

# Finding The Balance: Feeding the Foot

**Diet has an important role in hoof health, but feed changes alone won't solve all potential problems**

**M**uch like the canary in the coal mine that identifies a dangerous situation, nutrient deficiencies often show up in the hoof wall and sole growth before they're readily observed in the rest of the horse. Obviously the foot isn't the only signpost that there could be a problem related to nutrition.

A horse's nutrition affects the entire body from the forelock through the gut to the hoof, and oftentimes a nutritional imbalance first presents itself in the hoof. By understanding the essentials of nutrition, you as the owner can take action when these problems first emerge — whether first in the feet or elsewhere.

## **Understand Nutrition's Role In The Horse's Foot And Overall Health**

For many owners, your horses are simply extensions of your family. But be careful not to think of your horses as similar to humans with their needs.

“On a cold winter night, we as humans are comforted by a warm, cozy house and a nice, hot stew,” says Darren Owen, owner of Indian Fields Farrier Service in Scottsville, Va. “It's natural for us to want to bring that comfort to our horses because they often are outside or in a barn. However, horses aren't aware these things exist and simply don't need it.”

The horse itself often will illustrate its needs. Your farrier can be a huge asset in keeping an eye on problems before they become too big. This is one reason why keeping your horse on a regular hoof-care schedule is critical.

“Dermal tissue is a voracious consumer of nutrients in the horse's body,”

explains Owen, who also serves as a clinician for Life Data Labs. “With the foot being one of those structures that depends so desperately on those nutrients, what farriers see is a breakdown in the foot first. Your farrier will recognize poor hoof quality — chipping, the integrity of the foot won't be very strong. We'll know very quickly that this horse needs some assistance — supplementation or overhaul in its diet.”

The hoof is not static, but is a dynamic structure that is continually changing and growing. A diet that is poor now, in 9 months can result in

## **Certain elements of diet are needed for healthy feet...**

poor hoof quality and perhaps a situation where the horse can't hold a shoe. Diet today affects future health and integrity of the foot.

But as soon as you recognize signs in poor nutrition for your horse, don't expect to make changes and see immediate results. The basic foundation of a healthy diet must already be there. By the time you see poor hoof condition, you must realize that there will be a lag time before the horse can grow new hoof horn. Instead, you need to be working on hoof health via diet all along.

## **Assess Your Horse's Body Weight**

Does your horse have a thick, heavy neck, fat pads on shoulders or base of the tail? These are some of the telltale signs of an overweight horse. Likewise, if the horse appears thin, with

visible rib or hip bones, your horse is underweight.

As you learn more about your horse's nutrition, it would benefit you to learn the essentials of body conditioning scoring. This is a numerical-based standardized system of assessing fat cover in a horse. It ranges from 1 to 9 with 1 being extremely emaciated, 5 being ideal and 9 being obese. Each number on the scale represents about 50 pounds.

By developing this universal system of body condition scoring, horse owners, veterinarians, nutritionists and other equine professionals are able to talk and be on the same page when discussing a horse's weight because perceptions among people vary. It's also helpful when tracking a horse's progress in a controlled weight-loss system. By using those numbers, everyone knows what you're talking about.

There are six areas to assess when measuring fat cover on a horse's body.

- ◆ Along the neck.
- ◆ Behind the shoulders.
- ◆ Along the withers.
- ◆ Across the ribs.
- ◆ Down the back or loin.
- ◆ Tailhead.

When evaluating each of these six areas, it's important to lay your hands on them and feel them in addition to just looking because appearances can be deceiving.

The body condition scoring chart has criteria for each of the six locations that correspond to the nine numbers on the scale. So you use that to come up with a number for each location and then average those to determine a general impression for that particular horse.

Obesity among the horse population

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\*Source: American Farriers Journal. Jan/Feb 2015. Page 87.



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is a major concern. Owen reports that obesity among horse populations has grown in his state of Virginia at amazing levels. Over the last 20 years, the documented number of obese horses in the commonwealth has grown by about 50%.

As mentioned before, signs of poor nutrition will appear in the feet too, depending on the circumstances. Your farrier or veterinarian can help access how nutrition is affecting the foot's growth, the density of the hoof wall, the sole and frog, and so on.

