

Feed Ingredient Substitutions

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Overall, no shortage of feed exists but because of production shutdowns and transportation issues some ration ingredients may be difficult to source or the price has increased and is no longer economical to feed. Supplies of distiller grains are quite limited because demand for gasoline is so low, which leads to less need for fuel ethanol. Distiller grains have about 27 to 30% crude protein (CP), 5 to 12% fat (depending on type of distillers), and 30 to 40% neutral detergent fiber (NDF). This profile makes it a useful feed to increase both energy and protein in diets, but because it is low in starch, it reduces the risk for acidosis. On the negative side, distiller grains can be very high in sulfur and unsaturated fatty acids. Both these can cause milk fat depression, and in addition, the high sulfur can interfere with absorption of some minerals. Although distiller grains has been an economical source of protein and energy, because of these issues, dietary inclusion rates are usually 10% or less of diet DM. If you remove distiller grain, you need to add back some protein, especially rumen undegradable protein (RUP) and energy, mostly from components other than starch. Corn gluten feed will provide about 20% less (not 20 percentage units) CP but about 50% less RUP. Depending on the fat content, distiller grains will have 5 to 10% more energy than corn gluten feed. A blend of about 80% corn gluten feed and 20% soybean meal (48% CP) will come very close to the composition of distillers. If corn gluten feed is not available, a blend of high fiber byproducts, such as wheat midds or soyhulls, and soybean meal will also come close to mimicking distiller grains. If those byproducts are not available, then you will likely need to use a blend of forage or whole cottonseed, corn grain, and soybean meal. When selecting the proper replacement blend, consider forage inventory and watch the concentration of starch in the diet. Without changing forage, a blend of about 50% corn grain and 50% soybean meal (48% CP) will equal the protein in distiller grains. If the diet contained 10% distiller grains, replacing it with a mix of corn and soybean meal will increase diet starch about 2 percentage units. If total diet starch will be 27% or less, this is not an issue; however, if the substitution will bring diet starch close to 30%, acidosis may be a problem. In that case, you will likely need to replace a portion of the distillers with forage or whole cottonseed. If forage inventory is

limited, consider incorporating a small amount of lower quality forage into the diet to ensure adequate fiber levels. Animal protein meals, such as blood meal and porcine meat and bone meal, are becoming very expensive because of production issues and meat processing plants. These feeds are usually fed to supply specific amino acids and will be difficult to replace with other ingredients if you do not use bypass amino acids. If you were feeding animal protein meals, you may have to accept a diet that does not quite meet desired amino acid concentrations, which may result in reduced milk protein yields, but based on current milk and feed prices, this may be less costly of an option.



Bottom Line:

The availability of certain feedstuffs is becoming limited; however, there are almost infinite ways to feed cows well-balanced diets. Find out what ingredients are available in your area, look at relative feed costs (see most recent Buckeye Dairy News for feed price comparisons) and have your nutritionist formulate different diets to see what may work. In some cases, a small decrease in milk component yields may have to be accepted. If high fiber byproducts and forage inventories are limited, watch diet starch levels very carefully. Acidosis has long term consequences.

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