

Down on the Farm



Good Nursing: Feeding Your Sick or Injured Horse

by **KAREN BRIGGS**

Blossom is a sorry sight. Suffering from the symptoms of strangles—fever, a snotty nose, swollen lymph glands and depression—she's been standing with her head in one corner of her isolation stall for hours now, barely moving. Her morning grain is untouched and her hay has been trampled into her bedding, largely uneaten. Never a plump filly, she seems to have dropped 100 lbs. in the past two days as she rides out the infection, and you're starting to become concerned about her condition. Her lungs and sinuses may clear within the week, but the weight loss could take much longer to address.

Even sadder is your favorite broodmare, Custard, who underwent emergency colic surgery two days ago. She pulled through and will be ready to go home in a few more days—but you're worried about what to feed her. What can her patched-together digestive system handle now? What might throw her into a relapse?

Feeding a healthy horse is one thing—most of us have a pretty good understanding of what works and what doesn't. But feeding a horse who's sick, injured or recovering from surgery is another. Not only do you have to worry about what his compromised system

may be able to handle, but you also have to deal with potentially dramatic weight loss as well as the loss of appetite that often comes with fighting infection or pain. Getting your patient to eat is half the battle—the other half is helping him to maintain (or improve) his condition so his body will have its best chance of fighting its way back to health.

Dealing With Lost Appetite

How you design a diet for an ill or injured horse depends largely on what the problem is. For an otherwise healthy horse who is put on stall rest because of, say, a bowed tendon, reducing his overall caloric intake to match his sudden switch from active athlete to captive patient, is the important thing. In most cases, such a horse should be taken off grain altogether and placed on a high-fiber, long-stemmed hay diet which will supply his maintenance needs and occupy some of those lonely hours in the stall. But, unless confinement brings on a case of severe depression (as it sometimes does), he won't be likely to suffer any loss of appetite.

Some horses maintain a robust appetite in the face of anything short of nuclear war, of course, while others are likely to go off their feed at the slightest provocation. A loss of appetite may stem from a compromised

ability to taste or smell, from a decreased ability to chew and/or digest, or simply from the pain, fear or stress associated with an illness or disease. Picture the swollen jaw of poor Blossom, our filly with strangles, and it's easy to see why she would be reluctant to eat. Influenza, the respiratory form of equine herpes virus (EHV), pigeon fever, Lyme disease and Potomac Horse Fever, to name but a few, as well as chronic conditions like equine protozoal myelitis (EPM), are all diseases that may affect a horse's appetite.

Regardless of the cause, inadequate feed intake is more than just a symptom. It adversely affects all of the body's systems, and makes it much more difficult for the horse to fight off disease, heal his injury or respond to therapy. Getting feed into your horse on a regular basis throughout his troubles will help reduce the number and severity of any complications he might suffer, and will shorten his recovery time significantly.

As the saying goes, "You can lead a horse to water, but. . . ." You can lead him to his feed bucket, too, but getting him to consume the goodies within may be another matter. Be prepared to go the extra mile, by concocting feeds that are especially tempting. The traditional bran mash is not a nutritionally advantageous meal—its fiber content

is not terribly digestible, it has an inverted calcium/phosphorus ratio that could cause bone density problems if fed on a daily basis, and it often triggers a mild digestive upset that results in loose manure. But it has one singular advantage—most equines love the taste. If you're faced with a patient who refuses to eat, then a warm, sloppy bran mash that is laced with dollops of molasses and a generous pinch of salt might be just the thing to jump-start his appetite. It can also be a good place to hide oral medications. But, once you've gotten your horse to put his nose back in his feed bucket, wean him gradually off the bran and back to his regular diet as soon as possible.

If all attempts to jump-start your horse's appetite fail, don't hesitate to seek more drastic solutions. Complete food deprivation for more than three to five days not only suppresses the immune system, but it can also often trigger diarrhea which in severe cases may be fatal. Your veterinarian may recommend hospitalization so that your horse can be tube-fed or placed on

intravenous nutrient solutions (more on those in a moment).

Special Cases

Maintenance rations are adequate for most sick horses, according to Sarah Ralston, Ph.D., equine nutritionist at Rutgers University. As long as your horse's ability to chew and digest isn't compromised, try to avoid drastic changes in his diet while he's under the weather. Don't make an abrupt switch from grass hay to alfalfa, for example, in the mistaken belief that the extra protein or calcium will do him good. You'll likely just trigger a digestive upset on top of his other health problems. Any changes you do make to the diet should, as always, be done gradually over the course of a few days.

