

Researchers Determine Digestibility of Blood Products as Feed for Weaners

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US - Because weanling pigs do not tolerate great quantities of soybean meal in the diet, alternative sources of protein must be used. Blood products, such as blood meal and plasma protein, are common ingredients in weanling pig diets and are considered high-quality sources of amino acids.

Researchers at the University of Illinois have determined the amino acid digestibility of five blood products produced in the US to provide swine producers with guidance for the use of these products in formulating diets.

"Blood meal usually is considered a good source of amino acids, but we don't know how the different blood products compare, and we don't know how the drying procedures influence digestibility," said Hans H. Stein, a U of I professor in animal sciences. "So that was what we wanted to determine."

To determine amino acid digestibility values, Stein and his team fed weanling pigs diets containing one of five different blood products. They used three spray-dried products: whole animal blood, blood cells, and blood plasma protein. They also tested two flash-dried products: avian blood meal and porcine blood meal. The researchers compared these blood products with each other and with casein.

The digestibility of crude protein and all amino acids in spray dried blood products were greater than or equal to that of casein. Digestibility values did not differ among the spray-dried products with the exception of isoleucine, which was less digestible in spray-dried blood cells than in spray-dried animal blood.

"The digestibility of amino acids in all the spray-dried products was very high. It was actually as good as casein in all cases, so whether it was spray-dried animal blood, or blood cells, or blood plasma, amino acids were virtually 100 per cent digestible," Stein said.

Flash drying, however, appeared to damage amino acids and reduce their digestibility. Amino acid digestibility values in both avian blood meal and porcine blood meal were about one-third less than those of spray-dried products.

These findings will help producers and feed companies determine the value of the blood products they use in weanling pigs diets. "The spray dried products are very good sources of amino acids for pigs," Stein said. "But if producers buy flash-dried blood meal, they should pay less than for the spray-dried products because it doesn't have nearly the same value in diets fed to pigs."

The study, "Comparative amino acid digestibility in US blood products fed to weanling pigs," was published in *Animal Feed Science and Technology* and was co-authored by Ferdinando Almeida of U of I, John Htoo of Evonik Industries AG, and John Thomson of Evonik Degussa Corporation.

The manuscript is available at <http://www.sciencedirect.com/science/article/pii/S0377840113000588>. Evonik Industries provided funding for this research.

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