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Think Pink - for the second time since 2001 EA News has a change of colour.

Normally purple (Greg Robert's favourite colour), we went green in February 2004 for the launch of Greenies, now it is pink to emphasize nutrition and health, especially for the transition cow.

Think Pink

"In the pink of condition" means to be extremely healthy.

There are various theories as to the derivation of this phrase from an abbreviation of the word "pinnacle" to, of all things, the dianthus flower.

As most species of dianthus are pink there is some thought that it is the flower that gave the name to the colour, as the flowers themselves were referred to as "pinks" in days of yore.

This was an allusion to the edges of the flowers that were, what we now may call serrated, as being pinked, i.e. cut in an irregular fashion.



This meaning is still with us today with "pinking" shears having serrated cutting edges.

Whatever the real derivation pink, in the modern lexicon, means good or healthy.

Even at the launches of Metabolase and Metabo-

lase Forte many practitioners commented on the colour, how they were good compelling pink colours, implying that client acceptance would indeed be very strong.

For nutrition and health "Think Pink."

The Power of Pink

In the late 60s an average pop group called The Scaffold (main claim to fame - one member was Paul McCartney's younger brother) put out a folksy little ditty that went gold and was number one on the UK hit parade.

Entitled "Lily the Pink" it was about a woman who invented medicinal compound and was the savior of the human race. The group never scaled to such heights again - the power of pink!



Omega 3 Supplementation in Horses

The omega 3 story gained traction in the 90s and, like many new scientific breakthroughs, was prone to quite a lot of pseudoscience as marketers and fringe product manufacturers tried to find angles, particularly in the human supplement market.

On the other hand there has been a lot of genuine scientific research stimulated and some of the latest research makes interesting reading. Like many situations oversimplification by the pseudoscientists and marketers obscures the fact that these compounds are more complex than they make them out to be.

A recent study (Nogradi N, Couetil LL, Messick J et al. J Vet Intern Med. 2015; 29: 299-306) looked at horses with chronic lower airway inflammatory disease and compared the results of a dust free environment with and without omega 3 supplementation.

They felt some degree of improvement was to be expected just by switching the horses from a diet of hay to pelleted feed.

They decided this trial design would allow a more accurate evaluation of the effect of the supplement, because recurrent airway obstruction (RAO) horse in the disease exacerbation situation of be-

"In different species some evidence indicates a potential effect on improving insulin sensitivity."

ing continually exposed to hay would be unlikely to show clinical improvement with omega 3 polyunsaturated fatty acid (PUFA) supplementation alone.

The conclusion of the study is that omega 3 PUFA supplementation could be an additional option to better manage both inflammatory airway disease (IAD) and RAO horses when compared to a low dust environment by itself.

A review of PUFA supplementation was also published recently (Hess T, Ross-Jones T. Omega-3 fatty acid supplementation in horses. Brazil JAn Sci 2014; 43:677-683).

This paper looked at the various types of omega PUFA and noted the importance of chain length and also the source.

Prominent quotes from the paper include: "Polyunsaturated omega-3 fatty acids (n-3 PUFA) are a family of essential fatty acids with many biological activities. These fatty acids are incorporated into cell membranes, changing their structural and functional characteristics.

Omega-3 PUFA can be converted in the body to longer-chain n-3 PUFA at a limited rate and are differently converted in body systems. It appears that when specific longer chain n-3 PUFA are desired these need to be supplemented directly in the diet.

In different species some evidence indicates a potential effect on improving insulin sensitivity. Recently, a novel class of n-3 PUFA-derived anti-inflammatory mediators have been recognized, termed E-series and D-series resolvins, formed from EPA and DHA, respectively. N-3 PUFA derived resolvins and protectins are heavily involved in the resolution of inflammation."

Therefore supplementation with n-3 fatty acids in horses may help manage, among others, osteoarthritis and equine metabolic syndrome.

What is clear is that it is the type of omega3 PUFA that is important; long chain compounds, derived from algae, such as in EO.3 from Kentucky Equine Research, are the ideal.

Bad News

Doctor: "I have some bad news and some very bad news."

Patient: "Well you may as well give me the bad news first."

Doctor: "The lab called with your test results, they said you only have 24 hours to live."

Patient: "24 hours, that's terrible, what's worse than that? What's the very bad news?"

