

Livestock Cost of Production Impact From Higher Grain Prices

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The Economics Department at Iowa State University has prepared and published the monthly Estimate Livestock Returns Series since the mid-1960s. This series is based on a set of production assumptions that are held constant over time. Prices for feed and feeder animal, as well as selling prices, change each month in order to estimate the profit or loss that livestock producers experience. Periodically, the department updates the assumptions to more closely reflect production systems in the industry. Such a revision occurred with the January 2007 report.

There is great interest concerning how higher corn and soybean meal prices from the bioeconomy impact livestock cost of production. While this long running series can help answer that question, it is important not to compound the analysis by using different production assumptions. Below, *Table 1* shows five different feed price scenarios and the resulting cost of production for four livestock enterprises using the 2007 production assumptions.

The four livestock enterprises are: farrow to finish, finishing feeder pigs hog enterprises, finishing calves, and yearlings cattle enterprises. The details of the 2007 production assumptions for these enterprises are available at:

http://www.econ.iastate.edu/faculty/lawrence/Lawrence_website/livestockreturns.htm

The five feed price scenarios include:

- 2001-06 average to reflect recent conditions
- January 2007 to represent current price levels
- Dr. Robert Wisner's forecast farm level prices for 2007-08 crop year
- CARD Ethanol report indicating corn prices would average \$4.05/bu
- The 1996 average price, reflecting the last time prices reached this level

It is important to keep in mind that the Estimated Livestock Returns series provides a barometer of profitability for an overall industry, not necessarily representative of any single farm. The series is modeled to represent above-average production efficiency and recognize that there is a great deal of variation in cost and returns across farms.

Results

The 2001-06 average was the lowest corn price considered, with SBM prices similar to January 2007 and Wisner '07-08 prices. Not surprisingly, the higher corn and SBM prices led to higher cost of production. Also, note that the non-feed cost for the feeder pig finisher and cattle feeders includes the purchase price of the feeder animal. Feeder animal prices are the actual monthly prices in the 2001-06 period and are consistent across all scenarios.

The farrow to finish feed cost per head increases \$14 from the 2001-06 average and January 2007 level and approximately \$20-23 per head for the three remaining scenarios. The cost of production increases over 20% at the three higher corn price scenarios. Feeder pig finishers' feed cost will increase \$15-17 per head. These producers will attempt to transfer some of these higher feed costs back to the feeder pig seller in the form of lower bids for pigs.

Cattle feeders use more corn per head than do hogs. They will have a larger per head impact on feed cost but smaller percentage change in cost of production. Cattle feeding also uses very little SBM and more distillers grains and solubles than do hogs. Feed cost per head increases \$74-96 per head for calves and \$64-84 per head for yearlings. On a percentage basis, cost of production for calves and yearlings increases 9-11% and 6-8%, respectively. Feedlots will attempt to transfer the higher feed cost back to the cow-calf producer in the form of lower bids for feeder cattle. Lastly, the \$74-96 increase in calf feed cost is approximately 12-16% of the average purchase value of feeder calves during the 2001-06 period.

Table 1.

Iowa State University Estimated Livestock Returns, Estimated Cost of Production Using 2007 Production Assumptions and Selected Corn and SBM Price Scenarios

	2001-06 average	January 2007	Wisner '07-08 forecast	CARD Ethanol forecast	1996 average
Corn price \$/bu	2.05	3.15	3.60	4.00	3.54
SBM price \$/ton	189.44	190.40	195.00	160.00	247.02
Farrow to finish					
Feed cost \$/hd	49	63	69	72	71
Non feed cost \$/hd	48	48	49	49	49
Total cost \$/hd	98	112	117	120	120
Total cost \$/cwt	36.13	41.31	43.51	44.59	44.41
Feeder to finish					
Feed cost \$/hd	35	45	49	51	51
Non feed cost \$/hd	79	79	79	79	79
Total cost \$/hd	113	124	128	130	130
Total cost \$/cwt	41.88	45.75	47.39	48.23	48.00
Finishing calves					
Feed cost \$/hd	174	229	251	271	248
Non feed cost \$/hd	748	749	750	750	749
Total cost \$/hd	922	978	1000	1021	997
Total cost \$/cwt	80.16	85.02	86.99	88.75	86.73
Finishing yearlings					
Feed cost \$/hd	154	202	221	238	218
Non feed cost \$/hd	849	845	844	842	844
Total cost \$/hd	1003	1047	1065	1081	1062
Total cost \$/cwt	80.23	83.75	85.18	86.46	84.99

6 yr average and 1996 average price sources. Mid-month Iowa corn price. USDA Agricultural prices Average weekly Soybean meal price in Central Illinois at Decatur, (48% protein), USDA Weekly Grain Report