

Stabilized Rice Bran—Just the Facts, PLEASE

BY STEPHEN DUREN, PH.D., KENTUCKY EQUINE RESEARCH, INC.

Stabilized rice bran has become a popular dietary additive for many different types of horses. In the past five years, rice bran has achieved somewhat of a “cult-like” following with performance horse owners on the West Coast of the United States. Despite the popularity of rice bran, many horse owners are confused regarding the what, when and why of rice bran.

By Definition

Rice bran is the outer brown layer of the rice kernel. The bran used in horse feeds is removed during the milling process that generates white rice for human consumption. Since bran is such a small portion of the rice kernel, it has been estimated that nearly 1000 pounds of rice must be milled to produce a single 50-pound bag of rice bran.

Rice bran is a rich source of fat (rice oil), several B vitamins, and phosphorus. Most laboratories estimate the fat content of raw rice bran at between 20 and 25%. Unfortunately, raw rice bran has a very short shelf life due to its high fat content and a potent lipase enzyme, which immediately begins to break down the fat once the bran is separated from the rice kernel. To prevent rice bran from becoming rancid, it must undergo a stabilization process. Stabilization subjects the rice bran to heat and pressure which inactivate the lipase enzyme without destroying the nutritional value of the rice bran. Therefore, stabilized rice bran is defined by the American Feed Control Officials (AFCO) official publication as rice bran which has been treated soon after milling by heat or other means that will substantially reduce the lipase activity. As proof of stabilization, the government regulates that free fatty acid content (an indicator of fat breakdown) for stabilized rice bran will not exceed four percent.

Stabilized rice bran, a useful ingredient in horse feeds, should

not be confused with several other rice milling by-products that are unacceptable ingredients in horse feed. Raw (unstabilized) rice bran should not be fed to horses due to palatability problems and digestive upset which may result from rancid fat or spoilage. Other rice milling by-products which should not find their way into a horse’s feed tub are rice hulls and rice mill feed. Horses do not efficiently digest rice hulls. Rice mill feed is a combination of unstabilized rice bran and rice hulls.

Useful Nutrients

As previously mentioned, stabilized rice bran is a good source of fat. Table 1 compares the fat content of several ingredients commonly fed to horses.

Kentucky Equine Research has conducted several digestion trials involving EquiJewel, a stabilized rice bran from Producer’s Rice Mill in Stuttgart, Arkansas. The research has confirmed that the fat

