

Summary

Two experiments were conducted to determine the lysine requirement of weaned pigs [Duroc X (York-shire X Landrace)] with an average initial BW of 7 kg and fed wheat–corn–soybean meal-based diets. The experiments were conducted for 21 days during which piglets had free access to diets and water. Average daily gain (ADG), average daily feed intake (ADFI) and gain to feed ratio (G: F) were determined on day 7, 14 and 21. Blood samples were collected on day 0 and 14 to determine plasma urea nitrogen (PUN) concentration. In experiment 1, 96 weaned pigs were housed four per pen and allocated to four dietary treatments with six replicates per treatment. The diets contained 0.99%, 1.23%, 1.51% and 1.81% standardized ileal digestible (SID) lysine, respectively, corrected analysed values. The rest of the AA were provided to meet the ideal AA ratio for protein accretion. Increasing dietary lysine content linearly increased ($p < 0.05$) ADG and G: F. In experiment 2, 90 pig-lets were housed three per pen and allocated to five dietary treatments with six replicates per treatment. The five diets contained 1.03%, 1.25%, 1.31%, 1.36% and 1.51% SID lysine, respectively, corrected analysed values. Increasing dietary lysine content linearly increased ($p < 0.05$) G: F, linearly decreased ($p < 0.05$) day-14 PUN and quadratically ($p < 0.05$) increased ADG and ADFI. The ADG data from experiment 2 were subjected to linear and quadratic broken-lines regression analyses, and the SID lysine requirement was determined to be 1.29% and 1.34% respectively. On average, optimal dietary SID lysine content for optimal growth of 7–16 kg weaned piglets fed wheat–corn–SBM-based diets was estimated to be 1.32%; at this level, the ADG and ADFI were 444 and 560 g, respectively, thus representing an SID lysine requirement, expressed on daily intake basis as, 7.4 g/day or 16.76 mg/g gain.