"It can be difficult for the horse owner to differentiate between nutrition and environment when looking at problems at the feet," explains Owen. "Is there unusual peeling? Is there a crustiness around the coronary band? Take a look at the general overall hoof quality."

### Measure Your Horse's Dietary Needs

Certain elements of diet are needed for healthy feet. These include amino acids (protein building blocks) such as methionine, along with glycine, proline and glutamine. Vitamin C and copper serve as catalysts in forming strong horn. Essential fatty acids are needed for maintaining proper moisture content and pliability. Vitamin A and calcium are also crucial.

Green grass supplies these needs, and a healthy horse creates the necessary B vitamins including biotin, in its gut.

Biotin improves weak, thin-walled feet in some horses when fed over long periods (9 to 12 months), but most horses don't need this supplement unless they are stressed.

The hoof also needs the proper balance of trace minerals. A lack of selenium, copper, zinc or magnesium are common issues.

But how certain can you be of what your horse is taking in? It is important to determine if the nutrient supply is aligned with requirements for your horse. While you can estimate a forage's quality by visually examining it, Owens says that if you are concerned about the nutritional intake, there are resources that will perform a chemical

nutrient analysis. Your local extension office could be helpful in recommending other reputable sources for these tests.

The focus of the horse's ration should be based on the forage available and its quality. The rest should be built around that forage.

"The primary diet is forage. Once you evaluate the forage, then you can look to make adjustments — where you can add on," explains Owen.

### Making Sense Of Hoof Supplements

What you feed your horse affects hoof health, but some horse owners take this concept too far. They fall into the trap of thinking they can resolve any hoof problem by feeding hoof supplements.

But these products are often over-used. A diet of green grass includes the needed ingredients for strong hoof horn

## You can usually tell if a supplement is making a difference on hoof problems...

(protein, fats, vitamins and minerals). Horses on pasture generally have the healthiest and strongest feet, with a nice, natural shine.

Old-time horsemen used "Dr. Green" when a horse had hoof problems — turning the animal out on pasture — to resolve nutrition deficiencies. Many horses today, however, live in stalls, small pens or paddocks, eating unnatural feeds. In these instances, an unbalanced diet (or a horse's inability to absorb or utilize enough of certain nutrients) may lead to foot issues and a hoof supplement may be necessary.

Consult with a veterinarian, farrier or equine nutritionist before you begin a supplement program.

"There are a sea of options for what's on the market, and not all will benefit your horse," explains Owen. "You need to do your research, and then move slowly onto a plan. You must make sure the supplement is useful for

the horse. Quite often the horse's body will have to figure out how to metabolize what we put in them. That's in addition to the job we're asking them to do for the discipline they participate in."

### Is Your Nutritional Plan Working?

You can usually tell if a supplement is making a difference on hoof problems. Though it takes about a year for a hoof to grow from hairline to toe, if you see a change in growth of hair in tail and mane, you know you're on the right track. This can show up in 1 to 2 months. When new hair at the base of the mane and tail is thick and shiny, the same type of process is taking place in the hooves. It just takes more time to see the benefits.

Many hoof-care supplements include biotin, methionine and zinc. Some are elaborate blends of vitamins, minerals, amino acids and probiotics. The latter aid digestion and are included in hopes they'll help the horse manufacture more biotin in its gut.

Selenium may be necessary if feeds are short in this important trace mineral. Selenium works with vitamin E to help protect fatty ingredients that serve as mortar to hold the hoof wall together. The amount and quality of these fats help determine the hardness and resilience of the hoof wall.

Poor feet can be improved by dietary supplements, but excessive supplementation can create hoof problems.

Too much methionine can block absorption of zinc, copper and iron, resulting in hoof horn defects. Too much selenium can cause excessive but poor quality horn growth, and cracks around the top of the hoof. Excess vitamin A can cause brittle feet.

Overdoing any supplement (or adding several products to your horse's diet for various purposes) can lead to overdoses, which can be harmful, serve as mortar to hold the hoof wall together. The amount and quality of these fats help determine the hardness and resilience of the hoof wall.

"Toxicity is a danger because not all supplements compliment one another," says Owen. **Q**