

Sponsors

We thank the following sponsors:

Platinum

Bayer Animal Health
National Pork Board
Pfizer Animal Health

Silver

Boehringer Ingelheim Vetmedica, Inc.

Bronze

Cargill
Merck Animal Health
Novartis Animal Health

Copper

AgStar Financial Services
Elanco Animal Health
IDEXX
Newport Laboratories
PIC USA
PRRS CAP

University of Minnesota Institutional Partners

College of Veterinary Medicine
University of Minnesota Extension
College of Food, Agriculture and Natural Resources Sciences

Formatting

Tina Smith Graphics
www.tinasmithgraphics.com

CD-ROM

David Brown
www.davidhbrown.us

Logo Design

Ruth Cronje, and Jan Swanson;
based on the original design by Dr. Robert Dunlop

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, or sexual orientation.

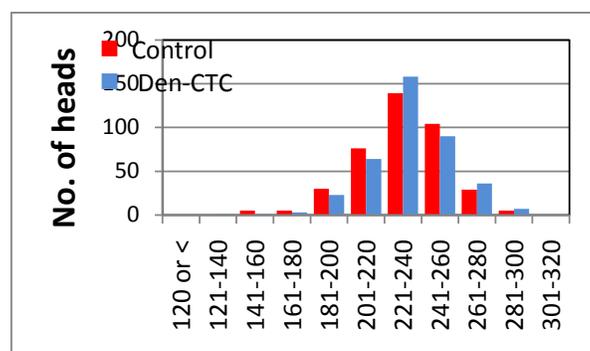
Introduction

Recently available data consistently show that feeding pigs with diets containing a combination of Denagard (35 g/ton) and chlortetracycline (CTC; 400 g/ton) has beneficial effects during the early growing-finishing period.^{1,2,3} This has been attributed to the effective control of bacterial pathogens that commonly affect pigs during this high-stress period thus, improving growth performance.⁴ Producers and veterinarians are interested in the long-term effect of the positive effect of using Denagard and CTC in early grow-finish. The objective of the study was to determine the impact of Denagard and CTC (DEN-CTC) combination fed in early grow-finish on health and performance of pigs throughout the growing-finishing phase.

Methodology

Previous diagnostic evaluations of the source herd also confirmed the presence of *Lawsonia intracellularis*. Treatments were (1) feeding non-medicated diet throughout the trial (Control), and (2) feeding diets containing DEN-CTC during the first 14 days in grow-finish and the routine (Denagard 14 day pulses) diet throughout the grow-finish phase after day 14 (DEN-CTC).

Figure 1. Final weight distribution



Results and Discussion

No significant health issues were observed. Overall mortality was relatively low for both treatments at 0.02% and 0.01% for the Control and DEN-CTC groups, respectively. During the medication phase (d 0 to 14), pigs in the DEN-CTC group exhibited higher ADG ($P < 0.001$) than those in the Control group. However, the increased ADG observed during the medication phase resulted in a significant increase in ADG ($P < 0.01$) during the d 0 - 28 period for the DEN-CTC group compared to the Control group. The improvement in ADG resulted in the DEN-CTC pigs to weigh 1.77 and 1.73 lb heavier ($P < 0.01$) than Controls at days 14 and 28, respectively. It should be noted that both groups were on the same feeding and medication program after d14 of the experiment.

Both groups received 2 additional 14-d pulses of DEN-CTC through the feed during the rest of the growing-finishing phase as part of the production system's standard ileitis control program. At the end of the trial, there was a 1.5 lb numeric advantage in average pig weight for the DEN-CTC group. This numeric advantage in pig weight was supported by the shift of the weight distribution for the DEN-CTC pigs towards the heavier weights (Figure 1).

In summary, the effect on ADG of the medication did carry-over to the 28 day period. The DEN-CTC exerted its effect on ADG mainly during the 14-day medication period. However, the impact of increased pig weight was maintained at the end of the 84-day finishing phase.

References

1. Wadell JT, Graham J, Roycroft L. Early finishing performance of pigs fed Denagard plus chlortetracycline vs. oxytetracycline in the grower diet. *Proc 41st AASV Annual Meeting*. Omaha, Nebraska. 2010:173-176.
2. Hammer JM, Dau D. Performance improvement of finishing pigs fed Denagard (tiamulin) plus chlortetracycline in-feed antibiotic vs. oxytetracycline in-feed antibiotic or non-medicated feed. *Proc 21st International Pig Veterinary Society Congress*. Vancouver, British Columbia, Canada: 2010:698.
3. Hammer JM, Dau D, Jacela J. Effects of Denagard plus chlortetracycline or oxytetracycline in-feed antimicrobials on growth performance of growing-finishing pigs. *Proc 42nd AASV Annual Meeting*. Phoenix, Arizona. 2011:263-264.
4. Anderson M, Campbell J, Walter D. Comparative performance of selected feed medications during critical production periods in SEW and conventional pigs. *Proc AASP Annual Meeting*. 1997: 161-164.

Table 1. Effect of Denagard Plus CTC on performance of grow-finish pigs¹

Item	Treatment ²		SEM	P <
	Control	DEN-CTC		
ADG, lb³				
Day 0 to 14	1.722	1.846	0.033	0.0003
Day 14 to 28	1.774	1.775	0.030	0.99
Day 28 to 84	2.233	2.228	0.058	0.69
Day 14 to 84	1.786	1.781	0.043	0.62
Day 0 to 28	1.748	1.810	0.032	0.01
Day 0 to 84	1.776	1.790	0.042	0.53
Weight, lb				
Day 0	57.6	58.5	4.111	0.32
Day 14 ³	82.2	84.0	0.459	0.0003
Day 28 ³	107.0	108.8	0.900	0.01
Day 84 ³	231.8	233.3	4.115	0.46

¹A total of 791 pigs were housed in 2 commercial mechanically ventilated grow-finish barns used with 27 pigs per pen and 44 pens per treatment.

²Control = non-medicated diets fed from d 0 to 14; DEN-CTC = diets containing Denagard and CTC at 35 g/ton and 400 g/ton, respectively fed from d 0 to 14. Both treatment groups were fed similar diets after d 14 to trial end.

³Adjusted to a common start weight (day 0 weight).