



WELFARE & NUTRITION

AWN-049

INVESTIGATIONS ON THE OPTIMAL VALINE:LYSINE RATIO IN WEANED PIGLETS

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Introduction

In practical piglet diets the branched-chain amino acid L-Valine (Val) is regarded as 5th limiting amino acid, but inconsistent information is available about the optimal Val:Lys ratio for piglets. Aim of this study was to investigate the optimal Val:Lys ratio through performance parameters.

Material & Methods

A total of 200 weaned piglets (8.7 ± 1.1 kg bodyweight) were randomly allocated to 5 dietary treatments containing different Val:Lys ratios on a SID base (0.59, 0.63, 0.67, 0.71, 0.75 during pre-starter phase and 0.57, 0.62, 0.66, 0.70, 0.75 during starter phase). The total trial duration was 43 days, divided in a pre-starter phase (0 – 13 d) and a starter phase (13 – 43 d). The diets consisted of corn, wheat and soybean meal (CP pre-starter: 18.05 %; Lysine pre-starter: 1.25 % SID; CP starter: 16.72 %; Lysine starter: 1.15 % SID). GLM procedure was used to compare treatment means, whereas orthogonal contrasts were applied to determine the linear and quadratic response to increasing doses of Val.

Results

The gradual addition of Val leads to a significant improvement in weight gain and feed intake over the total period and indicates a gradual increase in the Val requirement with the age period. Numerically the highest body weight gain (661 g) as well as lowest FCR (1.53) were observed in the 2nd half of the starter period (29 – 43 d) for a Val:Lys ratio of 0.70:1.00.

Discussion & Conclusion

The supplementation of Val to a basal diet improves the performance parameters of piglets. Especially in the 2nd half of the starter period a clear response to the Val supplementation was observed. Based on the results of the present study a Val:Lys ratio of 0.70:1.00 can be suggested for optimal performance results in piglets within a bodyweight range of 20 – 30 kg.