Doctor: "Your mobile phone has been switched off, and I've been trying to reach you since yesterday"



Superlac is Back!

Superlac is back! Once a high quality milk replacer, imported from Australia but manufactured from New Zealand milk, Superlac was a major aid to dog and cat breeders. Now manufactured in New Zealand (so that the double crossing of the Tasman no longer happens, keeping the price down) Superlac fills a void on the New Zealand pet market now that other major players have left the scene.

Most products currently available and used as a substitute milk for dogs, are based on standard cows' milk with very little modification.

These products contain on average 3.3% protein, 5% carbohydrate and 4.5% milk fat, and on recommended feed rates produce some 280 kilojoules of energy per 100 ml, and contain a total solid content of 125 grams per litre.

For dogs cows' milk has too much water and carbohydrate leading to diarrhoea, which is often misdiagnosed as lactose intolerance. When cows' milk is fed a large volume is required to get sufficient energy. With Superlac being formulated to dogs' milk there is twice the energy of cows' milk so less is fed.

The composition of dogs' milk is quite different to cows' milk and contains on average 7.5% protein, 10% milk fat, and 3.8% carbohydrate. One litre of dogs' milk contains some 230 grams of powder, contributing 450 kilojoules per 100ml, at a feed rate of 14% of bodyweight per day. Quite obviously a substitute milk for puppies required a much higher energy density.

Older dogs and puppies rely more heavily on lipid (milk fat) content of milk than protein and carbohydrate, and this lipid is a balance of saturated fat, mono and polyunsaturated fats.

Because of the higher level of saturated fat in cream this can cause precipitation of calcium. Superlac has incorporated Canola Oil into its products to produce the higher level of energy, higher level of lipid, and incorporated the essential mono and polyunsaturated fats including the important Omega-3 essential fatty acids.



Superlac was produced to supply puppies with a more suitable milk product.

Superlac contains the higher levels of protein and lipid, and lower level of carbohydrate and produces 450 kilojoules per 100ml with a recommended feed rate of 14% of bodyweight per day.

The metabolic rate and energy requirements of pregnant bitches is quite elevated, and Superlac supplies that extra energy, vitamin and minerals to assist the bitch, and enable her to have reserves of energy for whelping and allow her to continue to supply adequate milk to newborn puppies.

Feeding Superlac to pregnant bitches pays big dividends and reduces the number of puppies requiring substitute milk.

Questions For Vladimir

Vladimir Putin, wanting to get on the good side of voters, goes to visit a school in Moscow to have a chat with the kids.

He talks to them about how Russia is a powerful nation and how he wants the best for the people.

At the end of the talk, there is a section for questions.

Little Sasha puts her hand up and says "I have two questions. Why did the Russians take Crimea? And

why are we sending troops to Ukraine?

Putin says "Good questions..." But just as he is about to answer, the bell goes, and the kids go to lunch.

When they come back, they sit back down and there is room for some more questions, another girl, Misha, puts her hand up and says

"I have four questions. My Questions are - Why did the Russians invade Crimea? Why are we send-

ing troops to Ukraine? Why did the bell go 20 minutes early? And Where is Sasha?



Think Pink for Cow Health

In the dairy cattle world if anything emphasizes the fact that pink means healthy it is the quaintly named FANI indicator, which was devised as a means of prognosis for *Theileria* affected cows. A strong pink colour is indicative of a good prognosis.

However the importance of healthy pink mucous membranes is not just limited to one particular disease but cow health in general. Nowhere is this more important than in the transition cow.

The transition is the period of greatest nutritional stress. A healthy transition leads to not only a productive lactation but also the chance of early pregnancy.

Nutrition is paramount at this time! The transition cow is a finely balanced machine!

