

# Down on the Farm

## The Contented Colon

*Keeping your horse's gastrointestinal tract in fighting trim will positively affect his attitude, performance and overall health, and help him avoid the agony of colic. Understanding what goes on in those shadowy recesses is the first step.*

by **KAREN BRIGGS**

If you have a veterinary textbook somewhere on your shelves, chances are you've seen one of those gory photos of a horse's innards—miles and miles of wet, purplish loops of intestine, spilling out in all directions. The poor equine posing for that photo had no doubt expired by the time the flash went off—and chances are, he only ended up being an intestinal poster boy because he'd been opened up by veterinary surgeons, in a vain attempt to save him from a case of severe colic.

What's my point? Well, the very thought of the sheer size and volume of the equine gastrointestinal tract makes it something tough to visualize, much less understand. It's huge, it's daunting, and it's persnickety to boot. But, if you'd rather your horse didn't end up on the operating table, opened up from stem to stern, it's vital that you have an idea of how his digestive system functions and what you can do to help keep it happy.

### ***Digestive Delicacy***

Under most circumstances, the equine gastrointestinal tract functions just as it's supposed to. But, as every horseman knows, it's also extremely sensitive—and easy to upset. Any sudden change in diet, for example, can adversely affect the population of beneficial bacteria which inhabit the cecum

(also called the hindgut) and which are essential for fiber digestion. When these bacteria start dying off, the horse may be at risk of colic, or at the very least, of not getting all the nutrients out of his feed. Thus it's always best if feed changes are made gradually, over a period of a couple of weeks.

Keeping the gut bacteria happy can be difficult if your horse is under stress. If he has been shipped a great distance, if he has recently suffered an illness or a surgery, if he's in hard race training, if he's recently been moved to a new herd situation, if he's a foal who's just been weaned, if he's been on antibiotics. . . any of these scenarios, and many more than I could list here, can predispose his gut bacteria to dying off. And, without a healthy population of bacteria working in the cecum to process fiber, most horses will find their ability to digest their meals compromised. They may drop weight, look listless and dull, suffer from anorexia (loss of appetite), and run an increased risk of colic.

Another trigger for digestive upset can occur when the horse receives a large, carbohydrate-rich meal (typically, one that is light on forage and heavy on grain). Under these conditions, the small intestine may not be able to completely process and absorb all of the nutrients it's supposed to, before the meal is moved on

to the hindgut by involuntary muscle contractions. Carbohydrates processed by the small intestine provide calories for energy—carbohydrates processed by the large intestine spell trouble. When excess amounts of grain reach the fermentation vat of the cecum, the gut bacteria do their best to process them. But the carbohydrates are broken down to produce not only volatile fatty acids, but also lactic acid. An increase in lactic acid lowers the overall hindgut pH level, which in turn can make the environment hostile for the gut bacteria. They begin to die off and, in the process, may release endotoxins (poisons). Between these and the lactic acid itself, the stage may be set for colic or laminitis. Suddenly the old horseman's rule of feeding small amounts, often, begins to make a lot of sense, particularly if your horse is on a high-grain diet.

What horses really need in their diets, for good gastrointestinal health, is fiber, and lots of it. Millions of years of evolution have optimized the equine digestive tract for extracting nutrition from gritty, fibrous grasses and weeds. . . and when it's kept busy doing that, the system generally operates without a hitch. The further we deviate from the horse's natural pattern of grazing and foraging, the more likely that we'll present his digestive tract with a challenge it can't handle. That

includes diets which contain more than 50 percent grain by weight.

As a general rule of thumb, horses should take in between 1.5 percent and three percent of their own bodyweight in feed every day—and ‘at least’ half of that (and often much more) should be forage of some kind. Whether it’s pasture, hay, or some other form of roughage, isn’t as important as the quantity—because the horse’s gut literally needs that amount in order to stay in good digestive health.

So why feed grain at all? In the wild, horses have no access to concentrated forms of carbohydrates—and little need for them, because they are not doing ‘work’ in the sense that we humans demand. But when we domesticated the horse, we began to ask him to expend energy over and above what he would normally do in the course of his wild day, and grains help provide the fuel he needs to perform for us. In addition, we breed horses to be larger, stronger, faster, more elegant and, often, less hardy and thus more dependent on high-energy concentrates to maintain a healthy body weight.

