

Pigs can regulate sulfur retention when distillers dried grains are included in diet

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Distillers dried grains with solubles (DDGS), a co-product of the ethanol industry, is becoming a more common ingredient in swine diets. However, DDGS can be high in sulfur, and data are limited on the amount of sulfur that pigs can tolerate in the diet. Therefore, researchers at the University of Illinois have conducted research to investigate effects of high levels of sulfur in diets for pigs.

"The [sulfur](#) content of DDGS can range from approximately 0.3 to 0.9 percent," explained Hans H. Stein, professor of animal sciences at U of I. "In a previous study, we determined that you can feed diets containing up to 0.38 percent sulfur without affecting palatability or pig growth performance. We wanted to follow up by determining whether or not the quality of the carcass was affected by the sulfur in the diets."

Stein's team used a source of DDGS that contained 0.3 percent sulfur. One of the experimental diets in the study contained this low-sulfur DDGS at an inclusion rate of 30 percent. The other diet had calcium sulfate added to simulate the use of high- (0.9 percent) sulfur DDGS. The sulfur content of the second diet was 0.38 percent.

Carcass length, 10th-rib fat depth, loin area, and fat-free lean were the same among pigs fed the control, low-sulfur, and high-sulfur diets when adjusted for hot carcass weight. No effect on organ weights, loin quality, loin pH, drip loss, loin subjective color, marbling, or firmness was observed in pigs fed either of the DDGS diets compared with pigs fed the control diet.

Pigs fed the diets containing DDGS did not have elevated concentrations of sulfur in their organs compared with pigs fed the control [diet](#). Instead, Stein said excess sulfur was excreted in the urine. Thus, excess dietary sulfur does not accumulate in tissues from pigs, as is the case for some other minerals, because pigs appear to be able to regulate sulfur in the body by increasing or reducing urinary excretion in response to changes in sulfur intake.

Stein said that the results of this research should give producers more confidence about incorporating DDGS into swine diets. "What these results tell us is that even DDGS with a high sulfur content can be fed at up to a 30 percent inclusion rate without negative effects because pigs have the ability to regulate sulfur retention and excretion," he said.

"Effects of dietary sulfur and distillers dried grains with solubles on carcass characteristics, loin quality, and tissue concentrations of sulfur, selenium, and copper in growing-finishing [pigs](#)," was published in a recent edition of the *Journal of Animal Science*.

More information: www.animalsciencepublications.com/articles/92/10/4486

Provided by University of Illinois at Urbana-Champaign

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