The Requirements:

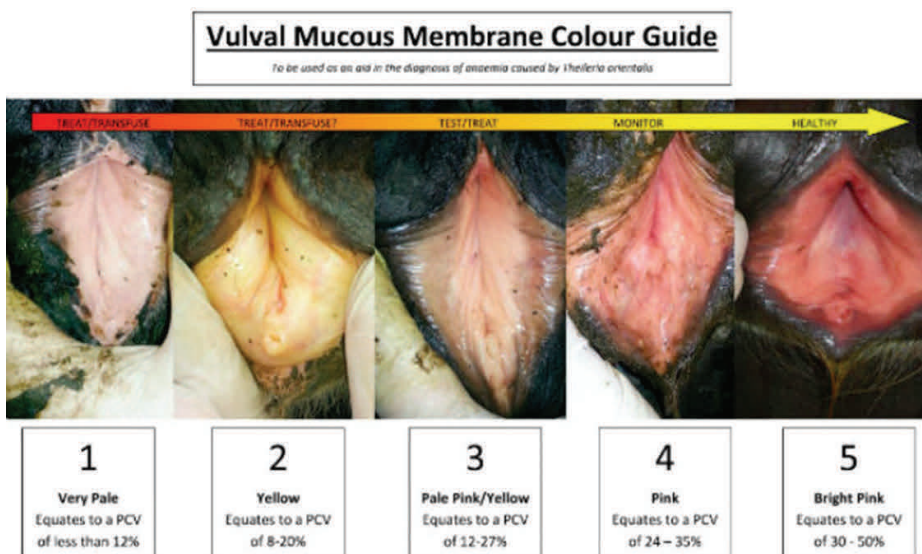
Mineral balance is vital, (calcium and magnesium), also energy balance, liver function, fatty acids, ketone bodies and urea build up.

The major minerals are magnesium and calcium. The former is low in New Zealand pasture and not stored in the body so must be supplemented.

There is a tremendous drain of calcium at calving so it may need to be supplemented however the cow does have good body store and mobilization of this can be important in preventing or treating disease.

The most important parameter is energy level, driving all else.

As far as liver function is concerned the liver is a multifunction organ that produces bile to aid digestion, metabolises many substances, detoxifies the body and converts fatty acids to energy. Fatty acid metabolism is vital in the cow.



So - When It all Goes Wrong:

Low energy leads to body fat mobilization. The cow's liver needs to metabolize triglycerides from the blood into glucose for energy with any excess converted to low density lipoproteins which are then excreted.

The problem is that the cow is not very efficient in this process and the liver is soon overloaded. Fatty liver ensues and fatty acid build up occurs in the bloodstream along with overproduction of ketone bodies.

Repairing The Damage:

The major aims are to restore fatty acid conversion, enhance detoxification, reduce urea build up, limit oxidizing damage, enhance energy conversion and supply energy.

This makes l-carnitine, present as a major ingredient in both Metabolase and Metabolase Forte, as one of the most crucial of the essential amino acids.

L carnitine is the only physiological carrier for transport of fatty acids inside the mitochondria, where they are burnt to produce energy. It also transports waste products away avoiding the build up of ketone bodies.

Methionine is also present as a major ingredient in both presentations and, although multifunctional, one of its major roles is to increase liver conversion of triglycerides to low density lipoproteins, thus clearing the fatty backlog.

Urea is eliminated in the liver by the urea cycle which has ornithine, citrulline and arginine as co-enzymes, all of which are in Metabolase. In addition Metabolase contains aspartic and glutamic acids, co-enzymes in the extra-hepatic detoxification of urea.

"L carnitine is the only physiological carrier for transport of fatty acids inside the mitochondria, where they are burnt to produce energy."

Thioctic acid, the universal antioxidant, along with other antioxidant molecules in methionine, lysine, glycine and arginine are all in abundance in Metabolase.

Thioctic acid is known as the universal antioxidant as it is effective in both watery and fatty tissue. The antioxidant in Metabolase Forte is vitamin E.

Therefore both Metabolase and

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Think Pink for Cow Health

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Metabolase Forte are parenteral nutrients primarily aimed at the ketotic and sub-ketotic transition cow.

In addition to the above ingredients both contain vitamin B₁₂ for whole body metabolism (hence the lovely pink colour). Metabolase itself also has vitamin B₆, a co-factor in many energy reactions.

Metabolase also has both fructose and sorbitol as energy substrates, no wonder the bottle is so large!

It is important to realise that Metabolase is a parenteral nutrient, not some magic potion like Lily The Pink's medicinal compound.

As such it has a specific rather than a convenient dose regime but the science is sound; it restores fatty acid conversion, enhances detoxification, reduces urea build up, limits oxidizing damage, enhances energy conversion and supplies energy. In short, it works! The power of pink.