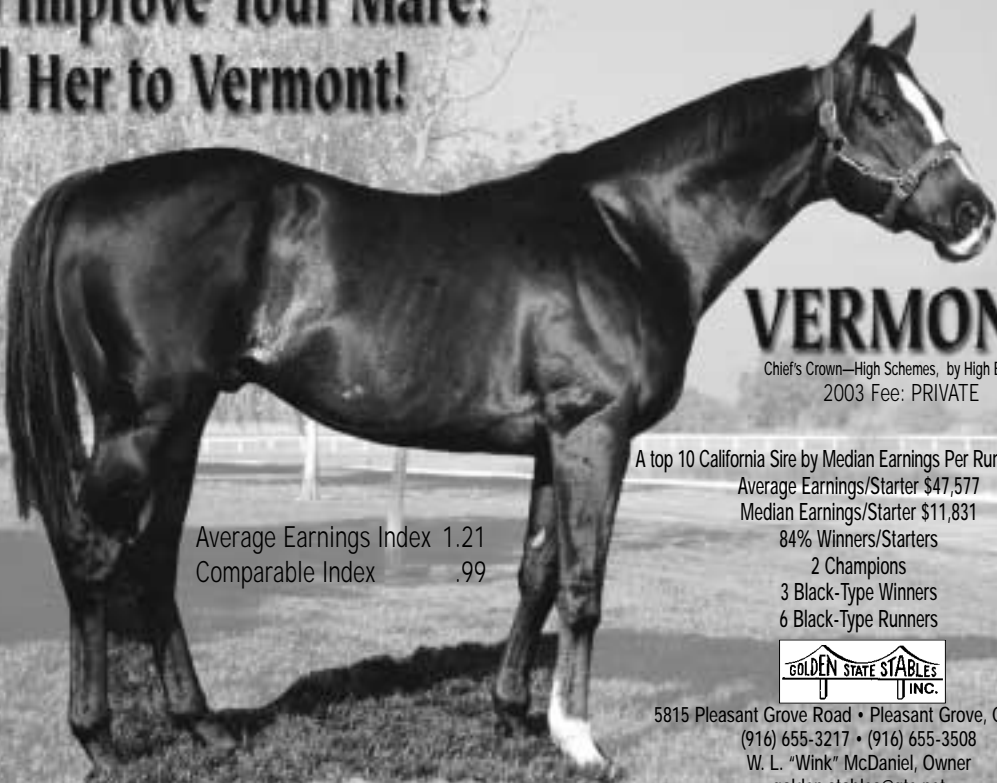
Some types of severe trauma, such as burns from a barn fire or sepsis (system-wide infection), make enormous energy demands on an afflicted horse. In order to bounce back from such challenges, his need for fluids, protein, water soluble vitamins and dietary energy will soar, up to 100 percent over his normal maintenance needs. Ralston recom-

mends a diet that provides 14 to 16 percent crude protein, seven to 10 percent fat, and high levels of B-complex vitamins, vitamin C (10 grams, twice a day) and vitamin E (1000 IU/day), and which is initiated immediately after the trauma occurs and maintained until the horse is clearly out of the woods.

Horses with liver failure (usually geriatrics) often have trouble processing excess protein, especially the 'aromatic' amino acids such as tryptophan, but can benefit from a diet supplemented with the short branched-chain amino acids leucine, isoleucine and valine. Grains such as corn or milo (sorghum) can help satisfy these requirements better than oats.

Because a compromised liver can't synthesize glucose as it should, these horses with liver problems also benefit from a high-starch diet which will make glucose more readily available to the body. Thus, a diet that is 50 percent grain is often recommended. B vitamins, especially thiamin and niacin, should be supplemented (yeast culture is one easy way to do this). Horses with

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liver failure should not be fed high-fat diets, and their salt intake should be limited, or at least not augmented, as it may contribute to edema ('stocking up'). Feeding three to six small meals a day also seems to ease digestion for liver-impaired equines.

