

Feeding Bran

Offering your horse a lovingly prepared bran mash may seem like a good way to warm him up on a cold morning, but it may be doing him more harm than good.

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September 28, 2001

When Laura arrived at the barn bearing hot bran mashes, the horses started nickering and smacking their lips. All of them, that is, except her Morgan gelding Justin. Justin turned and refused to even sniff his mash. The gelding's behavior puzzled Laura as she watched the other horses dive in greedily. Her annoyance grew as the mash she prepared with such care got colder and colder. Laura decided to go ahead and give the other horses their evening grain but to withhold Justin's feeding until his mash was gone. "No dessert until you eat your vegetables," she thought.

Feeding bran mashes is an equestrian tradition that has been passed down through multiple generations. Horse owners believe they are doing something positive for their horses when they feed them bran mashes. Offering hot mashes laced with carrots, molasses or other sweets gives horse owners a particularly warm fuzzy feeling in winter. Some people can be quite dogmatic about the proper way to mix and "cook" a mash, and recipes abound to provide our equine companions with a gastronomic variety. Evaluating the tradition of mashes in the wisdom of modern nutritional knowledge, however, may offer an explanation of why Justin turned up his nose at Laura's lovingly prepared equine cuisine.

Why We Feed Bran

Many ingredients have found their way into livestock diets because manufacturers were searching for a profitable use for the byproducts of the milling process. In the case of bran, the process was milling wheat and the byproduct was the large reddish-brown flakes of the grain's outer husk, which were removed before grinding the soft, inner kernel into flour.

Horses, people discovered, liked the taste of bran. And millers were more than delighted to sell bran cheaply to local farmers who fed it to their horses. There was only one problem with this turn-of-the-century feeding practice. Horses fed large amounts of bran over long periods of time developed a serious skeletal problem known as "big head."

Bran has an extremely lopsided calcium-to-phosphorous ratio of 1-to-12. The ideal ratio of calcium to phosphorous in a horse's diet is 1-to-1 or 1-to-2. With the ratio so badly out of balance, horses fed large quantities of bran stole calcium from their bones to achieve the right metabolic balance between the two minerals. Soft connective tissue replaced bone and created the enlarged, lumpish skulls that gave the nutritional disease its name.

Modern nutritionists eventually unlocked the secrets about mineral interactions and explained the cause of big head. Now, however, nutritional science is questioning the practice of occasional mashes for reasons that have nothing to do with mineral imbalances. Like those farmers who inadvertently overfed bran and caused big-head disease, modern horsemen may unknowingly be causing their horses distress when they feed bran sporadically as a weekly mash or as a constipation preventative just prior to traveling.

Not a Change for the Better

It is well known among veterinarians, nutritionists and experienced equestrians that a sudden change in diet causes digestive disorders in horses. At the least, the horse may experience mild intestinal discomfort that makes him cranky, anxious or sluggish. Diarrhea, excess gas, colic or laminitis are other possible consequences.

Sudden means that the change is made all at once, rather than gradually in small stages. A change in feed can be anything from switching to a new load of hay, substituting a different grain mix for one you've been feeding or turning a horse wintered on hay out on a lush spring pasture.

When a new feed or any other dietary change is gradually made over a period of days or even weeks, the horse's various gut microbes, which are essential for good digestion, vitamin synthesis and overall health, have time to adjust the size of their respective populations to the shifting ratios of carbohydrates, fats, protein and fiber they must process. But when a sudden change is made, it shocks the microbe population, destroys its balance and results in the death of a proportion of these beneficial and essential microorganisms. The dying microbes are not only unable to assist in proper digestion, but they also give off toxins that can be absorbed through the intestinal walls and into the horse's bloodstream to the detriment of the animal's well being.

If the sudden change is a relatively small one, the horse may experience abdominal distress and discomfort, such as mild gas or diarrhea, but not life-threatening consequences, such as colic or laminitis. Researchers now suspect that is what happens when horses get a weekly or occasional bran mash. Justin may be smart enough to have connected a queasy feeling in his hind gut with the bran mash he ate just before it started. Or perhaps his gut is more sensitive to changes than those of his barn buddies. Either way, he was trying to send Laura a message.

All Brans Are Not Created Equal

Rice bran is one of the newer feedstuffs to be marketed as an equine supplement and to find its way into commercial grain mixes. Like wheat bran, rice bran is the flaked outer coating of a grain. Like wheat bran, rice bran is high in fiber, protein and calories. Also like wheat bran, rice bran has a significantly lopsided calcium-to-phosphorous ratio. Unlike wheat bran, however, a higher percentage of rice bran's calories come from fats rather than carbohydrates. And that makes a big difference in how it fits into equine rations. Rice bran contains 20 percent fat, a higher fat level than any other feedstuff commonly fed to horses, except animal or vegetable fats. A pound of rice bran contains 3.5 ounces of fat, nearly the same amount as a ½ cup of vegetable oil. That fat content also makes it a denser, heavier feed than fluffy, high-volume wheat bran. Rice bran is a coarse, buff-colored powder, while wheat bran is composed of large, flat, reddish or blonde flakes.

