



PorkFACTS™

AN UPDATE OF RECENT SWINE RESEARCH

Economic Analysis of Feeding BMD® to Grow/Finish Pigs When Marketed After a Fixed Number of Days on Feed

► SUMMARY

An economic analysis was performed to evaluate the financial impact of feeding BMD® at 30 g/ton to grow/finish pigs. The analysis determined the BMD financial benefit for different feed costs and market prices for hogs. Results of the economic analysis model where pigs were marketed after 130 days on feed demonstrate that an investment in BMD generates significant financial returns, with benefits further amplified as prices for market hogs rise. The net financial benefits for BMD under the conditions of the model ranged from \$0.477 to \$5.066 per head, representing a return-on-investment range of 2:1 to 11:1.

An investment in BMD generates significant returns, with benefits further amplified as prices for market hogs rise.

► RATIONALE

- Fluctuations in production costs and market prices are a normal part of swine production and frequently provide economic opportunity for profit-savvy producers. However, drastic or unexpected upward swings in feed costs and/or reductions of market prices can force a reevaluation of management practices, prompting new strategies that will help sustain profitability under adverse conditions.
- Failure to evaluate the financial implications of 'routine' management in the face of volatile economic realities can often determine the difference between profit and loss.
- Supplementation of swine diets with appropriate antimicrobial agents has been shown to consistently improve the growth performance and feed efficiency of pigs.
- BMD® (bacitracin methylene disalicylate), when fed to pigs continuously at a level of 30 g/ton of feed, is the unique, versatile feed medication approved for increased rate of weight gain and improved feed efficiency, without any requirement for a withdrawal period prior to slaughter.

▶ RATIONALE (CONT.)

- BMD promotes a healthy intestinal tract in pigs, which helps enhance absorption of nutrients from the feed while allowing beneficial bacteria to thrive, maintaining the normal gut flora without concerns about resistance. Furthermore, the granular BMD formulation provides uniform dispersion, increased stability, reduced carryover, and less dust and fines.
- An economic analysis was performed to evaluate the financial impact of feeding BMD at 30 g/ton to grow/finish pigs. The analysis determined the BMD financial benefit for different feed costs and market prices for hogs, illustrating the value BMD can help deliver under various economic/production conditions.

▶ MODEL DESIGN

- A summary of 85 field studies demonstrated that BMD, on average, increased average daily gain (ADG) 4% and improved feed efficiency (FE, feed/gain) 3.3%.
- These average responses were used as inputs for BMD in the economic analysis model.
- The grow/finish feeding scenario used in the model evaluated pigs from 50 lb body weight until marketed after 130 days on feed (18.6 weeks).
- The analysis computed BMD benefits over a wide range of production and market conditions (feed costs ranging from \$100 to \$200 per ton, and market prices for finish hogs ranging from \$15 to \$65 per cwt).
- Parameters and/or calculated assumptions used in the economic analysis model are summarized in Table 1.

The economic analysis model evaluated BMD under a wide range of feed costs and market hog prices.

TABLE 1. Parameters and/or calculated assumptions employed in BMD economic analysis model (pigs reared for a fixed number of days).

Starting weight (lb)	50
Days on feed	130
Control ADG (lb)	1.70
BMD ADG response	4.0%
BMD ADG (lb)	1.77
Control FE (feed/gain)	2.70
BMD FE response	3.3%
BMD FE (feed/gain)	2.61
BMD cost/ton (30 g/ton)	\$1.70
BMD cost/pig (30 g/ton)	\$0.51
Feed cost/ton (range)	\$100-\$200
Market price/cwt (range)	\$15-\$65

▶ RESULTS

- BMD improved FE by 9 points according to model assumptions (2.61), allowing more pork to be produced per lb of feed consumed.
- The improved ADG of BMD-fed pigs (0.07 lb) produced market hogs 8.84 lb heavier per head after the 130-day feeding period, compared to controls.

RESULTS (CONT.)

- BMD financial benefits for various feed costs and market hog prices are summarized in Table 2 (last page of this document).
- Using the extremes analyzed in the model, the minimal BMD return over unmedicated controls was \$0.477 per head (highest feed cost of \$200/ton, lowest market price of \$15/cwt), representing a return on investment (ROI) of 1.9:1 even under these almost unimaginable circumstances (Figure 1).
- The maximal BMD return over unmedicated controls was \$5.066 per head (lowest feed cost of \$100/ton, highest market price of \$65/cwt), representing a ROI of 10.9:1 (Figure 1).

The economic benefit from using BMD ranged from \$0.48 to \$5.07 per head.

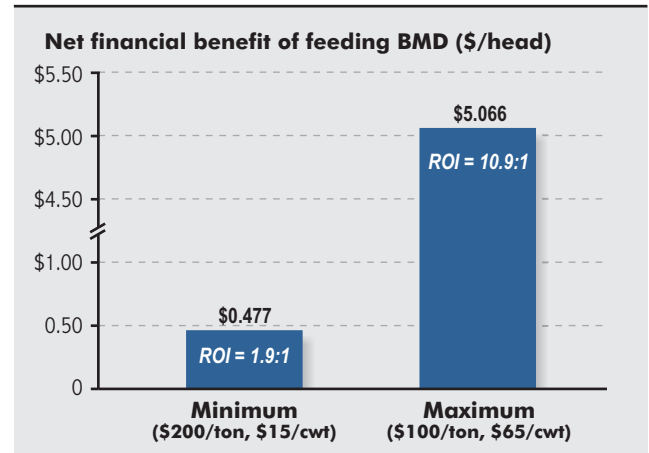


FIGURE 1: Net financial benefit of feeding BMD to grow/finish pigs; model extremes based on feed cost (\$100-\$200/ton) and market price of hogs (\$15-\$65/cwt).

