

Dirty pigs need more dietary threonine

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Study results have confirmed that pigs raised on antibiotic-free diets in poor sanitary conditions need to have their dietary threonine (Thr) levels adjusted if they are to achieve optimal growth.

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Research over recent years has highlighted the key role of Thr in immune function, and the need to maintain adequate dietary Thr supply when pigs are subject to environmental challenge.

Most recently, a study from Canada's University of Manitoba compared the effect of increasing the ratio of dietary standardised ileal digestible (SID) Thr to lysine (Lys) in weaned pigs raised under clean and unclean conditions. [1]

Two groups of 90 piglets weaned at 21 days were fed *ab libitum* on five different diets with increasing standardized ileal digestible (SID) Thr:Lys ratios (55, 59, 63, 67 and 71%). One group was raised under clean conditions, and the other under unclean conditions. Average daily gain, average daily feed intake and gain:feed ratio (G:F) were measured and used to determine the optimal SID Thr:Lys ratio for each group.

The results revealed that a SID Thr:Lys ratio of 65% produced optimal G:F for pigs raised under clean conditions. In less sanitary conditions, this ratio increased to 67% for optimal G:F.

Commenting on the results, Dr. John Htoo, Director Global Technical Support – Swine at Evonik Nutrition and Care, said that more scientific evidence was revealing the importance of understanding the role of amino acids beyond growth under different production conditions.

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“It is becoming increasingly clear that we need to take a wide range of environmental and production conditions, such as sanitary status and antibiotic-free feeding, into consideration when formulating diets for pigs.

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“When pigs are reared in conditions where there is a higher immune challenge, then more Thr is needed for the production of immunoglobulins. So, the need for dietary Thr is increased, and we have to adjust the diet accordingly if we do not want to compromise productivity.”

According to Mr. Htoo, a better understanding of the roles of dietary components, such as functional amino acids, will allow producers to maximise the health and productivity of their animals.

“Our aim is to provide the building blocks for the most efficient and healthy animal feeds.”

Evonik produces a wide range of dietary products that are designed to enhance the performance of production animals.

Reference

1. *Effects of dietary threonine:lysine ratio and sanitary conditions on performance, plasma urea nitrogen, plasma-free threonine and lysine of weaned pigs.* Jayaraman *et al.* Animal Nutrition 2015; 1: 283–288.

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