

EFFICACY OF DENAGARD™ (TIAMULIN) AS A WATER MEDICATION FOR
TREATMENT OF SWINE DYSENTERY IN FIELD TRIALS IN THE UNITED STATES

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Denagard™ (tiamulin) is 14-deoxy-14-((diethylaminoethyl) mercaptoacetoxy) mutilin hydrogen fumarate, a water soluble semisynthetic antibiotic found highly potent *in vitro* against *Treponema hyodysenteriae*, mycoplasma and numerous gram positive bacteria.¹

Field trials to establish the efficacy of the drug for treatment of natural outbreaks of swine dysentery in the United States were conducted in 6 geographical locations. Pigs in groups with clinical signs of dysentery were allotted by weight to treatment pens for test treatments. There was a total of 10 pens of 9 to 13 pigs on each treatment. Average initial weight of the pigs ranged from 10 to 61 kg between tests.

Denagard™ (tiamulin) was administered at 60 ppm (.006%) in drinking water for 5 days. Tylosin tartrate was administered at 66 ppm (.0066%) in drinking water for 5 days to comparable groups of pigs in each test as a positive control treatment. Medicated water was prepared fresh daily. The 5-day medication period was followed by a 3-week observation period.

Test variables examined included: (a) weight gain, feed conversion efficiency (gain/feed) and mean daily diarrhea index during the 5-day medication period and the percent pigs with bloody feces and percent pigs positive for treponemes at the end of medication; (b) mortality, weight gain and gain/feed over the total medication and postmedication observation periods, and the diarrhea index and percent pigs with bloody feces at the end of the observation period. Diarrhea index is an average numerical rating of the severity of diarrhea and may range from 1 (none) to 4 (severe).

Data from 6 trials were combined and statistically analyzed by the least-squares method of Harvey.² Percent pigs positive for treponemes and percent pigs with bloody feces were adjusted for initial incidences by covariance prior to analysis. The results of these analyses are presented in the table below. Values in items 2-7 are least squares treatment means. Paired treatment means found significantly different are indicated by superscript letters.

Item	Medication Period		Total Test Period	
	Denagard	Tylosin	Denagard	Tylosin
1. Number of Pigs	101	102	-	-
2. % Mortality	-	-	3.6	6.4
3. % Pigs with Bloody Feces	0 ^a	.63	0	7.07
4. % Pigs with Treponemes	4.2	58.1	-	-
5. Diarrhea Index	1.40 ^a	1.68	1.00	1.28
6. Average Daily Gain, kg	.708 ^b	.488	.593 ^b	.484
7. Gain/Feed	.49 ^b	.360	.249	.244

^a_p ≤ .05 ^b_p ≤ .01

Selected References: ¹Drews, et al. (1975) Antimicrob. Agents Chemother. 7:507
²Harvey (1960) USDA ARS Bulletin 20-08