

Costs, Returns, Production and Financial Efficiency of Niche Pork Production in 2006

By

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Introduction

In recent years the production of niche pork has been expanding in response to growing demand for products with specific attributes, such as pork from animals produced without antibiotics using bedded pens with outdoor access. This growth has occurred, in many situations, from the ground up. Entrepreneurial producers have identified unmet market demands and opportunities for new products. These producers then set out to develop products to satisfy this demand and systems to get these niche products to the consumer.

However, little information is known about the costs, returns and production and financial performance of niche pork production systems. As demand expands for niche pork, accurate information on these topics needs to be available for producers to evaluate opportunities in niche pork production. Additionally, niche pork producers do not have sufficient information to benchmark their own operations and evaluate how they are performing and where they can look for improvements. For those thinking about entering niche pork production, information needed to develop expected production levels, costs, and potential returns is limited.

Given the lack of information, a project was undertaken to obtain production, cost, and return information for niche pork production. This information is needed to assist niche pork producers in determining their production potential and assist them in improving their production efficiencies. In turn, this will improve niche pork production and lead to increased returns and improved survivability of niche pork producers.

To obtain niche pork production cost and efficiency information, a focus was placed on working with niche pork producers in establishing production and financial record systems for their pork production operations. Project staff included several Iowa Farm Business Association consultants, a farm management specialist in Minnesota, and area extension swine specialists in Iowa and Nebraska. These staff worked with participants to establish and maintain the record system in 2006. They also worked with producers in providing year end summaries and analysis. The specialists' direct contact provided uniformity to data recording and analysis.

This report provides a summary of the costs, returns, and production and financial performance for participating niche pork producers for the year 2006. There were 41 niche pork farrow-to-finish producers who completed records for 2006. Five of these were certified organic producers, four were purebred Berkshire producers, and 32 were 'natural' producers, meaning their pigs were raised without antibiotics using bedded pens with outdoor access. An initial evaluation of the data showed that the average production efficiencies were similar between the organic, purebred Berkshire and other operations. Thus, all are combined for this analysis.

For the analysis, information such as corn price, interest on capital, and pig inventory was standardized between cooperators. The corn price utilized was \$2.19 per bushel. This represents the monthly average Iowa corn prices for the year 2006. It is recognized that the corn price increased dramatically during the last quarter of 2006, but these increases are reflected for the respective months in determining the average annual price. The value for other grains and

supplement was included at the values provided by the producers with the assistance of the extension specialists. The inventory values for breeding livestock was placed at \$150 per animal and remained the same for the beginning and ending inventory. Nursery pig inventory values were placed at \$40.00 per head for a 25 pound pig, and finisher pig inventory values were placed at \$50 per hundred pounds, with these values the same for the beginning and ending inventory. Interest on operating capital and fixed capital was calculated at 5 percent. Labor value was standardized at \$15.00 per hour.

The level of fixed capital varied dramatically between producers, with some values appearing to be exceeding high. As a result we looked at the capital cost for pasture pig production as provided in the Iowa Swine Enterprise budgets for 2006 and used one-half of the new pasture pig production building and equipment value as the comparison value. That capital cost value was \$43.97 per pig. This was established as the capital cost level for those operations where capital cost per pig exceeded that level. Thus, farms with higher capital cost levels had these values reduced to this level for the record analysis.

Results and Discussion

Returns

Returns from producing niche pork are provided in Table 1. Averages are included for all 41 producers. These producers were also sorted based on return to capital, unpaid labor and management per hundred pounds of pork produced, and averages are also included for the top 15 producers and the bottom 15 producers as sorted this way.

