
Two hundred ninety-five pigs (initially 5.6 kg and 21 ± 2 d of age) were used to determine the effect of different soy protein sources fed during phase I (d 0 to 14 postweaning) on subsequent growth performance. Eight experimental treatments were assigned to pigs from d 0 to 14 postweaning. A constant diet (90% of control diet) was formulated to contain 1.0% lysine and 44% methionine. A soy protein source replaced casein on an equal lysine basis to form the four dietary treatments. The commercially available soy protein sources that were evaluated included 1) moist extended soy protein concentrate (MEPSC); 2) soybean meal (SBM); 3) soy protein concentrate (SPC) or 4) moist extended soy flour (MESF). From d 14 to 28 postweaning (phase II), all pigs were fed a common diet containing 1.25% lysine and 36% SBM diet containing 2.5% SDM and 10% DW. During phase I, there were no differences (P > 0.10) in ADG or feed efficiency (G:F) between pigs fed any experimental treatments. However, pigs fed the MEPSC based diet had higher ADG (P < 0.10) when compared to pigs fed either SBM or MESF. From d 14 to 28, pigs fed MEPSC during phase I had higher ADG (P < 0.01) when compared to the performance of pigs fed SPC and MESF and higher ADG (P < 0.05) when compared with pigs receiving the other experimental treatments. Pigs fed SBM during phase I had improved (P < 0.08) G:F compared to MEPSC and MESF. Cumulative data (d 0 to 28 postweaning) indicated that pigs fed the diet containing MEPSC during phase I had higher ADG and improved (P < 0.05) ADG and efficiency (G:F) compared to pigs fed the MEPSC (P < 0.05) or SPC (P < 0.10) treatments; however, pigs fed MESF were less efficient. Feed cost per pound of gain was the lowest for pigs fed SBM during phase I for overall performance. Pigs fed MEPSC in phase I had significantly (P < 0.05) higher ADG and MESF were 60 kg heavier at the end of the trial compared to pigs fed SBM; however, this advantage will have an additional expense associated with feed cost. In summary, earnings and performance must be considered before deciding to use SBM or MEPSC in the phase I diet. The results of this experiment indicate no advantage in using SBM or MEPSC in the phase I diet.


A total of 216 pigs (initially 4.9 kg and 21 ± 2 d of age) was used in a 35 d growth trial to determine the effect of dietary L-carnitine on growth performance and tissue accretion rates for the early weaned pig when fed a corn/soybean-based diet. Pigs were blocked by weight, ancestry, and sex in a randomized complete block design resulting in six pigs per pen and six pens per treatment. Four males and four females were slaughtered at the start of the study and carcass measurements were made. The carcass compositions were calculated to determine the effect of dietary L-carnitine in the phase I and II control diets. Experimental diets were fed in two phases from d 0 to 35 postweaning. During phase I (d 0 to 14 postweaning), the control diet was corn-soybean meal based, and included 7.5% spray-dried porcine plasma, 25% spray-dried soy flour, 17.5% spray-dried blood meal (SDBM), and formulated to contain 1.25% lysine and 36.4% methionine. On d 14, all pigs were switched to a phase II (d 14 to 35 postweaning) diet that contained 10% DW and 2.5% SDBM and formulated to contain 1.25% lysine and 36.4% methionine. L-carnitine replaced sucrose in the phase I and II control diets to provide dietary L-carnitine levels of 0, 250, 500, 750, 1000, and 1250 ppm. At d 35, three barrows and three gilts per treatment (1 pig/6 barrow and 3 gilts) were killed for carcass composition. Percentage carcass CP, lipid and daily protein accretion (DPA) were not influenced (P > 0.10) by dietary L-carnitine on d 35. However, daily fat accretion (DFA) was affected quadratically (P < 0.05) with increasing dietary L-carnitine with pigs on the 750 ppm L-carnitine having the lowest DFA. Based on the results of this experiment, L-carnitine addition reduces daily fat accretion and improves G:F when fed during the nursery phase.