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Effects of L-valine supplementation on performance parameters of weaned piglets

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The branched-chain amino acid L-valine is typically the fifth-limiting amino acid in practical feed formulation in European pig diets. Current recommendations for the optimal valine:lysine ratio in piglet feed vary between different organizations indicating the need of further research. A trial was performed to evaluate the effects of graded levels of L-valine on the performance of piglets. 200 weaned piglets weighing 8.7±1.1 kg were randomly allocated to 5 dietary treatments. The treatments consisted of two basal diets (pre-starter and starter) providing valine:lysine ratios of 0.59 and 0.57 on a standardized ileal digestible basis and increasing supplemental valine providing valine:lysine ratios of 0.63, 0.67, 0.71 and 0.75 during the pre-starter phase and 0.62, 0.66, 0.70 and 0.75 during the starter phase. Throughout the experiment, the supplementation of L-valine to the basal diets resulted in a significant increase in weight gain and feed intake ($p < 0.05$). The benefits of additional L-valine were observed to occur in a dose-response relationship totaling a 17% higher weight gain in the groups provided a valine:lysine ratio of 0.75 compared to the basal diet. It can be concluded that the supplementation of valine deficient piglet diets with L-valine improves weight gain and feed intake and that a valine:lysine ratio of 0.70 can be suggested as the requirement of piglets in the body weight range of 8-30 kg.

Biography

Malte Lohoelter has completed his PhD from Halle University. He is a Technical Manager at CJ Europe GmbH, an affiliate of CJ CheilJedang, the world's leading feed grade amino acid producer. He has published more than 5 papers in reputed journals.

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