containing 3.6 g lysine/1 000 kcal DE were compared. The control diet was based on wheat, soybean meal and mineral and vitamin mixture. Diets 2, 3 and 4 contained wheat (about 80 %), only 14.8 % soybean meal and were supplemented with 0.53 % lysine HCl, 0.07 % methionine and 0, 0.10 and 0.20 % threonine. The four diets contained 23.8, 18.3, 18.2, 17.7 % crude protein and 0.85, 0.62, 0.71 and 0.79 % threonine, respectively.

Feed intakes were similar with the four diets (1 034, 1 043, 1 065, 1 072 g/day). Weight gains were 595, 567, 611 and 626 g/d. The feed conversion ratio of diet 2 (1.84) was significantly different from that of diets 1, 3 and 4 (1.74, 1.74 and 1,71). The threonine requirement of weaned piglets between 11 and 25 kg was therefore estimated at 0.70 % of the diet, i.e. 60 % of the lysine requirement.

Sulphur amino acid requirements of piglets and growing pigs

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Four trials were made to study the sulphur amino acid requirements of weaned piglets and growing pigs.

In trial A, 4 diets containing 0.41, 0.49, 0.57 and 0.66 % methionine + cystine were fed ad libitum to piglets weighing initially 10 kg. After 28 days of experiment the best performance were obtained with the diet containing 0.49 % methionine + cystine (1.42 g M + C/1 000 kcal DE).

In trial B, the digestibility of diets containing 0.41 and 0.57 % methionine + cystine was compared. Digestibility and N and methionine retention were higher with the diet containing 0.57 % M + C.

In trial C, diets containing 0.39, 0.47, 0.55 and 0.63 % M + C were fed ad libitum to 24 growing pigs (12 castrated males and 12 females) between 25 and 95 kg live weight. Between 25 and 45 kg, the best performance were obtained with the diet containing 0.47 % M + C (1.40 g/ 1 000 kcal DE). The sulphur amino acid content of diet 1 (0.40 %, 1.20 g/1 000 kcal DE) appeared sufficient above 45 kg live weight.

In trial D, a control diet (T) containing 0.16 % methionine and 0.15 % cystine was compared to a diet TM (T + 0.08 % DL-methionine) and a diet TC (T + 0.08 % L-cystine). The trial was made in piglets weighing initially 10 kg fed ad libitum for 21 days. Methionine supplementation significantly improved performance. Cystine supplementation neither improved weight gain nor feed conversion ratio and decreased feed intake. It was concluded that methionine should represent at least 55 % of sulphur amino acid supply.

Harmful effects of dietary calcium excess in pigs fed a plant-phosphorus-rich diet

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Dietary calcium excess may decrease phytic P digestibility in hamsters and rats and bone breaking strength in pigs. An experiment was made to compare Ca and P balances, mineral content, density and bending moment of bones in pigs fed either a high (1.4 %) or a normal (0.6 %) Ca diet for 2 months. No inorganic P was added and the total P (0.5 %), of which 70 % was phytic, and vitamin D_3 (1 000 IU kg) contents were the same in both diets.