

TH316 Energy concentrations in distillers dried grains with solubles containing different fat concentrations and the effect of corn oil addition on energy concentrations in diets fed to growing pigs . D. Y. Kil¹, J. W. Lee², D. M. D. L. Navarro*², and H. H.

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An experiment was conducted to determine apparent digestible energy (DE) and metabolizable energy (ME) concentrations in 3 sources of distillers dried grains with solubles (DDGS) containing different fat concentrations and the effect of addition of supplemental corn oil to the diets containing low-fat DDGS on DE and ME concentrations of the diets. A total of 48 growing barrows were used in 2 separate periods and each period consisted of 24 barrows. Initial body weights of pigs were 17.5 ± 1.19 and 13.2 ± 1.53 kg for period 1 and 2, respectively. Each period consisted of 5-d adaptation period to the diets and 7-d collection period. Pigs were raised in metabolism crates at all times. Three sources of DDGS were conventional DDGS containing high level of fat (HF-DDGS), DDGS containing medium level of fat (MF-DDGS), and DDGS containing low level of fat (LF-DDGS). The basal diet was formulated with 972 g/kg corn and 3 diets were prepared by mixing 480 g/kg corn with 500 g/kg HF-DDGS, MF-DDGS, or LF-DDGS. Two additional diets were formulated by adding 15.0 or 23.0 g/kg corn oil to the diets containing MF-DDGS or LF-DDGS at the expense of MF-DDGS or LF-DDGS. Results indicated that the LF-DDGS diet had less ($P < 0.01$) DE and ME concentrations than the HF-DDGS diet, but the MF-DDGS diets had DE and ME concentrations that were not different from the HF-DDGS diet or the LF-DDGS diet. Addition of corn oil to the MF-DDGS diet or the LF-DDGS diet increased DE and ME concentrations of these diets, which were close to those of the HF-DDGS diet. The DE and ME concentrations of LF-DDGS and MF-DDGS were less ($P < 0.01$) than those of HF-DDGS, but the energy values for MF-DDGS were not different from those for LF-DDGS. In conclusion, low-fat DDGS has less energy value than conventional high-fat DDGS, and therefore, when low-fat DDGS is included in swine diets at the expense of high-fat DDGS, addition of supplemental oil or fat may be required to compensate for decreased energy concentrations in the diets.

Key Words: distillers dried grains with solubles, fat concentration, pig