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Feed Profile of the Month

This month, we take a hard look at Calavor Feeds' Strucomix.

Clients are always sending me feed labels to analyze in their quest to find something their horses' LOVE that's actually appropriate for them. I'm always happy to run the numbers on these products to help you better understand equine nutrition. By now, I have a pretty extensive collection of analyses.

If you want to provide your horse exactly what he needs, a diet analysis and custom supplement is really the only way to get it just right. Alternatively, for many horses in Southern California, my So Cal Custom Complete products fill the gaps nicely. But this article isn't a pitch for my products...it's intended to help you better understand why commercial products are not meeting your horse's needs.

This month, I've had several clients ask about Calavor Feeds, and specifically the Strucomix Original. In order to understand how this stacks up to your horse's needs, I am comparing this to the requirements of an average size, healthy pleasure horse with no metabolic challenges, on a diet of bermuda hay.

The first thing to understand is what the feed itself is designed for. Strucomix is labeled as a "complete feed". A

"complete feed" is a product intended to be used as the horses' total diet. Let me clarify what that means: this product is formulated to provide all of the nutrients the horse needs if this product is their total diet, and NOT as a supplement to forage.

Like many products, Strucomix is attractive to many horse owners because it looks and smells appealing. Instead of being just a pellet, or a powder which must be top-dressed over something to make it palatable, it incorporates whole grains, and it does indeed look healthy. But let's look at how it really stacks up!

Before we look at the nutrient profile, it's worth noting that Strucomix contains garlic, touted by the company as beneficial against unwanted bacteria and intestinal parasites. However, garlic has been shown to cause Heinz Body Anemia** in horses. While it is unclear what constitutes a toxic dose, or how dangerous garlic might be when fed regularly in small amounts, it is also unclear how effective garlic is in regards to the claims made by Calavor. It's anyone's guess, really, whether the benefit outweighs the risk, but I think better safe than sorry is a good adage here.

Digestible Energy, Protein, and Fat

The average, healthy horse should get the majority of his daily energy requirements in the form of forage (hay). The same

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goes for protein; the average horse's protein requirements will usually be easily met or exceeded by his hay ration. So the main concern with the amount of protein in a supplementary feed is generally only important in respect to how much you may be overloading the horse. Added fat is of concern in excess as well. Fat is indeed a quick and dirty way to add weight to your horse, but is far from the best choice, except for horses with EPSM. Fat has a number of undesirable effects, including a negative impact on hind gut function.

	In 16.5 lbs average bermuda hay*	Needs added to meet optimum requirement	In 1# Strucomix
Digestible Energy	15.51 Mcal	-	1.1Mcal
Crude Protein	790g	(none – requirement is 690g)	49.9g
Fat	135g	-	18g

Starch

This is the first component I generally look at, because excess starch will immediately determine that the product is undesirable, regardless of the rest of the analysis. Strucomix boasts an eye popping 20% starch and sugars. That puts the glycemic index pretty much off the charts, and certainly inappropriate for horses with Equine Metabolic Syndrome, insulin resistance, or PPID (Cushing's disease). I won't go into how the type of starch or sugar impacts insulin levels, but suffice it to say that anything over 11% is undesirable, particularly in a processed feed, even for a horse with no metabolic issues.

Major Minerals

Major Minerals	In 16.5 lbs average bermuda hay*	Needs added to meet optimum requirement	In 1# Strucomix	Deficit with 1# Strucomix
Calcium	36g	-	5g	
Magnesium	14g	4g	1.27g	2.73g
Phosphorous	14g	4g	1.81g	2.19g
Potassium	125g	-	-	-
Sodium	9g	11g	0.90	10.1g

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Trace Minerals

Trace Minerals	In 16.5 lbs average bermuda hay*	Needs added to meet optimum requirement	In 1# Strucomix	Deficit with 1# Strucomix
Iron	1881mg	NRC requirement is only 320mg	34mg	no deficit – adds to iron overload
Copper	74.25mg	396mg	11.35mg	384.65mg
Zinc	231mg	1179.79mg	56.75mg	1123mg
Manganese	501mg	99mg	56.75mg	42.25mg

** based upon the estimated Mcal requirement of an average 900 - 1100 lb, horse, using Equi-Analytical.com average bermuda hay profile accumulated crop years 05/01/2000 through 04/30/2009
<http://www.equi-analytical.com/CommonFeedProfiles/default.asp>*

It's easy to see that a pound of Strucomix isn't balancing your horse's forage ration. It is, however, adding unnecessary protein, fat and calories. This is a fairly typical example of a commercial feed receiving lots of hype, with little real benefit for your horse.

