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EVALUATION OF OXYTETRACYCLINE (TERRAMYCIN®) VS. CHLORTETRACYCLINE FEED MEDICATION IN FINISHING SWINE

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Introduction and Objective

Some diagnostic laboratories have reported chlortetracycline (CTC) MIC values that are, at times, lower than MIC values for oxytetracycline (OTC) against certain swine pathogens.¹ These *in vitro* data suggest that CTC may offer more potent antimicrobial therapy than OTC. On the other hand, it has also been reported that *in vitro* susceptibility testing results for CTC using broth dilution methods could be questionable due to rapid CTC degradation in neutral to basic pH incubation media.² Researchers working for CTC manufacturers have stated that *in vivo* differences in antimicrobial efficacy between CTC and OTC were rarely observed.³ An integrated swine production system conducted a similar *in vivo* evaluation of CTC vs. OTC. The system wanted to determine if diagnostic reports indicating increased pathogen susceptibility to CTC vs. OTC would manifest in their pigs as improved health and production. Finishing pig health and performance was compared between groups fed CTC and OTC (Terramycin®) medicated feed programs.

Materials and Methods

Thirty-eight barns on six separate finishing sites and housing over 40,000 pigs were alternately assigned to receive feed medicated with CTC or OTC for two separate 14-day pulses, both dosed at 10 mg/lb. bodyweight daily. Both treatments were fed in the same finishing diets during similar time periods of each finishing phase. Each finishing site contained an equal number of barns receiving both treatments. Number and weight of animals placed at start, culled, and marketed were recorded for each barn. Animal deaths were also recorded. Average daily gain (ADG) and feed efficiency (F/G) were calculated. Means of barn and performance parameters for both treatment groups were compared using unpaired Student's *t* test.

Results and Discussion

No significant health nor performance differences ($P > .05$) were found between finishing pigs receiving CTC or OTC medicated feed (Table 1). Also, no differences in cull or mortality rates occurred between treatments. *In vitro* susceptibility differences between CTC and OTC did not correlate to any differences in live production for any parameters measured in this study. The only major difference between the two treatments was a 33% less medication cost per pig in the OTC medicated barns for the two 14-day pulses of tetracycline compared to the CTC medicated barns.

Table 1. Averages of barn values

Parameter	Treatment		P value
	CTC (n=19)	OTC (n=19)	
No. pigs started	1,073	1,055	0.26
Start weight (lb.)	50.36	48.80	0.48
Pigs marketed (%)	90.96	91.12	0.90
Market weight (lb.)	244.04	243.38	0.83
Death loss (%)	8.84	8.57	0.82
Culls (%)	0.20	0.31	0.66
No. days on feed	109.71	110.54	0.47
ADG	1.72	1.72	0.90
F/G	2.74	2.77	0.61

¹ Wolff, T. Comparison of *in vitro* MIC values for various swine respiratory pathogens to chlortetracycline (CTC) and oxytetracycline (OTC) for 2003-2006. *Proceedings of American Association of Swine Veterinarians*. 2007. 275-278.

² Wu, C.C., et al. *In vitro* susceptibility of tetracycline, chlortetracycline and oxytetracycline vs. *Mycoplasma hyopneumoniae*. *Proceedings of American Association of Swine Veterinarians*. 2002. 149-151.

³ Personal communication.