

Maintaining milk components when feeding co-products of corn ethanol production.

L. Armentano*, *University of Wisconsin, Madison.*

Use of DGS at 15 to 20% of ration DM may be economical, but requires caution to ensure optimal production of milk protein and fat. DGS can affect milk protein yield through altered diet carbohydrate and protein profile. Adequate dietary degradable protein should be supplied from other sources, and some attention to the lysine concentration in the remaining undegraded protein sources is warranted. However, recent research with modern DGS suggests that lysine content is less of a concern than previously thought. Starch content of the diet should be monitored for adequacy if DGS replaces grain. Laboratories may analyze DGS NDF with Na sulfite and NDFCP without sulfite. Using these values to calculate NFC as $100 - \text{ash} - \text{CP} - \text{NDF} - \text{Ether Extract} + \text{NDFCP}$, will overestimate NFC. Several characteristics of DGS may impact milk fat yield and composition. Excess oil may be present in diets with DGS. Different analytical methods (acid hydrolysis ether extract, ether extract variations) may not accurately measure fatty acids in DGS, and this content will vary. To the extent that DGS carbohydrate displaces starch, this will tend to have a positive effect on milk fat production, but care must be taken if DGS NDF replaces physically effective fiber from forages. Low forage fiber combined with high oil could trigger milk fat depression. If DGS is added to low oil diets, and diet oil is thereby increased, there may be less secretion of fatty acids shorter than 16 carbons, however, this may be compensated for by an increase in 18 carbon fatty acids arising from the increased dietary supply. Adding fat to diets often increases milk yields more than it does milk fat or protein yields. This is generally an economically positive response for low cost oils, but may be interpreted by casual observers as a decrease in fat or protein due to lowered milk fat concentration. Field reports of milk fat depression probably relate to all of the above considerations. New processes will result in co-products that differ in composition from DGS.

Key Words: Distillers Grains