I hope this helps you better understand what to look for when shopping for a supplement for your horse. Have a feed you would like to know more about? Feel free to send me the guaranteed analysis, and I'd be happy to run the numbers for you.

Want to learn more? Dr. Eleanor Kellon of Equine Nutritional Solutions in Ephrata, PA offers an extensive curriculum of equine nutrition courses. Each 10 week course provides 20 continuing education units for equine health care professionals. Visit Dr. Kellon's website here: <http://drkellon.com/home.html>

*** You can read more about garlic and Heinz Body Anemia here:
http://www.equisearch.com/horses_care/feeding/feed/eggarlic528/*

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Understanding Horse Feed Labels

What does the label really tell you? Here are the basic conversions you need to understand feed labels:

PPM = milligrams per kilogram of the product.

A kilogram = about 2.2 lbs. Multiply mg/kg by .454 to convert to mg/lb.

% X 10 = grams per kilogram of the product. Multiply g/kg by .454 to convert to g/lb.

Examples:

A product with 25ppm copper supplies 25mg/kg, or about 11.35mg of copper per pound.

A product with 1.10% calcium supplies 11g/kg, or 4.99g of calcium per pound.

For more help with conversions, please visit the Equi-Analytical site here:

<http://www.equi-analytical.com/InterpretingResults/ConversionTable.htm>

More Excellent Reading...

What's in a weed? Katy Watts' article, "Founder Fodder Weeds," looks at some common pasture and dry lot weeds that can present a big problem, even in small quantities:

<http://www.safergrass.org/pdf/Founder%20FodderWeeds.pdf>

Another great article from Watts, "When is Dead Grass Safe?" discusses sugars in pasture grass, even as it dies off come wintertime:

<http://www.safergrass.org/pdf/dead%20grass%20safe.pdf>

"Timing and Rate of Skeletal Maturation in Horses" by Dr. Deb Bennett is another must-read. In addition to reference tables listing the age at which growth plates close and the skeleton is considered mature, there's some trivia on the history of the horse racing industry that I found fascinating:

http://www.equinestudies.org/ranger_2008/ranger_piece_2008_pdf1.pdf

Hoof Boot Primer

As an [EasyCare Master Dealer](#), my job is to help you find the ideal boot for your horse.

The key to success with hoof boots is FIT, FIT, FIT! The most common mistake I see when people buy hoof boots without professional help is buying too large a boot. This pretty much guarantees failure. Boots must fit snugly. If they go on easily the first time, it's a safe bet they're too big. Most hoof boot failures are the result of improper fit.

A timely trim schedule is important to boot fit. So is a proper trim with a clean, beveled wall. Jagged edges make sliding a boot on difficult. But even with a 4 week trim cycle, there might be an occasional chip. It's a good idea to keep a rasp handy in case you need to clean up a chip between trims. Most trimmers are happy to give you an old rasp for tidying up feet as needed.

Some owners and trainers might be put off by the idea of applying boots before every ride. Putting the boots on can be difficult the first time without proper instruction. There really is a trick to it -- I'll be happy to show you how, or see EasyCare's excellent instructional videos here: <http://www.easycareinc.com/education/videos.aspx>. You'll get the hang of it fast, and after the horse wears his boots once or twice, they break in and get easier to put on.

It takes about the same amount of time to put your horse's boots on as it takes to apply dressage boots. Most horses need boots only for their front feet. A pair of hoof boots costs less than a set of shoes, and often lasts for a year or longer, depending on your mileage. And it's a safe bet that horses prefer hoof boots over getting nails driven into their feet every 6 weeks.

