
A total of 64 gilts (PIC Line 326 x C15; initially 54 kg) were used in a 64 d growth trial to determine the total sulfur amino acid (TSAA) requirement of finishing pigs. Treatments were arranged in a 2 x 3 factorial with main effects of dietary lysine (0.70 and 0.55% total), 0.44% apparent digestible) and TSAA (60, 65 and 70% of total lysine). The control diets were cystine-deficient, grain sorghum-soybean meal based with added synthetic lysine, methionine, and threonine. All amino acids except cystine were formulated to meet or exceed current requirement estimates. DL-methionine was added to achieve the TSAA:lysine ratios. Lysine intake was 21.7 g/d for the respective lysine levels (P < 0.001). A lysine x TSAA interaction (P < 0.10) was observed for ADG. The TSAA:lysine ratio had no effect on any other response criteria. A positive lysine main effect was detected for all response criteria. Plasma urea N levels on d 21 and 64 were not influenced by TSAA levels. In this trial, increasing the TSAA:lysine ratio above 60% had no influence on finishing pig performance or carcass traits.

**Key Words:** Pigs, Cystine, Methionine


Two studies have been conducted to evaluate the effects of spray-dried plasma protein (SDPP) inclusion level and feed allowance on postweaning pig growth performance. In the first experiment, 180 pigs weaned at 21 d were allotted to 6 treatments (2 x 3 factorial). Treatments were low (3.75%) or high (7.5%) dietary SDPP and three levels of feed allowance (0.68, 1.36, or 2.72 kg per pig) of the Phase I diet. Phase II diets were offered to a total feed intake (Phase I + Phase II) of 5.45 kg. Thereafter, a common phase III diet were fed until 42 d postweaning. On average it took 4 d for pigs to consume 0.68 kg, 7 d to consume 1.36 kg, and 14 d to consume 2.72 kg of the Phase I feeds. The feed efficiency (P < 0.5) between two levels of SDPP (3.75% vs. 7.5%) on daily gain, daily feed intake, or feed efficiency. However, an improvement (P < 0.01) was observed in average daily gain and feed intake when feed allowance was increased over the initial 0 to 14 d period. At d 42, daily gain, feed intake, gain to feed ratio, and final body weight were the lowest (P < 0.01) when pigs were fed the low SDPP diet for the shortest period (3.75% SDPP and 0.68 kg). In the second experiment, 324 pigs weaned at 30 d were allotted to nine treatments (3 x 3 factorial). The experimental procedure was similar to Exp I including three feed allowance (0.7, 1.4, or 2.8 kg per pig) and three levels of SDPP (0, 3.75, or 7.5%) in Phase I diet. Pigs were fed experimental diet for 35 d and feed cost per kg of gain calculated. Over all, daily gain and feed intake were increased (P < 0.01) as SDPP inclusion level increased. Feed efficiency was improved by dietary P and P < 0.05). A feeding cost per gain was the lowest in pigs fed 7.5% SDPP and 2.8 kg as compared to the rest of the treatments. This data indicates that both the level of SDPP and the duration of feeding are important in determining the response to SDPP. If SDPP containing feed is removed too soon much of the plasma advantage is lost. Finally, increasing the exposure to SDPP beyond the typical Phase I period of 7 d may be warranted.

**Key Words:** Pig, Spray-Dried Plasma Protein, Inclusion Rate, Feeding Allowance

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**Key Words:** Protein Sources, Weaning Pigs, Performance


Two experiments involving 247 pigs weaned at 21 ± 2 d of age were conducted to evaluate spray-dried porcine plasma (SDPP), spray-dried bovine globulin plasma (SDGP), and a globulin-rich fraction of bovine plasma on postweaning performance. There were four replicates of four or five pigs (6.5 kg BW, 19.7± d of age) in Exp 1 and five replicates of six or seven pigs (6.4 kg BW, 22.5 d of age) in Exp 2. The basal diet (Diet 1) consisted primarily of corn, dehulled soybean meal, soy protein concentrate and dried whey, and was fortified with minerals, vitamins, antibiotics, and CuSO4 (250 ppm Cu). Diets 2 and 3 contained bovine globulin at approximately 50% and 100% of the globulin provided in Diet 4. Diets 4 and 5 contained 8% SDGP or SDPP, respectively. These diets (1.40% lysine, 0.42% methionine, 49% Na, and 3.24 Mcal of ME/kg) were fed for 14 d and were a common, Phase 2 diet (1.2% lysine) was fed thereafter. In Exp 1, pigs fed bovine globulin or SDPP during the 14-d postweaning period gained faster (174, 223, 254, 194, 266 g/d for Diet 1-5, respectively, P < 0.01) and consumed more feed (286, 352, 391, 336, 451 g/d, P < 0.01) than the controls. Gain and feed intake were increased in pigs fed SDPP, but lesser extent than in those fed bovine globulin or SDPP. Feed/gain was not affected by treatment (1.65, 1.60, 1.54, 1.75, 1.69). In Exp 2, bovine globulin, SDGP, and SDPP all improved growth rate (228, 287, 271, 268, 265 g/d, P < 0.05) and feed intake (333, 393, 380, 404, 426 g/d, P < 0.01), but not feed/gain (1.61, 1.57, 1.63, 1.68). These data indicate that proteins in the globulin-rich fraction are effective in improving postweaning performance in young pigs. A level of bovine globulin that is equivalent to that provided by 4% SDPP appears to be as effective as the level of bovine globulin supplied by 8% SDPP.

**Key Words:** Pig, Plasma Protein, Globulins

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