing any input from colleague veterinary surgeons, local horse owners and professionals involved with the health and nutrition of the horse.

I was asked to examine around 50-60 horses and assess their general health and diet. As a veterinary surgeon I make observations of the general health and condition of the horse. I look into subtle signs that can reveal pathologies on the rise and advise the owner of the animal to make changes to the management, environmental conditions and diet as a way of preventing the further evolution of diseases and medical conditions.

Nutrition is part of my training as a veterinary surgeon and a huge part of my professional career. As a barefoot trimmer I can also assess the hoof health of the horse and advise the horse owner on changes of the management and environmental conditions that are affecting the hooves, but as a veterinary surgeon I have the training to suggest specific medical treatment for certain conditions affecting the hoof. As a veterinary surgeon that is also a barefoot trimmer I can say for sure: the hoof is hugely affected by the general health and the diet of the horse. Knowing how to treat medical conditions which affect the horse because of an unbalanced and unnatural diet is not only part of my medical training but also a professional interest that I pursue with great passion.

My brief stay in Kenya was enough to gather some general observations on the overall health of local horses. The animals that I examined were used for sport or hacking out and were in different stages of their training. I had the chance to examine foals and yearlings as well as 25+ year old horses. Any similarities? Definitely.

Almost every single horse that myself and fellow barefoot trimmer Nick Hill examined with the exception of a small percentage had hoof wall separation – the connection between the outer and inner hoof wall was weak and was causing the hoof to crack, which was visible from the sole. A small percentage of horses had thrush (infection) in the frog and heels. So what was the common denominator between the horses that had hoof problems?

The most common causes for hoof wall separation and thrush are two: poor environmental conditions and an unbalanced diet. All horses I had a chance to examine were being fed a different brand of feed, while few of them were on an individualised diet plan. It was obvious to see that the horses on the individualised diet plan had better hoof quality, but most of them with small exceptions still had hoof wall separation that was indicating a feed issue.

Based on my research hoof wall separation could be caused by:

- Mineral imbalance (calcium, selenium, zinc & copper deficiency and / or iron & fluoride overload)
- Protein deficiency (keratin production)
- Vitamin B (pyroxidine, biotin & folic acid) deficiency (unlikely in healthy horses) & vitamin E deficiency (unlikely in horses with access to fresh forage or recently harvested green hay)
- Imbalance in the essential omega-3 to omega-6 fatty acids (ration in the natural equine diet is 4:1 to 6:1 for omega-3:omega-6)

My observations and research have led me to the conclusion that thrush is primarily caused by:

- Wet and muddy ground (highly unlikely in Kenya for most of the year) or poor hygiene in the stall
- Carbohydrate overload (e.g. feeding grains in large amounts, sunflower seeds, soybean meal and soy, fruit, carrots, molasses as well as unrestricted access to rich green pasture)

What were my recommendations to horse owners in Kenya?

Research what enters the horse's mouth. Avoid harmful feeds and test water sources to make sure they are safe for animal consumption. Below is a short list of harmful feeds for horses that should be avoided for various reasons.

If you are a horse owner in Kenya, contact your feed manufacturer and make sure these ingredients don't take part in the feed formulation you are using:

- **Corn (maize) and corn by-products (*high starch content and low digestibility, linked to laminitis and hindgut acidosis*)**
- **Soya and soya bi-products (*high carbohydrate and starch content*)**

- **Sunflower seeds (*unless pro-inflammatory effect of the inverted omega-3 to omega-6 fatty acid ratio is desired; higher carbohydrate content than other seeds*)**
- **Canola and canola by-products (*linked to various health problems in people and animals including cancer*)**
- **Molasses (*high carbohydrate content linked to laminitis and hindgut acidosis; high iron content linked to IR and laminitis as well as poor hoof quality*)**

What would be considered “safe” ingredients for equine feeds in Kenya? The answer to that question is not that easy as nutrition is an art as well as science and since every horse is an individual, it will have specific needs that might differ from other horses living under the same environmental conditions.

Most equine nutritionists will agree that oats are the “safest” grain that could be fed to horses for a number of reasons. It has a lower starch content than most grains and is highly digestible leaving lower chance for development of hindgut acidosis and laminitis in the horse.

Barley is usually placed second to oats as a suitable feed for horses because of its higher starch content. Boiling this type of grain usually helps reduce the harmful effect of the carbohydrates on the horse’s digestive tract but also changes its nutritional value and possibly leads to destruction of protein (as I mentioned above my research has led me to believe that horses in Kenya require more protein than horses in other parts of the world).

An alternative to soybean meal in horse feeds in Kenya would be chia or linseed. Because of the import cost these two protein sources are considered luxury by most horse owners. What then?

Our plea is aimed at local forage producers who can plant and harvest oats and linseed and supply them to equine feed manufacturers in Kenya. After talking to local producers we are optimistic that the production of healthier horse feeds in Kenya will become a reality.

On the matter of mineral imbalance in the horse’s diet, testing the water, forage (grass and hay) and any feed (manufactured or individually mixed by the owner) is the most objective answer to the question: does my horse need mineral supplementation?

My research suggests that forages in different areas of Kenya do not show major differences to forages in Europe except for certain major minerals (e.g. sodium and iron).

Most horses in Europe do not require mineral supplementation unless they show signs of mineral deficiency. In general I am not an advocate of unfounded mineral supplementation. Being objective in equine nutrition means basing the horse's individualised diet on the nutritional analysis of everything that enters its system – from forages and commercial mixes, to grains, supplements and water.

If you have any questions regarding your horse's general health, the quality of its hooves or would like a consultation about making an individualised diet plan for your horse, please contact me under holisticvirtualvet@abv.bg.

Ralitsa Grancharova, DVM, MRCVS