



Impact of Various Acid Treatments During the Nursery Period

Introduction

A trial was conducted to determine the effect of various acid sources on weaned pigs during a 5-week nursery period. No antibiotic growth promoters were utilized in the trial. KEM-GEST™ brand was used as the positive control. Body weight and feed intakes were recorded and used to determine average daily gain (ADG) and feed efficiency (FG).

Materials and Methods

Pigs were housed in groups of 5-6 per pen with 3 square feet per pig. Pigs were allocated to treatments based on body weight and gender so that each treatment was represented in a gender and bodyweight class the same number of times. Pigs were given ad libitum access to feed and water throughout the trial period. Temperature was maintained at 82 °F for the first two weeks and 77 °F thereafter. Pigs were weighed every seven days and feeders were weighed back to calculate feed intake. The dietary treatments were as follows:

1. Treatment 1 – ButiPEARL™ brand 2 lbs./ton
2. Treatment 2 – Uncoated Calcium Butyrate 1.3 lbs./ton
3. Treatment 3 – KEM-GEST 4 lbs./ton
4. Treatment 4 – KEM-GEST 4 lbs./ton+ ButiPEARL 2 lbs./ton (K + B)
5. Control – No acid supplementation in Nursery Periods (Cont.)

Data was collected and submitted weekly. Data was analyzed using the PROC GLIMEX procedure from SAS.



RESULTS

The performance results by period are presented in Table 1.

Table 1. Pigs fed different organic acids (ADG: lbs./head/day)

PHASES Dietary trt	First (Day 0-7)		Second (Day 8-14)		Third (Day 15-21)		Fourth (Day 22-28)		Fifth (Day 29-35)	
	ADG	FG	ADG	FG	ADG	FG	ADG	FG	ADG	FG
ButiPEARL™	0.42	1.37	0.86 ^b	1.38 ^c	1.12	1.73	1.20	1.78 ^d	1.37	1.65
Butyrate	0.44	1.27	0.74	1.59	1.12	1.55	1.21	1.80	1.31	1.69
KEM-GEST™	0.40	1.38	0.74	1.51	1.21	1.42	1.33	1.66	1.32	1.66
KEM-GEST + ButiPEARL	0.47 ^a	1.30	0.80	1.58	1.20	1.48	1.34	1.64	1.33	1.72
Control	0.43	1.37	0.72	1.57	1.13	1.54	1.33	1.59	1.27	1.73

^a KEM-GEST+ ButiPEARL vs KEM-GEST P=0.048

^b ButiPEARL vs Control P=0.005

^c ButiPEARL vs Uncoated P=0.05

^d ButiPEARL vs KEM-GEST P=0.047

These data indicate that after two weeks of feeding, pigs fed the diet containing ButiPEARL performed better than pigs fed the uncoated calcium butyrate. In period four, pigs fed KEM-GEST performed better than those not fed KEM-GEST.

Table 2. Body weights of Pigs at the end of the trial

Dietary trt	Body weight (lbs.)	% change ^a
ButiPEARL™	49.4	2.3
Calcium Butyrate	48.1	-0.4
KEM-GEST™	49.1	1.7
KEM-GEST + ButiPEARL	50.2	3.9
Control	48.3	---

^a P=0.22

Overall, treatments with either ButiPEARL or KEM-GEST tended to increase body weight of pigs between 1.5 and 4 percent (Table 2). ButiPEARL appeared to improve the growth rate early, while KEM-GEST improved efficiency in the later periods. The health of the animals was very good. This trial provides insight into the potential actions of these products when bacterial challenges are low.