Nonetheless, grain should always be considered an optional add-on to the diet. It should be fed only as necessary to supplement the nutrition provided by his forage, and in accordance with his condition, his metabolism and the amount of work expected of him.

You can help make grain meals more digestible by feeding them in small amounts, and by choosing grains which are already partially processed, by rolling, cracking, or crimping the seed-coats. Pelleted and extruded feeds, which include grains ground finely and bound together with a binding agent, are also ‘pre-processed’ and easier to digest. Feeding partially processed grains rather than whole ones is a particularly good idea if you’re dealing with a horse whose digestive ability has been compromised by age (very old or very young), poor dental health, recent illness, surgery or any number of other stresses.

Likewise, if you suspect your horse’s digestive talents are operating at less than optimum performance, offer him hay which is soft and leafy, not coarse,

stemmy and tough. Or consider adding beet pulp or soaked hay cubes to his diet to provide him with extra fiber.

### **Boosting Digestibility**

Probiotics can be a useful addition to your horse’s diet if you’re trying to help him recover from a stressful episode. A probiotic is a culture of live microbes and/or their fermentative metabolites, which can help stimulate the growth of ‘good’ gut microflora. In turn, this should help the horse combat stress, absorb nutrients from his diet, and fight disease. Improved digestive efficiency (as indicated by weight gain, less undigested matter in the manure, and a generally improved outlook) has been reported as a result of the use of probiotics.

Consider adding a probiotic product to your horse’s feed if he:

- is under stress from showing, racing or shipping
- is a hard keeper or has a poor appetite
- has loose manure or chronic diarrhea
- has recently undergone a dietary change (or has just been weaned)
- has large amounts of undigested material in his manure
- shows other signs of digestive distress, such as recurring colic
- is recovering from surgery
- has received recent treatment with antibiotics or de-worming drugs
- has recently undergone a change of environment, such as being introduced to a new herd
- is struggling to adapt to extremes of temperature (a heat wave or cold snap)
- is over 18 years old.

Depending on the format and dosage you choose, probiotics can be used preventatively, on a short-term basis to treat specific problems, or at times when you expect increased stress levels (for example, before you ship your horse long distance). Some probiotics can be fed routinely, in a prophylactic mode—simple brewer’s yeast, for example, is an inexpensive probiotic addition to the diet which not only helps foster a healthy population of gut microflora, but is also a beneficial source of B vitamins.

If you live in an area which has sandy

soil, you’ll no doubt be familiar with the dreaded effects of sand colic. When horses ingest sand particles along with their feed (either while grazing or while eating hay or grain off the ground), the sand tends to accumulate in the gut, forming an interior beach which can’t be budged by normal intestinal contractions. Eventually, the sand can form an impaction (blockage) in the large or small intestine—and that can mean big trouble for your horse. Preventing sand from building up inside the gut is a constant challenge—you have to be careful not to let him eat from the ground and, in some cases, you may have to restrict his grazing and turn-out. Of the various products purported to help purge sand from the system, there’s good documentation only behind psyllium, a natural plant mucilage which binds to the sand in the gut and helps move it along towards the exits. (Bran, which is also sometimes recommended for sand removal, actually tends to float on top of the blockage and leave it untouched.) Ask your veterinarian for recommendations on the best routines with which to feed psyllium—some preparations are meant to be fed daily, others on an off-again, on-again schedule.

In order to keep your horse’s gastrointestinal tract in good shape, you’ll also want to ensure he never comes into contact with any toxic plants or materials. This may seem painfully obvious. . . but it’s doubly important when you’re dealing with horses, because unlike your household pets, they can’t vomit up a poison they’ve ingested. Read up on the toxic plants indigenous to your area, and do a careful sweep of your pastures and barn area every so often, looking for offenders. Many an owner has been caught unaware by an ornamental yew or an oleander bush—don’t depend on the bitter taste of these plants to necessarily warn away an inquisitive foal or bored broodmare.

Though keeping your horse’s digestive system in good health is a challenge in a domestic environment, it doesn’t have to be an impossible task. Keeping as close to his ‘natural’ lifestyle as you can is the best rule of thumb; the rest is pretty much common sense.