

NONRUMINANT NUTRITION: VITAMINS

187 Evaluation of different vitamin concentrations on grow-finish pig growth and carcass characteristics.

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With recent increases in vitamin prices, the typical margins of safety used in formulation need to be evaluated. Therefore, the objective of this study was to compare two premixes with different vitamin concentrations on growth performance and carcass characteristics of pigs housed under commercial conditions. A total of 1,188 pigs (PIC 359×1050; initially 16.1 kg) were used in a randomized complete block design with 27 pigs per pen and 22 pens per treatment. There were two dietary treatments with different vitamin concentrations. Premix A provided the following vitamins per kg of premix: 3,527,360 IU vitamin A; 881,840 IU vitamin D; 17,637 mg vitamin E; 1,764 mg vitamin K; 15.4 mg B12; 33,069 mg niacin; 11,023 mg pantothenic acid; and 3,307 mg riboflavin. Premix B provided lower vitamin concentrations and contained the following vitamins per kg of premix: 1,653,450 IU vitamin A; 661,380 IU vitamin D; 17,637 mg vitamin E; 1,323 mg vitamin K; 13.2 mg B12; 19,841 mg niacin; 11,023 mg pantothenic acid; and 3,307 mg riboflavin. Premixes were included in the diet at 0.25, 0.15, 0.125, 0.10, and 0.075% from 16 to 27, 27 to 50, 50 to 75, 75 to 100, and 100 to 125 kg, respectively. Data were analyzed with pen as the experimental unit. Overall, there was no evidence for differences in ADG, ADFI, total pen gain and pen feed intake. There was a tendency ($P = 0.089$) for increased HCW for pigs fed Premix A due to a numeric increase in removal of lightweight pigs compared to pigs fed Premix B. No evidence for differences were observed for carcass traits, mortality, or percentage of pigs removed between the two treatments. In conclusion, the lower inclusions of vitamins A, D, B12, and niacin in premix B did not influence growth and carcass traits of grow-finish pigs.

Table 4. Effect of vitamin levels on growth performance and carcass characteristics of grow-finish pigs

Item	Premix A	Premix B	SEM	P<
BW				
Day 0	16.1	16.1	0.18	0.533
Day 138	124.8	123.5	0.60	0.101
Overall (0-138)				
ADG, g	785	783	3.3	0.730
ADFI, kg	1.94	1.92	0.011	0.308
G:F g/kg	406	408	1.8	0.368
Total pen gain, kg	2739	2751	23.9	0.693
Total pen intake, kg	6758	6753	72.3	0.952
Carcass characteristics				
HCW ¹ , kg	93.4	92.5	0.39	0.089
Yield, %	74.8	74.9	0.26	0.824
Backfat, mm	15.7	15.5	0.23	0.685
Loin depth, mm	65.6	65.8	0.35	0.714
Lean, %	57.2	57.3	0.13	0.593
Removals %	13.3	11.6	1.39	0.541
Mortality %	3.7	3.6	0.87	0.880

¹HCW= hot carcass weight.

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