Metabolase Forte In Horses

The little brother, Metabolase Forte, may not have all the goodies of Metabolase but it has the two main actives, carnitine and methionine in the same quantities per dose but at a much lower dose volume.

This is for sheer convenience of administration but, of course, means that the ingredients are very much more concentrated.

The upshot of this is that they cannot be injected intravenously but should be injected by deep intramuscular injection.

Generally this is fine but we all know that, horses being horses, there is always the risk of one somewhere maybe having an injection site reaction.

To avoid this possibility one suggestion is very deep i/m slowly with a fine needle (20gx2?).

A more rational approach would be to use divided doses and to dilute the product 50/50 with sterile water

After all the exercise is not how quickly to get it in to the horse but how effectively.

Such 'Best Practice' advice also gives the veterinarian more contact and control over client use.



Taking My Son For His First drink

While reading an article last night about fathers and sons, memories came flooding back to the time I took my son out for his first pint.

Off we went to our local pub only two blocks from the cottage.

I got him a Guinness. He didn't like it, so I drank it.

Then I got him a Kilkenny's, he

didn't like that either, so I drank it.

Finally, I thought he might like some Harp Lager? He didn't. I drank it.

I thought maybe he'd like whiskey better than beer so we tried a Jameson's, nope!

In desperation, I had him try that

rare Redbreast, Ireland's finest tipple.

He wouldn't even smell it.

What could I do but drink it!

By the time I realized he just didn't like to drink, I myself was so drunk I could hardly push his pram back home.

Why Do Elephants Have Such Large Turds?

At first glance the answer appears obvious; they are great big animals.

However, even considering this, their droppings are enormous, especially when comparing sheep pellets to the size of the actual sheep.

An animal's GI tract is designed to maximize the use of feedstuffs which are available to it in nature; all mammals have digestive tracts that use a combination of enzymatic and fermentative digestion

Sites of enzymatic digestion are:

- 1) True stomach where hydrochloric acid and pepsin begin protein digestion
- 2) Small Intestine which has a range of digestive enzymes to digest protein, starch, minerals and vitamins
- 3) Large Intestine which has little enzymatic digestion

Sites of fermentation

There are pregastric fermenters and hindgut fermenters. The pregut fermenters are ruminants

(cattle, sheep, goats, deer, etc.) and non-ruminants such as hamsters, kangaroos and hippopotami.

Hindgut fermenters are classified as mainly caecal or mainly colonic

fermentation. Caecal fermenters include rabbits, guinea pigs, chinchillas and rats. Large non-ruminant herbivores such as horses, rhinoceroses and elephants depend more on the colon for microbial fermentation.

The digestion of starch and simple sugars is mostly enzymatic and occurs in the small intestine. Glucose is the major end product. There is some fermentation in the stomach and large intestine with volatile fatty acids (VFAs) and lactic acid the major end product

Plant fibre digestion is all by fermentation, either pregastric or in the hindgut, and again VFAs are the major end product.

The extent to which plant material is fermented depends on how long it is in contact with the microbes in the digestive tract. A longer reten-



tion time results in more complete digestion, but there is a limit to the total amount of time the material can be subjected to fermentation before energy production becomes compromised.

If digesta is retained too long in the fermentative organs, VFAs will be degraded by certain anaerobic microorganisms, thus depriving the animal of energy.

As ruminants become larger, mean retention time increases. Buffaloes, which have a bodyweight of 1,000 kg at maturity, have retention times between 90 and 100 hours. Retention times longer than this would make animals susceptible to the aforementioned VFA degradation.

For that reason, animals larger than 1,000 kg must possess a digestive system that is different from the ruminant to allow for more rapid digesta transit.

Elephants and rhinoceroses are hindgut fermenters that have much faster digesta transit times than ruminants.

These massive mammals have adopted the dietary strategy of ingesting a large quantity of dry matter and passing it through the digestive system fairly quickly. Any loss of digestive efficiency is offset by increased intake.

In general, the larger the hindgut fermenter, the more rapid the digesta transit time. And so the ele-

Mean retention times of digesta in the guts of ruminants and nonruminants of various body sizes

Animal	Mean retention time (hr)
Ruminants	
Sheep	45 to 55
Cattle	60 to 80
Buffalo	90 to 100
Nonruminants	
Pig	37 to 47
Horse	30 to 40
Elephant	20 to 28

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Why Do Elephants Have Such Large Turds?