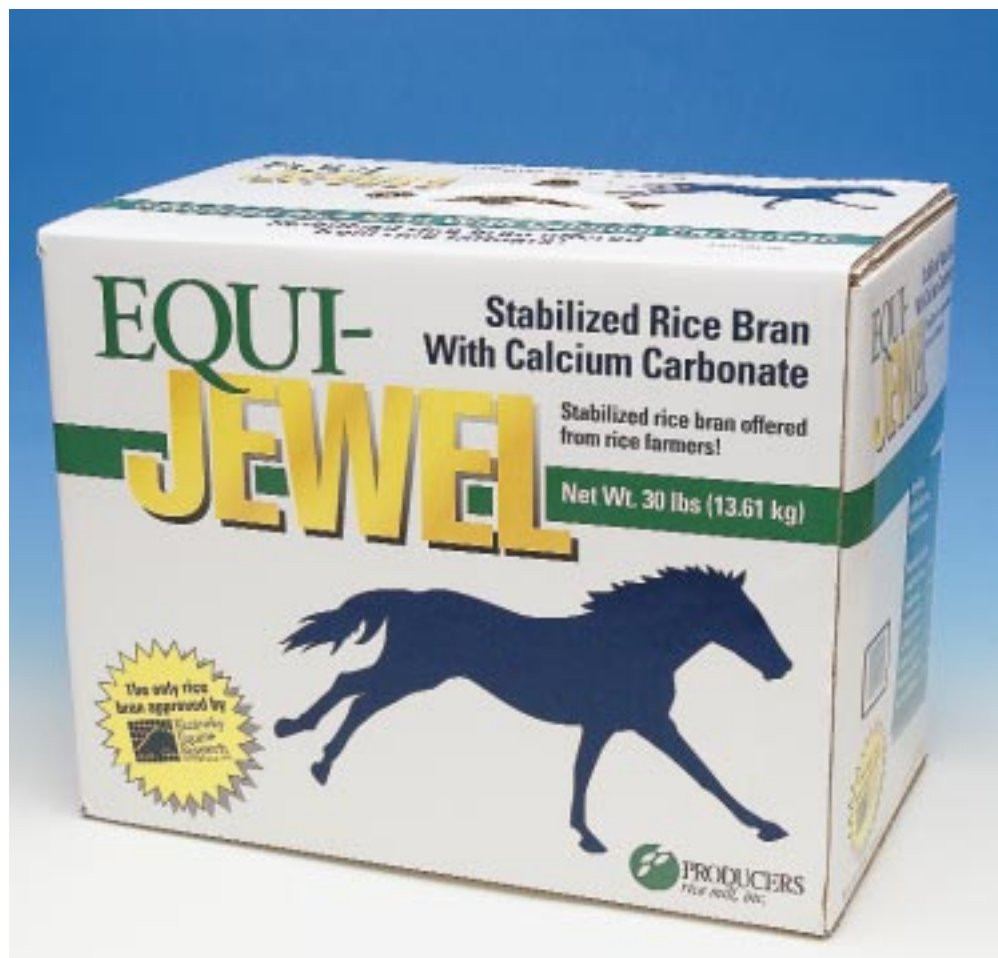


Photo by Jeff Rogers

Table 1.
Crude fat content of foodstuffs commonly fed to horses (as-fed).

Ingredient	Crude Fat
Alfalfa hay	2.4%
Timothy hay	2.5%
Corn grain	3.6%
Oat grain	4.6%
Stabilized rice bran	20%
Vegetable oil	100%

in EquiJewel is highly digestible and is equally as digestible as corn oil. In addition, fat in rice bran contains gamma oryzanol which has been suggested to have muscle building properties in horses. While this has not been proven scientifically, a number of reports from the field have indicated that young growing horses, hard keepers and equine athletes have shown improved body condition after rice bran supplementation.

A potential problem with many rice brans is that they contain more phosphorus than calcium. This may create an imbalance in rations that use grass hay as their primary forage source. EquiJewel rice bran is the only stabilized rice bran on the market today which contains added calcium so the calcium:phosphorus ratio is balanced. Thus, EquiJewel can be safely added to a ration without creating a nutrient imbalance. Finally, stabilized rice bran is a good source of B vitamins including thiamin, niacin and riboflavin. These B vitamins function in many chemical reactions which generate energy for the body.

When to Feed

Stabilized rice bran is a safe, palatable means of adding calories to the diets of many types of horses. Because many of the calories originate from fat, adding stabilized rice bran to the diet avoids potential digestive upset which may occur with high carbohydrate (grain) feeding. Stabilized rice bran also offers the advantage of providing fat in the diet without the mess of adding vegetable oil.

Many types of horses can benefit from the addition of fat in the form of stabilized rice bran. Performance horses benefit primarily in two ways. First, dietary fat serves as a calorie-rich feedstuff which helps the athletic horse meet its energy requirements. Second, for performance horses that have trouble maintaining their weight, stabilized rice bran functions as an additional energy source that does not require feeding more grain in the diet. The additional calories provided by stabilized rice bran can increase the energy density (increase the number of calories per pound) of the diet or reduce the amount of grain that must be fed to maintain condition. Finally, rice bran is being investigated

as a potential ingredient in therapeutic diets to manage horses predisposed to tying-up.

If stabilized rice bran is used to replace a portion of the grain in the diet, it is vital to remember that rice bran is not fortified with vitamins and minerals. Therefore, the horse will continue to require proper vitamin and mineral supplementation in addition to the stabilized rice bran. For example, performance horses should not have their entire grain diet replaced with rice bran without the addition of a balanced vitamin and/or mineral supplement.

Stabilized rice bran is also a popular additive to the diets of show horses and horses being prepared for public auctions. Both groups of horses are scrutinized for coat and body condition. With its elevated fat content, stabilized rice bran is a good source of essential fatty acids. These fatty acids are necessary for healthy skin and quality coat condition. In fact, one of the first benefits noted from feeding rice bran is a positive change in coat condition.

The diets of young growing horses may also benefit from the addition of dietary fat. Past and present research studies seek to evaluate the potential benefit dietary fat may have

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on minimizing post-feeding fluctuations in blood metabolites and hormones. Minimizing large fluctuations in blood metabolites and hormones may decrease the incidence of developmental orthopedic problems. Again, if stabilized rice bran is fed to young growing horses it is essential to maintain the proper level of essential vitamins and minerals in the diet. The addition of stabilized rice bran to the diets of young growing horses will not replace the fundamental need for sound vitamin and mineral nutrition.

In summary, rice bran is a highly digestible by-product of the rice milling industry. It should be heat and pressure stabilized prior to feeding to prevent rancidity and digestive upset. The primary feature of stabilized rice bran is its high (20%) fat content. Stabilized rice bran is convenient as an energy and essential fatty acid source in the diets of show and performance horses as well as young growing horses. Finally, stabilized rice bran should be viewed as an additive to a horse's diet and not a replacement for essential vitamin and mineral fortification. 