- If more likely economic circumstances are considered (e.g., high feed cost of \$150/ton and market price of \$45/cwt), BMD generated net a financial advantage of \$3.21/head during the 130-day feeding period (Table 2).
- Under the model scenario of marketing pigs after a fixed number of days on feed, increasing the market price of hogs elevates the return from BMD because more pounds of pork are produced during the specified feeding period.
- The benefits of BMD illustrated in this model are conservative because other positive financial outcomes impacted by BMD were not included, such as reductions in ending-weight variation.
- Other model factors that would further amplify BMD benefits (despite per-pig increases in the cost of BMD) include increasing the days on feed and/or decreasing the starting weight (more time for optimal growth, resulting in more pounds of marketable pork). Additionally, decreasing the base FE ratio improves the return from BMD (spread in total feed costs gets wider and less feed is consumed, lowering BMD cost/head), as does improving the base ADG (increases weight advantage for BMD).

BMD delivers excellent value under various economic conditions.

CONCLUSIONS

Results of this economic analysis model (with pigs marketed after a fixed number of days on feed) demonstrate that an investment in BMD generates significant financial returns, particularly as market prices increase and feed costs decrease. Still, even under conditions of relatively high feed costs and low market prices, BMD delivers an excellent ROI.

TABLE 2. Net economic benefit per head from feeding BMD, at various feed costs and market prices.

Feed cost (\$/ton)	Price for market hogs										
	\$15.00	\$20.00	\$25.00	\$30.00	\$35.00	\$40.00	\$45.00	\$50.00	\$55.00	\$60.00	\$65.00
\$100.00	\$0.646	\$1.088	\$1.530	\$1.972	\$2.414	\$2.856	\$3.298	\$3.740	\$4.182	\$4.624	\$5.066
\$105.00	\$0.638	\$1.080	\$1.522	\$1.964	\$2.406	\$2.848	\$3.290	\$3.732	\$4.174	\$4.616	\$5.058
\$110.00	\$0.630	\$1.072	\$1.514	\$1.956	\$2.398	\$2.840	\$3.282	\$3.724	\$4.166	\$4.608	\$5.050
\$115.00	\$0.621	\$1.063	\$1.505	\$1.947	\$2.389	\$2.831	\$3.273	\$3.715	\$4.157	\$4.599	\$5.041
\$120.00	\$0.613	\$1.055	\$1.497	\$1.939	\$2.381	\$2.823	\$3.265	\$3.707	\$4.149	\$4.591	\$5.033
\$125.00	\$0.604	\$1.046	\$1.488	\$1.930	\$2.372	\$2.814	\$3.256	\$3.698	\$4.140	\$4.582	\$5.024
\$130.00	\$0.596	\$1.038	\$1.480	\$1.922	\$2.364	\$2.806	\$3.248	\$3.690	\$4.132	\$4.574	\$5.016
\$135.00	\$0.587	\$1.029	\$1.471	\$1.913	\$2.355	\$2.797	\$3.239	\$3.681	\$4.123	\$4.565	\$5.007
\$140.00	\$0.579	\$1.021	\$1.463	\$1.905	\$2.347	\$2.789	\$3.231	\$3.673	\$4.115	\$4.557	\$4.999
\$145.00	\$0.570	\$1.012	\$1.454	\$1.896	\$2.338	\$2.780	\$3.222	\$3.664	\$4.106	\$4.548	\$4.990
\$150.00	\$0.562	\$1.004	\$1.446	\$1.888	\$2.330	\$2.772	\$3.214	\$3.656	\$4.098	\$4.540	\$4.982
\$155.00	\$0.553	\$0.995	\$1.437	\$1.879	\$2.321	\$2.763	\$3.205	\$3.647	\$4.089	\$4.531	\$4.973
\$160.00	\$0.545	\$0.987	\$1.429	\$1.871	\$2.313	\$2.755	\$3.197	\$3.639	\$4.081	\$4.523	\$4.965
\$165.00	\$0.536	\$0.978	\$1.420	\$1.862	\$2.304	\$2.746	\$3.188	\$3.630	\$4.072	\$4.514	\$4.956
\$170.00	\$0.528	\$0.970	\$1.412	\$1.854	\$2.296	\$2.738	\$3.180	\$3.622	\$4.064	\$4.506	\$4.948
\$175.00	\$0.519	\$0.961	\$1.403	\$1.845	\$2.287	\$2.729	\$3.171	\$3.613	\$4.055	\$4.497	\$4.939
\$180.00	\$0.511	\$0.953	\$1.395	\$1.837	\$2.279	\$2.721	\$3.163	\$3.605	\$4.047	\$4.489	\$4.931
\$185.00	\$0.502	\$0.944	\$1.386	\$1.828	\$2.270	\$2.712	\$3.154	\$3.596	\$4.038	\$4.480	\$4.922
\$190.00	\$0.494	\$0.936	\$1.378	\$1.820	\$2.262	\$2.704	\$3.146	\$3.588	\$4.030	\$4.472	\$4.914
\$195.00	\$0.485	\$0.927	\$1.369	\$1.811	\$2.253	\$2.695	\$3.137	\$3.579	\$4.021	\$4.463	\$4.905
\$200.00	\$0.477	\$0.919	\$1.361	\$1.803	\$2.245	\$2.687	\$3.129	\$3.571	\$4.013	\$4.455	\$4.897