Some purists like to believe that a healthy bare hoof should never need boots. I believe this is an unrealistic view, and the failure to encourage and embrace hoof protection alternatives like boots and pads has hindered the barefoot movement from

gaining even more traction (no pun intended). The way most of our horses are housed, conditioning the hoof adequately for all-terrain performance is extremely difficult. However, with a little help from boots and pads, we can keep the hoof bare for optimum health, and provide needed protection for all-terrain performance.

Think hoof boots aren't designed for real riding? Tell that to the growing legion of endurance riders regularly outperforming their shod competition in EasyCare boots. Nobody puts more wear and tear on their boots than these guys:

<http://www.easycareinc.com/System/Lib/Content/home/Endurance%20Riding/Pages/title.html>.

With their ever expanding product line, EasyCare has a booting solution for every horse and rider.

Easyboot Edge



The new Easyboot Edge is a great boot with an easy closure system for everyday riding, whether you ride mainly in the arena, or out on rugged trails. The Edge is also an excellent tool for transitioning horses out of shoes. Because of its adjustability, the Edge fits a wide variety of hoof capsule shapes, making it an ideal choice not only for well-transitioned hooves, but also newly de-shod and distorted hooves. The Edge accommodates the thicker 12mm Comfort Pads, which provide support for the sole and frog and eliminate peripheral loading*.

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Easyboot Epic



The Easyboot Epic is the Edge's older cousin. The Epic remains an excellent choice for all-around use, as well as shod-to-barefoot transitions. Like the Edge, the Epic fits a wide range of hoof types because of its adjustability. The Epic also accommodates the 12mm Comfort Pads.

Easyboot Glove



The EasyBoot Glove is a sleek, low profile boot with no closure hardware ideal for arena work, and even jumping. The Glove fits a healthy, well-transitioned hoof best, but still works well for many horses with less than perfect feet. The only boot available in half sizes, the Glove can be a good solution for horses

that are in between sizes in the Epic or Edge. The Glove accommodates a 6mm Comfort Pad, and so may not be the best choice for horses who need more cushion.

Easyboot Bare and Easyboot Grip

The Easyboot Bare and Easyboot Grip are both variations on the Epic/Edge design. The Bare is slightly less adjustable for fit, but may be easier for some owners to apply. The Grip is essentially the Epic boot, but with better traction for muddy or slick conditions.

Easyboot Glue-On



The Glue-On is the perfect solution for events, from camping to endurance rides to multi-day shows. With no gaiter, the Glue-On is appropriate for events which disallow any apparatus above the hairline. With proper application, the Glue-On is so sleek that it is almost undetectable unless you lift the foot. The Glue-On can be worn for up to 5 days consecutively in a wet environment, and up to 10 days in a dry climate.

Boa Boot, Old Mac, and Old Mac G2

The Boa Boot, Old Mac, and Old Mac G2 are the best choice for hooves that measure greater in width than they are from heel to toe. While the profile is less sleek than the Epic, Edge or Glove boot, the Boa and the Old Mac are still both well suited for everyday riding or shod-to-barefoot transitions.

Easyboot RX



The EasyBoot RX is a therapeutic boot designed for horses in difficult transitions, from acute laminitis to navicular disease. Stable, sturdy, lightweight and ventilated, the RX accommodates the 12mm Comfort pads, which are available in three densities for maximum comfort.

While there are still some breed and show organizations that do not allow boots in the show ring, barefoot advocates and boot

manufacturers are working hard to change that. The future looks very bright for barefoot and booted!

Please contact me for hoof boot help, parts, or service:
maria@thoughtfulhorseman.com, 619-865-9614

Here are some links for more great hoof boot articles and helpful hints:

More information on EasyCare's Product Line:
http://www.easycareinc.com/education/new_to_boots.aspx

The EasyCare Blog:
<http://blog.easycareinc.com/blog/easycare>

Pete Ramey's article on Boots and Pads:
<http://www.hoofrehab.com/bootarticle.htm>

Booting Tips and Tricks:
http://thoughtfulhorseman.com/BarefootHoofCare/barefoothoofcare_bootsandpads.htm

** "peripheral loading" refers to the undesirable and unnatural situation where the sole and frog are prevented from weight bearing, and the hoof wall and laminae, alone, support the entire weight of the horse.*

Taking Thrush Seriously

Most horse owners have dealt with thrush at some point. But how much do you really know about thrush? Here are some important thrush facts.