The combination of high fat and high fiber makes rice bran an ideal addition to the diet of hardworking performance horses. The fat provides extra energy without the hyperactivity and the risk of gastrointestinal ailments that are a risk when feeding high-starch grain diets. Fats are metabolically efficient energy sources because they produce lower internal temperatures from digestion than carbohydrate-rich grains, and horses can easily convert the fat they digest into energy. When it comes to adding water, however, rice bran turns more to mush than mash. Because of its higher fat content and small particle size, rice bran does not absorb water like wheat bran. If your purpose in feeding mashes has been to get more water into your horse's digestive tract, wheat bran is more suitable.

Why Do We Do It?
If occasional bran mashes are not good for horses, why do horse owners feed them? Many firmly held beliefs about mashes are based on nothing more scientific than old horsemen's observations as they guessed at causes and effects. Although nutritional common sense now debunks the mythology, horse owners still share it as gospel and are loathe to let go of the wisdom of ages. The reasons they give for feeding mashes include:

Myth 1. A hot bran mash warms a horse in winter. How long are you trying to warm the horse? The warming effects of the water used to make the mash may last five to 10 minutes after the horse eats it, less time that it probably took you to make the mash. A better way to warm a horse in the winter is to increase the amount of hay he eats. The heat of digestion from just 5 pounds of extra hay will raise the horse's internal core temperature 1.2 degrees Fahrenheit for nearly four hours.

Myth 2. A bran mash is a good way to get more water into a horse in the winter. How much bran are you feeding? A typical mash only uses about a quart or two of water, more or less depending on how soupy you decide to make it. Compared to the 5 gallons or more of water the horse needs daily, that's not a big deal. A better way to get more water into the horse in the winter is to make sure water buckets stay thawed and water is accessible. Finding a way to warm the water to approximately 40 degrees Fahrenheit in winter will keep horses drinking sufficient amounts and make the small amount in that mash insignificant. In summer, keep water palatable and free of algae or other contaminants by changing water frequently and scrubbing buckets and troughs regularly.

Myth 3. A bran mash is a good laxative to give a horse before a long trailer ride to prevent constipation. What do you mean by a laxative? By definition, a laxative is something that increases the water content of feces. Cornell University researchers studied the laxative effect of bran at various levels in the diet, with some horses being fed up to 50 percent hay and 50 percent bran. They found that there were only slight variations in water content of feces at various feeding levels, not enough to pronounce bran a laxative. Another study compared the stools of horses fed a ration of 10 percent bran and 90 percent chopped hay to those fed 100 percent chopped hay. No difference in the water content of the feces was found. So why do horses produce watery stool when they eat a bran mash? First, high-fiber bran increases the volume of the horse's feces. Second, since feeding bran mash only occasionally or even weekly represents a sudden change in diet as the gut microbes see it, they start to die off. That causes the diarrhea or watery stool that horse owners erroneously assume is a laxative effect.

If you are convinced bran is a must in the diet of a traveling horse or a mare about to foal, a better way to incorporate it

into their rations is to gradually add a little bran to the horse's regular rations 10 to 14 days before the event, and keep it at a constant level. Make sure the traveling horse drinks plenty of water on the journey by getting him accustomed to drinking water flavored with a hard peppermint candy or lemon drop, a powdered drink mix, a cola drink or any other tempting taste at home. As the water changes taste from place to place on the journey, adding the familiar flavoring can help keep the horse drinking sufficient water to help avoid constipation.

What Good Is Bran?

Since horses like the taste so much, bran can encourage picky eaters to clean up their feed. Bran can be fed in amounts up to 5 to 7 percent of the horse's total daily ration without causing harm. Balance out bran's phosphorous content by feeding it with alfalfa or other legume hays or, if feeding grass hay, by adding 2 ounces of feed-grade limestone to the horse's daily grain ration. Dry bran tends to be fluffy, and horses blow it around with their noses. Although it is perfectly fine to feed dry bran, moistening it keeps it from irritating the horse's respiratory tract.

Bran's biggest claim to fame is its high fiber content. Bran's fiber is mostly indigestible cell-wall lignin, cellulose and hemicellulose. These undigested bits are what bulk up the feces when bran is fed on a regular basis. The key word is regular. For example, if your horse eats 20 pounds of feed daily and you have decided to make bran 5 percent of his total ration, gradually add a quarter-pound of bran every three or four days until your horse is eating a pound of bran daily. Feeding bran as a regular portion of the horse's daily diet, rather than just as an occasional mash, will keep your horse's gut microbes happy and forestall constipation without causing diarrhea. On a program like this, Justin may be able to face his feed once again with gusto.