Chronic kidney failure is another problem geriatric horses may face, and it's often coupled with depression and a loss of appetite. When the kidneys aren't functioning as they should, the horse has trouble excreting metabolic wastes, especially urea (the byproduct of excess protein in the diet), calcium and phosphorus. A diet based on grass forage can successfully limit the intake of excess protein and minerals, with corn (which is slightly lower in phosphorus and calcium than other cereal grains) added if more calories are needed for weight maintenance. Alfalfa, wheat bran and rice bran should all be avoided, as they contain high levels of protein, calcium and/or phosphorus. Again, supplementing B vitamins may be beneficial, as horses with kidney failure tend to lose most of these vitamins in their urine. It's also important to make fresh water abundantly available to kidney-impaired horses. Because their kidneys can't concentrate urine and conserve water as they normally would, they need plenty of liquid to help flush waste products out of their bodies, as a shortage can result in dehydration and death.

Surgical Scenarios

One would imagine that the stitched-together innards of a horse who has recently undergone colic surgery would be unable to handle solid food for days afterwards. In fact, the opposite is often true. Ralston recommends that after an intestinal resection, feed should be re-introduced as quickly as possible—within 24 to 48 hours, ideally. The reason? Prolonged fasting (for more than 72 hours) may result in atrophy of the intestinal mucosa, compromised healing of the wound and an increased susceptibility to diarrhea and infection.

There are no special dietary requirements for a horse recovering from colic surgery, where no portions of the intes-

tine were removed or even when the cecum (or less than 50 percent of the duodenum and/or jejunum) were resected, says Ralston. Hay can be offered, in small amounts, within hours of the horse shaking off the anaesthetic, starting at about a quarter of what he would normally eat and gradually working up, over a period of a few days, to his normal maintenance ration.

However, if portions of the large colon had to be removed during the surgery, the recovering horse will be in need of extra protein (over 12 percent) phosphorus (at least 0.4 percent), and decreased fiber, to compensate for the gut's decreased ability to process these nutrients in the first few weeks post-op, says Ralston. Should the horse need additional calories, she suggests that alfalfa hay, or an alfalfa/grass mix, with small amounts of grain be offered. Horses who have had very large sections of both the left and right bowel removed may need to remain on this diet for life, but those who had only portions of the left bowel and/or cecum removed usually regain their ability to absorb nutrients and can go back to a normal maintenance diet.

If the surgery involved a major resection of the small intestine, grain should also be avoided post-op. Instead, feed a high-quality legume hay with a beet-pulp-based concentrate such as Respond. A horse who has lost portions of his ileum will be less able to absorb fats, and thus will need his diet supplemented with the fat-soluble vitamins A, D and E. If the horse develops bleeding problems, Ralston suggests supplementing vitamin K, as well. He may also have an increased need for calcium, since the small intestine is the primary site for calcium absorption, though if he is eating a legume-based forage then the calcium contained in the hay should suffice.

In some cases, such as when the surgeon suspects that there may be a post-operative risk of the incision(s) gaping or tearing open, it becomes necessary to provide the patient's gut with feed that can be very easily processed and swiftly moved along. Hay cubes or complete pelleted feeds, soaked in

warm water to make a 'soup,' are the best answer for the first few days. Or, if these larger particles are poorly tolerated, the horse can be given a concentrated liquid diet based on human products like Ensure. At approximately one calorie per milliliter, it still takes about 16 liters of Ensure to fully supply a horse's nutritional needs—not very practical, even by stomach tube—but the liquid is useful as a supplement for short periods of time when the surgeon is concerned about the integrity of the suture lines. In the case of very extensive surgeries, where the horse is too weak to eat for more than 24 to 36 hours after the procedure, his caretakers may have to resort to feeding intravenously. Standard solutions with five percent dextrose won't provide enough nutrition, however. Instead, Ralston suggests intravenous amino acid and lipid solutions.

Making Minor Manure

A rare, but serious, complication of foaling is the tearing between the mare's vaginal and rectal passages. These have to be repaired surgically and, as you might imagine, there's an urgent need to soften and reduce the mare's fecal volume so as not to induce straining or tearing of the suture line and subsequent rampant infection. The volume of manure can be reduced to almost zero by tube-feeding the mare a human liquid diet before surgery. Afterwards, a high-energy, completely-pelleted feed, soaked in water and fed with up to 20 ml. of vegetable oil per kilogram of feed, is the best choice, providing sufficient food energy without high volume. Long-stemmed hay should definitely be avoided until healing is well advanced, even though soaked hay cubes or fresh pasture grass can be introduced to provide some forage content.

I sincerely hope that none of the scenarios discussed here ever occurs in your barn, but should you find yourself faced with an ill, injured or hospitalized horse, at least you'll have an idea of how to manage his nutritional requirements. So, here's to speedy recoveries and returning to "eating like a horse."