

Nucleotide supplementation enhances piglet performance

S. Tibble¹, P. Köppel², and T. van Kempen³

¹SCA Iberica, Spain, ²Chemoforma LTD, Switzerland, ³Provimi RTC, Belgium

Nucleotides play several key roles in metabolism. They are the building blocks of RNA and DNA, intermediates in and regulators of energy metabolism, and co-factors for enzymes. The objective of this research was to determine if supplemental nucleotides enhanced performance of nursery piglets. Piglets (n=1280) weaned at 21 d of age were blocked into weight categories of 5, 6, and 7 kg and housed 12 per pen. Pens were assigned using a RCB design to diets containing 0 (control), 0.05%, 0.1%, 0.2%, and 0.4% nucleotides (Ascogen from Chemoforma Ltd, Switzerland). Piglets were fed high quality high zinc diets manufactured by SCA Iberica (Spain). Data were analyzed using analysis of variance and using treatment means the dose response was modeled using quadratic regression. ADG and G/F was significantly improved in all periods at 0.20% nucleotides. ADFI was only significantly changed in period 1 in which it was improved (Table).

Dose, %	ADG, g/d			FI, g/d			G/F		
	d0-11	d11-26	d26-68	d0-11	d11-26	d26-68	D0-11	d11-26	d26-68
0	127	363	543	137	438	961	0.92	0.83	0.56
0.05	138	371	559	142	437	954	0.98	0.85	0.59
0.10	143	378	567	146	427	940	0.98	0.89	0.60
0.20	151	386	577	147	424	934	1.02	0.91	0.62
0.40	140	367	550	142	418	961	0.99	0.88	0.57
<i>P</i>	0.00	0.00	0.00	0.00	0.20	0.15	0.24	0.00	0.00

The results of the dose-response analysis showed that nucleotide supplementation improved ADG by 18.7, 6.3, and 6.3% at an optimum dose of 0.23, 0.21, and 0.21%, in period 1, 2, and 3, respectively. In line with the results of the ANOVA, the feed intake response was less consistent, with an increase in feed intake in period 1 by 7.7% at a dose of 0.23%. G/F was improved by 10.4, 10.6, and 10.4 at doses of 0.25, 0.25, and 0.21% nucleotides in periods 1, 2, and 3, respectively. Overall, these data demonstrate that the optimum dose for nucleotides in order to optimize daily gain and gain/feed is 0.20 to 0.25%. The response for feed intake was variable and less strong.