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phant only has a retention time of a little over 20 hours.

The average African forest elephant consumes over 135 kg of leaves, bushes, and grasses every day.

Of that, because of the low retention time, only about 45 percent is fully utilized by the elephant, leaving about 75 kg of excrement to be dumped on the ground, hence the giant turds!

"At first glance this may seem extremely inefficient and even an environmental disaster."

Due to this wastage elephants must be constantly eating and devour huge tracts of vegetation in the forest. At first glance this may seem extremely inefficient and even an environmental disaster.

However, thanks to the elephant diet of plants and fruit and the

rapid transit time, the elephant's waste contains lots of seeds that, with the nutrient-rich excrement, germinate well in the African forests.

Unfortunately, a decrease in the forest elephant population has resulted in a lack of poop, causing a huge ecological difference. The elephant waste is responsible for a great deal of forest growth, and with less and less of it each year, the forest, and the animals that live there have taken a big hit.

Hindgut Health and OCD

The data for the above story, but not the title, came mainly from an address by Joe Pagan at a Kentucky Equine Research Conference in Melbourne recently.

KER, as the name implies, relies on scientific research to prove product efficacy. However, every now and then a new concept in animal health may arise that has not yet been fully researched.

What is happening is that there is very strong feedback from clients that young thoroughbreds fed EquiShure

seem to have a much lower incidence of OCD, in particular physitis.

No, it has not been scientifically proven yet but the anecdotal evidence is convincing.

Why would a hindgut buffer have such an effect? Who knows? That is a matter for the boffins to find out. One theory is that improving hindgut health in general may assist overall body health.

In the meantime, while awaiting research to prove the fact, it is

quite reasonable to include EquiShure in the diets of young, fast growing thoroughbreds prone to this problem.



The Priest and the Rabbi

A priest and a rabbi were sitting next to each other on an airplane.

After a while, the priest turned to the rabbi and asked "Is it still a requirement of your faith that you not eat pork?"

The rabbi responded "Yes, that is still one of our laws".

The priest then asked "Have you ever eaten pork?"

To which the rabbi Replied "Yes,

on one occasion I did succumb to temptation and tasted a ham sandwich".

The priest nodded in understanding and went on with his reading.

A while later, the rabbi spoke up and asked the priest "Father, is it still a requirement of your church that you remain celibate?"

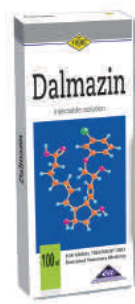
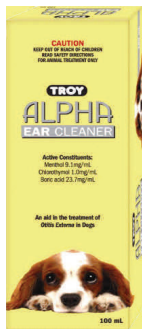
The priest replied "Yes, that is still very much a part of our faith"

The rabbi then asked him "Father, have you ever fallen to the temptations of the flesh?"

The priest replied "Yes, rabbi, on one occasion I was weak and broke my faith".

The rabbi nodded understandingly and remained silent, and sat thinking, for about five minutes.

Finally, the rabbi said "Sure beats a ham sandwich, doesn't it?"



Painting The Church

There was a Scottish painter named Smokey MacGregor who was very interested in making a penny where he could, so he often thinned down his paint to make it go a wee bit further.

As it happened, he got away with this for some time, but eventually the local church decided to do a big restoration job on the outside of one of their biggest buildings.

Smokey put in a bid and, because his price was so low, he got the job.

So he set about erecting the scaffolding and setting up the planks, and buying the paint and yes, I am sorry to say, thinning it down with turpentine...

Well, Smokey was up on the scaffolding, painting away, the job nearly completed, when suddenly

there was a horrendous clap of thunder, the sky opened and the rain poured down washing the thinned paint from all over the church and knocking Smokey clear off the scaffold to land on the lawn among the gravestones, surrounded by telltale puddles of the thinned paint.

Smokey was no fool. He knew this was a judgment from the Almighty, so he got down on his knees and cried:

"Oh God, Oh God, forgive me; what should I do?"

And from the thunder, a mighty voice spoke.

"Repaint! Repaint! And thin no more!"

