

Study confirms glycerin as a feasible feedstuff for swine

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A study led by University of Illinois graduate research assistant Omarh Mendoza reports that swine diets may include up to 15 percent glycerin and achieve similar performance to a conventional corn:soybean diet. Credit: Omarh Mendoza, University of Illinois

An increased interest in biofuel production and a growing need to find cost-effective livestock feedstuff alternatives has led University of Illinois researchers to further evaluate the use of glycerin in swine diets.

This study, led by U of I graduate research assistant Omarh Mendoza, was published in the [Journal of Animal Science](#) and reports that swine

diets may include up to 15 percent glycerin and achieve similar performance to a conventional corn:[soybean](#) diet.

"Glycerin is not a new product, but little is known about its role as a feed ingredient for swine," said Michael Ellis, U of I professor in the Department of Animal Sciences. "Previous studies have shown variable results."

Glycerin is a major co-product of biodiesel production. This resulting liquid energy source is sweet and palatable, Ellis said. While it's more commonly used by humans, it has the potential for greater inclusion in [livestock](#) diets.

"We performed a standard feedstuff digestibility evaluation," Ellis said. "We determined its energy digestibility and metabolizable energy value. We used this value to formulate diets in a controlled study here at the U of I Swine Research Center."

The study determined that glycerin could be fed up to levels of 15 percent of the swine diet.

"We didn't test it at higher levels because the efficiency of use of the energy may decrease so we don't recommend using glycerin at levels higher than 15 percent," he said.

Previous studies suggested that feeding glycerin could improve meat quality, Ellis added. However, the U of I study revealed no effect of feeding glycerin on meat quality. The glycerin diet had comparable results to the corn:soybean diet.

Although glycerin looks to be a promising alternative, as with any feedstuff, it depends upon current market prices.

"Glycerin has alternative uses beyond being used as a feed ingredient," Ellis said. "It is available, but the demand for this ingredient sometimes causes it to be too expensive to use in a diet. But there are occasions when it's economically feasible to use. If the biofuels industry keeps growing, that could make it even more accessible in the future."

Aaron Gaines, co-researcher and Vice President of Production Resources & Operations at The Maschhoffs, said feed-flow issues need to be considered when using glycerin.

"Glycerin is available to the swine industry as crude glycerin," Gaines said. "Crude glycerin is a viscous liquid, and dietary inclusion rates of 5 percent or greater can result in feed flowability issues."

More information: This article, "Metabolizable energy content of refined glycerin and its effects on growth performance and carcass and pork quality characteristics of finishing pigs," was published in the *Journal of Animal Science*.

Provided by University of Illinois at Urbana-Champaign

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