

Study shows differences in energy digestibility between sows and gilts

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Gestating sows digest energy in diets more efficiently than growing gilts. Credit: University of Illinois

Gestating sows digest energy in diets more efficiently than growing gilts. A recent study from the University of Illinois is shedding light on some of the reasons why.

"There are a number of factors that might explain the difference in

energy digestibility between sows and gilts," says Hans Stein, professor in the Department of Animal Sciences and the Division of Nutritional Sciences at U of I.

"Growing pigs are allowed to eat as much as they want, but sows are generally restricted in their feed intake. This may affect the absorption of nutrients from the digestive tract and thereby increase the efficiency of digestion," he says.

Stein and Ph. D. candidate Gloria Casas designed an experiment to separate the effects of physiological stage and feed intake level. They fed diets containing corn, soybean meal, and [rice bran](#) to 24 growing gilts at 3.5 times their [maintenance](#) energy requirement. They also fed 24 gestating sows at 3.5 times maintenance, and 24 more sows at 1.5 times maintenance.

The apparent total tract digestibility (ATTD) of gross energy and organic matter in diets was greater in gestating sows than in growing gilts, but the ATTD of dry matter and neutral detergent fiber (NDF) was not influenced by the physiological stage of the animals. The concentrations of digestible and metabolizable energy in diets were greater for gestating sows than for gilts.

"The results confirmed that there is a difference in energy and nutrient digestibility between sows and growing gilts," Stein says. "However, they provide evidence against the hypothesis that level of feed intake is responsible for the difference."

In fact, there was no difference between sows fed 3.5 times maintenance and sows fed 1.5 times maintenance in ATTD of gross energy, dry matter, organic matter, or NDF. There was also no difference in concentrations of digestible and metabolizable energy.

"The increased digestibility of energy in diets fed to sows has been explained by various factors, including more efficient fermentation of fiber in the large intestine," says Stein. "However, these results are evidence against that explanation. Sows didn't digest fiber any better than growing gilts."

Stein offers another possible reason for the difference in energy digestibility between sows and growing gilts. "It is possible that sows digest starch or lipids more efficiently than growing pigs, but we would need to do more research with ileal cannulated animals to test that hypothesis."

The article, "Gestating sows have greater digestibility of [energy](#) in full fat rice bran and defatted rice bran than growing gilts regardless of level of feed intake," is published in the *Journal of Animal Science*.

More information: G. A. Casas et al. Gestating sows have greater digestibility of energy in full fat rice bran and defatted rice bran than growing gilts regardless of level of feed intake, *Journal of Animal Science* (2017). [DOI: 10.2527/jas2017.1585](https://doi.org/10.2527/jas2017.1585)

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