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# The double role of soybean hulls in feedlot cattle

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*This issue explains why soybean hulls can supply useful energy and reduce starch pressure in feedlot diets, but it cannot replace physically effective roughage.*

Soybean hulls often create confusion because they sit between feed categories. They are fibrous, but they are not roughage. They are not grain, but they supply meaningful energy. They can reduce acidosis pressure, but not because they behave like long-stem forage. In feedlot cattle, their value comes from a double role: they provide digestible fiber as an energy source, and when they replace cereal grain, they reduce the starch load of the diet. This can support rumen stability in high-concentrate diets, especially where long-stem roughage is present but limited. But soybean hulls must be used with a clear understanding of what they do, and what they do not do.

**Energy supply through digestible fiber**

Soybean hulls are the seed coat removed during soybean processing. They typically contain about 9–14% crude protein and may range around 64–80% TDN. Their energy does not come from starch. It comes mostly from highly digestible cell-wall carbohydrates. This makes them different from corn, barley, wheat, and sorghum, where starch provides most of the energy value. In feedlot terms, soybean hulls are useful because they contribute energy without adding the same rapidly fermentable starch load. They are not a low-value filler.

**Digestible fiber is not effective roughage**

The important distinction is between chemical fiber and physically effective fiber. Soybean hulls contain fiber on a laboratory report, but they do not behave like long-stem hay, straw, or silage in the rumen. Long-stem roughage stimulates chewing, saliva flow and bicarbonate secretion, rumination, rumen mat formation, and more stable intake behavior. The fine particle size of soybean hulls provides little physical scratch factor. They ferment as fiber, but they do not provide enough physically effective NDF to replace long-stem forage.

**Reducing starch pressure**

The acidosis-control value of soybean hulls belongs mainly in high-concentrate diets. If soybean hulls replace part of the cereal grain, the diet becomes less starch aggressive. Total starch falls, fermentation becomes less starch-driven, and the risk from rapid acid production may be reduced. This can be useful in receiving diets, step-up programs, dairy-influenced cattle, lightweight calves, heat-stressed pens, or finishing diets where intake variation makes starch exposure less forgiving. Soybean hulls do not reduce acidosis risk because they act like long-stem hay. They reduce risk because they dilute or replace starch with digestible fiber.

**Support but not replace roughage**
In many U.S. feedlot finishing diets, long-stem roughage may represent only 6–10% of diet DM. In such diets, soybean hulls may make the ration more forgiving by reducing starch pressure around a low roughage floor. They can support the roughage program, especially when the alternative is a very high-starch ration. But they do not allow roughage to disappear. If effective roughage is already too low, adding soybean hulls will not create enough rumen mat, chewing activity, or saliva production by itself. A diet can contain soybean hulls and still be short of physically effective fiber.

**Inclusion depends on diet purpose**
In practical feedlot diets, soybean hulls may be used at modest levels, for example 5–15% of diet DM. Higher inclusions may be possible in some receiving, growing, or limit-fed systems, but they require attention to bulk density, pellet quality, sorting, manure consistency, and intake rate. In a receiving diet, soybean hulls may help provide energy without pushing starch too early. In a step-up diet, they may smooth the transition toward higher concentrate intake. The correct inclusion is not fixed; it depends on cattle risk, grain source, grain processing, roughage level, diet moisture, and economics.

**Watch the practical risks**
Soybean hulls are not risk-free. Loose hulls can be bulky, dusty, and prone to shrink; pelleted hulls usually handle better, but quality varies. At high feeding rates, especially in diets short of long forage, cattle may eat rapidly, manure may loosen, passage rate may increase, and bloat risk may rise. Their calcium-to-phosphorus profile, potassium level, sulfur contribution where relevant, and total diet mineral balance should be checked rather than assumed harmless. The economic question is also system specific. In a finishing diet, soybean hulls should be priced against the grain they replace, the effect on diet energy, feed efficiency, acidosis risk, liver abscess pressure, carcass endpoint, and feed handling losses.

**In brief,** soybean hulls have a double role in feedlot cattle. They supply energy through digestible fiber, and when they replace grain, they reduce starch pressure. This can support rumen stability in high-concentrate diets, especially when long-stem roughage is present but limited. But, soybean hulls are not long-stem fiber, not true roughage, and not a substitute for effective forage. They should be used as a starch-management and fiber-energy ingredient, while the diet still protects chewing, rumen mat formation, intake consistency, acidosis control, and carcass performance through long-stem roughage.

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