The medical term for thrush is "digital dermatitis". While most people associate thrush with fungus, it is most frequently a bacterial infection, although there can be fungal involvement. Although culturing the infection can be difficult because of the inherently dirty environment a horse's hoof is subject to, the bacterium most likely to be involved is *fusobacterium necrophorum*.

In cattle and sheep, this infection is considered to be the leading cause of devastating lameness. It is equally as dangerous for your horse's soundness if left untreated. Chronic thrush doesn't just affect the frog, but can eat deep into the underlying structures, where it can cause permanent damage. It has even been implicated as one of the causes of navicular syndrome.

Some studies indicate as many as 90% of our domestic horses suffer from some degree of bacterial/fungal hoof infection related to thrush. Sedentary horses living in small, moist pens or stalls are most at risk, but even horses in larger enclosures, and dry climate hooves, are susceptible if the area is not kept free of manure.

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A particularly nasty thrush infection that invaded the sole corium at the frog apex.

Movement may be one of the most important factors in preventing thrush. A bare hoof flexes, expanding and then contracting again with every step. This natural flexion helps the hoof to self-clean. It also stimulates circulation in the foot. Poor circulation predisposes tissue to infection.

Nutrition plays a major role as well. Diets high in sugars, as well as diets high in iron and deficient of copper and zinc can predispose the horse to thrush infection.

While a mild case of thrush probably won't cause discomfort in a shod horse, barefoot horses are much more likely to have

sensitivity, especially when ridden over rugged or rocky trails. Each horse is an individual, though, some with better tolerance for pain than others, and just because your horse shows no signs of discomfort doesn't mean you shouldn't treat even mild thrush aggressively.

Read more about thrush at TheHorse.com:

<http://www.thehorse.com/ViewArticle.aspx?ID=10253&eID=294622>

For hygiene tips, and the treatments I've found most effective and safe for treating thrush, go here:

http://thoughtfulhorseman.com/BarefootHoofCare/barefoothoofcare_hygiene.htm

More on thrush:

Thrush info and treatments from American Hoof Association Founding Member Linda Cowles at Healthy Hoof.com:

<http://www.healthyhoof.com/articles/Thrush/Thrush.html>

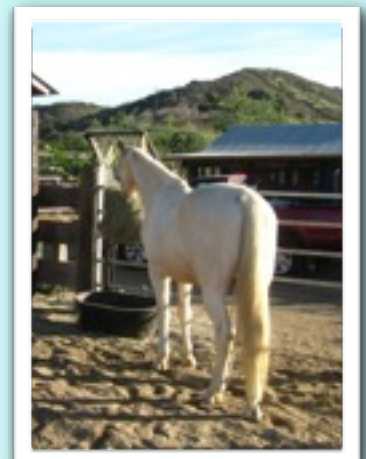
Pete Ramey, American Hoof Association Founder and Certified Farrier, at HoofRehab.com on Frog Management:

<http://www.hoofrehab.com/frogtrim.htm>

Food for Thought...Can Feeder Height Help Mitigate High/Low Syndrome?

Grazing stance has long been blamed for what we call "high/low syndrome", where one front hoof has a low dorsal angle, while the other sports a considerable steeper angle and higher heel. If you watch domestic horses eat their ration at ground height, it makes a lot of sense; the dominant foot with the lower angle is forward much of the time, with the high-heeled foot back under the body.

Since installing multiple slow-feeders for our horses at varying heights above ground level, I've noticed an interesting trend: the horses stand with their front feet square while eating. Is the high/low discrepancy changing? I'll have to wait and document for a while longer, but it certainly looks that way.



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About Maria Siebrand

& The Thoughtful Horseman...

With a background in the life science and pharma industries, and a determination to make life better for our domestic horses, Maria brings a science-based approach to horsekeeping, equine nutrition, and the field of barefoot hoof care. She offers barefoot hoof care services, nutrition consultations and diet formulation, horsemanship coaching, as well as a line of supplements formulated to fit the typical Southern California equine diet.

Maria is available for clinics, lectures, and mentorships on barefoot hoof care and progressive horsekeeping practices.



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