

New probiotic improves pig health, reduces manure output

March 28 2014, by Ann Perry



Pigs fed a new probiotic as part of their diet reduced manure output by 20 percent, gained more weight and had better blood cholesterol and glucose levels, according to research by ARS scientists.

A new probiotic for pigs could mean less manure to manage, according to U.S. Department of Agriculture (USDA) studies. Agricultural Research Service (ARS) scientists conducted the first published investigation of the use of bacteria as a probiotic to increase fiber fermentation rates and reduce manure output in pigs that consume high-

fiber diets. ARS is USDA's chief intramural scientific research agency.

Pig producers would like to supplement livestock feed with dried distillers grains with solubles (DDGS) and other agricultural coproducts generated from biofuel production. But adding hard-to-digest fiber to livestock diets also increases the production of manure.

Microbiologist Cherie Ziemer and animal scientist Brian Kerr at the ARS Agroecosystems Management Research Unit in Ames, Iowa, fed the [pigs](#) in their study either a typical diet or a high-fiber diet. The high-fiber diet contained 10 percent soybean hulls and 20 percent corn DDGS.

The pigs were also given one of three bacterial supplements the scientists developed from different strains of *Bacteroides ovatus*, which had been obtained from human fecal samples and cultured in fiber-rich media. The three bacterial supplements were designated Bacterium B, C, and D.

Pigs that received the bacterial supplements designated as Bacterium B reduced their manure output by 20 percent. These pigs also gained more weight and had improved blood cholesterol and glucose levels, both indications of an improved energy status, compared to pigs not given probiotics.

Ziemer believes the [probiotic](#) could improve pig performance and reduce manure volumes, which in turn would increase producer profits and reduce the environmental footprint of pork production. She thinks the bacterium could be fed in a liquid supplement or possibly freeze-dried and mixed with feed.

This work was supported by a grant from the Defense Advanced Research Projects Agency as part of the Intestinal Fortitude Program, which investigates how to help people obtain more energy from fiber.

Results were published in the *Journal of Animal Science* in 2012.

More information: Read [more](#) about this work in the March 2014 issue of Agricultural Research magazine.

Provided by Agricultural Research Service

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