

Evaluating wet and dry wheat DGS in growing pigs

ABSTRACT: A Swedish study on the characterisation and nutrient evaluation of wet and dried wheat distillers' grain for growing pigs found that dried wheat distillers' grain can have a lower ileal digestibility of lysine and methionine but a higher digestibility of phosphorus.



This study consisted of one wet wheat distillers' grain with solubles (WDGS) from an ethanol company and one dried wheat distillers' grain with solubles (DDGS) from a biofuel ethanol company.

The WDGS was microbially and biochemically characterised, and the digestibility of dietary components, energy, amino acids, calcium and phosphorus (P) in WDGS and DDGS was determined. The pH was 3.9 in the WDGS and the acetic and lactic acid level was 6.9 and 1.5 g/l, respectively. Lactic acid bacteria remained at Log 8 colony forming units (Cfu)/g WDGS throughout the study, whereas yeast increased from Log 5 to Log 6 Cfu/g WDGS. *Lactobacillus amylolyticus* was the dominant lactic acid bacteria species, followed by *Lactobacillus panis* and *Lactobacillus buchneri*. The yeast flora was completely dominated by *Candida ethanolica*.

The experimental diets contained on dry matter (DM) basis 50% WDGS + 50% basal diet (diet W) and 50% DDGS + 50% basal diet (diet D). The basal diet consisted of maize starch, sucrose, vitamins and minerals (except P).

Seven castrated male pigs with post valve t-caecum cannulas were fed the experimental diets according to a change-over design during two periods. In a pre- and post-period, casein was given as only protein source with the basal diet to estimate endogenous losses of nitrogen and amino acids, and thereby the standardized ileal digestibility (SID). The coefficients of apparent ileal digestibility (CAID) of organic matter (OM) did not differ between diets, but the coefficient of apparent total tract digestibility (CATTD) of OM was higher ($P < 0.05$) for diet W. The CAID, CATTD and SID of crude protein was higher

($P < 0.05$) in diet W. The SID for lysine and methionine was higher ($P < 0.01$) in WDGS than in DDGS. The digestibility of P was higher ($P < 0.01$) in diet D.

The results indicate that a dried wheat distillers' grain product can have a lower ileal digestibility of lysine and methionine than a wet wheat distillers' grain product, although a higher digestibility of P. There seem to be little difference in energy value of the wet and dry products studied.

For more information see [ScienceDirect](#)

by Pig Progress Sep 6, 2013