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CALCIUM RESEARCH COULD TRANSFORM THE NEXT GENERATION OF FEED FORMULATION

A research project is spearheading advances in precision calcium (Ca) nutrition, paving the way for improvements in feed formulation that could result in optimised animal performance, feed efficiency – and ultimately profits – across the swine feed industry.

The project, underway at the University of Illinois and funded by AB Vista, aims to develop the foundation of a working digestible Ca system for use in commercial pig diet formulations.

As the project reaches its six-year mark, Dr Carrie Walk, one of AB Vista's Senior Research Managers, explains that the research taps into an important, yet significantly under-resourced, area:

“The contribution of Ca from dietary ingredients other than limestone or phosphate sources is often overlooked when considering feed formulation. Due to its low cost and abundant supply, Ca in the form of Ca carbonate or limestone is often added to as a flow agent, diluent or carrier in numerous feed ingredients. If the addition of Ca from these ingredients is not accounted for in the formulation, analytical Ca in the final diets can be as high as 20% more than expected. Unlike for phosphorus, there is currently no system to enable accurate formulation for digestible or available calcium. And, with Ca being such an important nutrient for

growth and skeletal development, pig nutritionists are appropriately cautious when formulating Ca into their diets in order to avoid deficiency.

“However, due to unaccounted-for Ca in the ingredients, there could be an excess of Ca in the diet and this can increase gastric pH and reduce digestibility of more expensive nutrients such as protein and phosphorus, negatively impacting on growth performance and feed efficiency.”

The research project, led by the university's Professor of Animal Science Hans H. Stein, initially aimed to generate standardised total tract digestibility (STTD) values for Ca across a range of common feed ingredients, to improve precision feeding in growing pigs.

“The end goal is to establish the requirement for digestible Ca for all groups of pigs. We would then be able to formulate diets based on the requirement for digestible phosphorus and digestible Ca. Ultimately, this would enable more precise feed formulation and nutrient supply, resulting in improved phosphorus, amino acid and Ca digestibility – which would positively influence growth performance, skeletal integrity and feed efficiency.”

Trials in the initial phase indicated there are endogenous losses of Ca and Professor Stein explains that these endogenous losses must be taken into account by using STTD values, to avoid under-estimation of the STTD of Ca in ingredients and allow formulation of mixed diets. Explaining the relevance of phytase use within the trials, he added:

“The studies have determined digestibility values both with and without the addition of a phytase and in most ingredients, especially those containing phytate, the STTD of Ca is increased in diets containing microbial phytase – and so it is important that this effect is taken into account when formulating feed.”

Professor Stein presented an update on the research at the third International Phytate Summit in Miami, Florida. Watch Professor Stein and Professor Ravi Ravindran of Massey University, New Zealand be interviewed on their research at <https://www.abvista.com/news/March-2017/Are-we-ignoring-dietary-calcium.aspx>

For more information, contact AB Vista on +44(0)1672 517 650 or info@abvista.com. Follow AB Vista on Twitter: [@ABVista](https://twitter.com/ABVista).

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Notes to editor:

AB Vista is an animal nutrition technology company offering pioneering products and technical services to the global animal feed industry. Since its establishment in 2004, AB Vista has grown to be a top-three player in feed enzymes and is also one of the largest suppliers of natural betaine to the global animal nutrition industry. The company invests heavily in research and development and has a growing portfolio of products and services spanning the poultry, swine, ruminant and aquaculture sectors. AB Vista is headquartered in the UK, with regional offices located in the USA, Brazil, Singapore, Spain, India, China, Germany and Finland.

AB Vista is part of AB Agri, the agricultural division of Associated British Foods, one of Europe's largest food & retail companies with a market capitalisation of £22 billion.

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