Supplemental B-Vitamins in Pig Starter Diets

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Eight universities participated in a regional study to determine the efficacy of supplemental B-complex vitamins (BV) in starter diets. The basal phase 1 diet contained corn, soy, plasma, whey and lactose and was formulated to contain 1.5\% lysine. It was fed for two weeks. The phase 2 diet, which was fed for three weeks, contained corn, soy, blood cells and whey and was formulated to contain 1.3\% lysine. A mixture of all eight BV was supplemented at levels of 0 (negative control), NRC suggested requirements levels for the 5 kg pig (X), 2X and 4X. A total of 760 pigs in 35 replications at the eight stations were fed. ADG, ADFI and G/F calculations were made for phase 1, phase 2 and the overall. The SAS system procedure was used to generate AOV and orthogonal (linear, quadratic and cubic) contrasts. There was a significant station effect ($P < .0001$) for all measurements, but the station x treatment interaction was not different for any criterion at any time period. ADG was not different among treatments during phase 1, but highly significant ($P < .001$) linear and quadratic effects were observed during phase 2. Phase 2 means were 478, 536, 534 and 525 g/day for the 0, X, 2X and 4X levels of BV, respectively. The linear and quadratic effects were also significant ($P < .01$) for the combined periods (381, 421, 417 and 413 g/day, respectively). Treatment had a minimal effect on feed intake. There was an unexplained cubic effect during phase 1 ($P < .01$) but no statistical effect during phase 2 or overall. As with the gain data, G/F was not different in phase 1, but significant linear ($P < .01$) and quadratic ($P < .0001$) effects were shown in phase 2. Phase 2 G/F means were 0.58, 0.63, 0.63 and 0.61 for the 0, X, 2X and 4X levels, respectively. The combined data were also different (linear, $P < .05$); quadratic, ($P < .02$). We conclude that the NRC suggested requirement level of BV supplemented to starter diets is adequate to maximize growth performance.