Influence de l'origine et de la granulométrie du carbonate de calcium sur sa valeur alimentaire pour le porc charcutier

Arnaud SAMSON (1), Jean-Paul VAN MEYEL (2), Claire LAUNAY (1)

(1) Inzo, Rue de l'Eglise, CS 90019, 02407 Chierry, France
(2) Carmeuse France, 91 Rue Avenue D'Acqueville, 78670 Villennes-Sur-Seine, France

asamson@inzo-net.com

Avec la collaboration de O. BUGHIN (2), E. CHAUCHARD (2), P. DESCHAMPS (1), C. MINETTE (1), F. PONCHON (2), F. VIARD (1)

Study of the effect of the origin and the particle size of the calcium carbonate on its nutritional value for pigs

Compared with other nutrients, calcium (Ca) is abundant and cheap. However, its metabolism is connected to the metabolism of phosphorus (P), thus the nutritional value of Ca sources has to be well described. Only a few papers have focused on the digestibility of Ca in carbonate and they did not report the quality variability of Ca carbonate. The objective of this trial was to assess the effect of the carbonate source on its nutritional value. Growing-finishing pigs (n = 108) were housed in individual pens. They received one of the six experimental diets throughout the growing-finishing period: one negative control (NC) with no Ca carbonate added (0.39% of total Ca) *vs* five diets supplemented with one of the five carbonates compared. The Ca carbonates differed in their geographical origin and particle size. All the diets presented the same level in digestible P and were used according to a feeding schedule. Data showed that the apparent digestibility (determined with an indigestible marker) of Ca at day 35 was significantly affected by carbonate origin and particle size. The P digestibility was also significantly affected by carbonate source ($P < 0.001$). Quantity of ash in bones was significantly higher for diets supplemented with carbonate in comparison with the NC. An increase in the level of dietary digestible Ca tends to induce an increase in the feed conversion ratio ($P = 0.08$). This study supports the consideration of Ca carbonate quality in diet formulation in order to optimize the P digestibility and the performance of pigs.