Performance of nursery pigs fed a customized antibiotic-free feeding program, with or without, three different types of feed grade antibiotics

F.B. Sandberg, S.J. England, T.M. Fakler, K.T. Soltwedel, J.E. Stevenson, and M.R. Bible
Furst-McNess Company, Freeport, IL

ABSTRACT: The objective of this study was to evaluate performance of pigs on an antibiotic-free program as compared to a program containing antibiotics in a commercial wean-to-finish research facility with a Fancom feeding system. A total of 938 weaned pigs were used with an average initial BW of 5.7 kg, 27-32 pigs/pen, and 8 replications/treatment. Pigs were blocked by BW, sow farm, sex, location within the barn and immediately placed on their randomly assigned, meal-form dietary treatments, which were: an antibiotic-free diet and no injectable antibiotics (ABF), 73 g/ton avilamycin (AVI), 400 g/ton chlortetracycline hydrochloride + 35 g/ton tiamulin hydrogen fumarate (CT), and 50 g/ton carbadox (CARB). If pigs received feed grade antibiotics, they also received individual antibiotic treatments as needed. Feed disappearance was recorded and pens of pigs were weighed on d 0 and 21, which was used to calculate ADG, ADFI, and FCR. Pigs fed AVI, CT, or CARB that were not responding to injectable antibiotic treatments were removed, tagged, and placed in sick pens. When deemed necessary to receive injectable antibiotic treatment, pigs fed ABF were removed, tagged, and placed in sick pens. Daily injectable treatments were recorded. Dead (% mortality) and pulled (% morbidity) pigs were determined at the end of d 21. Data were analyzed as a completely randomized block design using GLM procedure in Minitab with Fisher's test to determine differences between treatments. For d 0-21, pigs fed CT had a higher ADG (P=0.002) compared to pigs fed CARB or ABF with AVI being intermediate; pigs fed ABF had a lower ADG compared to pigs fed AVI with CARB being the intermediate. The ABF and CARB fed pigs had a lower ADFI (P=0.037) than CT with AVI being intermediate. There were no differences (P>0.10) observed for FCR. There were no differences (P>0.10) for % morbidity/pen; however, pigs fed ABF had a numerically higher % morbidity. Pigs fed feed grade antibiotics had a lower % mortality/pen (P=0.009) in contrast with pigs fed ABF. In conclusion, the results of this experiment provide reference data for antibiotic-free feeding programs.

Table 1. Summary of Day 0-21

	ABF	AVI	CT	CARB	SE	P-value
BW, kg	10.7[a]	11.0[a]	11.4[b]	11.0[a]	0.3	0.001
ADG, g	232[a]	254[b,c]	272[c]	248[a,b]	18	0.002
ADFI, g	310[a]	324[a,b]	341[b]	315[a]	21	0.037
FCR	1.34	1.28	1.26	1.27	0.12	0.541
% morbidity/pen	1.66	0.46	0.00	0.43	1.64	0.244
% mortality/pen	1.72[a]	0.00[b]	0.00[b]	0.40[b]	1.03	0.009