

Keeping an Eye on Feed Costs: Protein Supplements

Bill Weiss

Most of the money you spend on feed for lactating cows is to provide net energy (NEL) and metabolizable protein (MP). Based on historic prices, approximately 25% of your feed dollars went to purchase MP, but because NEL is extremely expensive right now, MP represents about 17% of your feed dollars (still a sizable portion). The decision regarding which protein sources to purchase must be based on the cost of the nutrients in the ingredient and on any effects it has on milk production and composition. Protein sources can be broadly classified into two categories: generic protein sources and high undegradable (or bypass) protein supplements. The usual practice is to add generic protein sources first and then if needed, high bypass supplements are added. This article will address the choice of generic protein sources.

The most common generic protein source in the Midwest is solvent-extracted soybean meal (SBM) which is available as SBM-48 (48% crude protein) and SBM-44 (soyhulls are blended in to reduce the protein). When SBM-48 or SBM-44 are fed in balanced diets, no differences in milk production or composition occur so the purchase decision is based strictly on cost of nutrients. Because of differences in concentrations of NEL and MP, SBM-48, on average, is worth 1.16 times as much as SBM-44. If you can purchase SBM-44 for \$325/ton then SBM-48 is worth about \$377/ton (325×1.16); if SBM-48 cost less than \$377 you should purchase it rather than SBM-44.

Another common generic protein source is cottonseed meal (CSM). In experiments with medium (60 lbs/day) and high producing cows (90 lbs/day), replacing soybean meal with CSM (diets balanced for protein) usually did not effect milk yields, but milk protein concentration was often reduced by 0.1 to 0.15 percentage units. Depending on the price of milk protein and milk yields, this could reduce milk income by \$0.2 to \$0.25/cow per day. Based on nutrients, CSM (41% CP) is worth about 0.75 times as much per ton as SBM-48 *if* replacing SBM with CSM meal does not affect milk yield or composition. But because milk protein concentration is likely to decrease a larger discount should be applied to CSM. Based on typical inclusion rates and assuming CSM reduces milk protein by 0.1 percentage point, this could reduce the value of 1 ton of CSM by about \$50 compared with SBM. Replacing SBM with CSM should be considered carefully.

Canola meal is another generic protein source that does not appear to affect milk yield or composition when it replaces SBM in balanced diets. Based on nutrient concentrations, canola meal (mechanically extracted, 35% CP) on average is worth about 0.6 times as much as SBM-48.

When you purchase commodities for your farm, compare different protein sources to make sure you are not missing out on a bargain, but remember a cheap feed that reduces milk production or milk components is not a bargain, it's just cheap.