Table 1. Returns from Producing Niche Pork - 2006			
Sorted by Return to Capital, Unpaid Labor and Management, \$/Cwt			
Item	Average	Top 15 Farms	Bottom 15 Farms
Number of Producers	41	15	15
Hundred Pounds of Pork Produced	2191	1667	3114
Return to Capital, Unpaid Labor and Management per Farm	\$17,740	\$29,875	\$5,886
Return to Capital, Unpaid Labor and Management per Cwt.	\$10.08	\$17.43	\$2.17
Return per Hour for All Hours of Labor and Management	\$13.17	\$22.66	\$3.02
Percent Return on Capital	-1.27	26.69	-24.00
Average Price per Cwt of Cull Breeding Stock Sold	\$31.94	\$30.06	\$32.15
Average Price per Cwt. of Market Hogs Sold	\$49.97	\$50.09	\$49.92
Average Price per Cwt of All Animals Sold	\$48.36	\$49.88	\$47.32
Return per \$100 of Feed Fed	\$186.06	\$213.20	\$159.38
Margin Over All Costs/Cwt. Produced, Including Inventory	-\$0.85	\$4.86	-\$4.37
Margin Over All Costs per Head Sold, Including Inventory	-\$2.36	\$15.15	-\$12.82

The return levels were quite different between the top 15 and bottom 15 herds. On average, the return to capital, unpaid labor and management per hundred pounds of pork produced was \$10.08 for all 41 farms, but \$17.43 for the top 15 herds and was \$2.17 for the bottom 15 herds. The total return to capital, unpaid labor and management for the pork production operation was \$17,740 for the average operation, but almost \$30,000 for the top herds

and slightly below \$6,000 for the bottom herds.

The average return to labor for all farms was \$13.17 per hour, but this number was \$22.66 for the top herds and \$3.02 for the bottom herds. Thus, after all costs were paid the average per hour wage earned by all 41 producers was \$13.17, while the top 15 producers earned \$22.66 per hour and the bottom 15 producers earned \$3.02 per hour. Note that prices received for market hog sales were similar between the groups: \$50.09 for the top group compared to \$49.92 for the bottom group. Thus, prices received for hogs sold by the top and bottom groups had little impact on the differences experienced in their returns.

The margin over all costs, including labor valued at \$15 per hour, averaged \$4.86 per hundred pounds of pork produced for the top group and -\$4.37 for the bottom group, which is a difference of \$9.23 per hundred pounds of pork, or about \$25.00 for a 275 pound hog. For all 41 producers, the margin over all costs, including labor valued at \$15 per hour, was essentially breakeven: -\$0.85 per hundred pounds.

Cost of Production

Data on the cost of producing niche pork are provided in Table 2. The method of categorization is the same as for the return information shown in Table 1.

Table 2. Cost of Producing Niche Pork - 2006			
Sorted by Return to Capital, Unpaid Labor and Management, \$/Cwt			
Item	Average	Top 15 Farms	Bottom 15 Farms
Number of Producers	41	15	15
Hundred Pounds of Pork Produced	2191	1667	3114
Operating Costs per Cwt. Produced			
Feed Cost	\$26.28	\$23.59	\$28.08
Other Operating Cost (except labor)	\$9.51	\$6.75	\$13.01
A. Utilities and Fuel	\$2.26	\$1.58	\$3.03
B. Injectables, Vaccines, etc.	\$1.08	\$0.73	\$1.32
C. Maintenance, Repairs & Supplies	\$1.69	\$1.14	\$2.34
D. Misc. Machine Hire/Trucking	\$1.07	\$0.78	\$1.38
E. Capital Charge on Operating Costs	\$0.91	\$0.75	\$1.10
Total Operating Costs Per Cwt.	\$35.79	\$30.34	\$41.09
Fixed Costs per Cwt. Produced			
Depreciation, Taxes & Ins.	\$2.96	\$2.64	\$3.36
A. Equipment Depreciation	\$1.15	\$1.10	\$1.16
B. Housing Depreciation	\$1.28	\$1.23	\$1.46
C. Property Insurance & Taxes	\$0.50	\$0.33	\$0.65
Capital Charge on Fixed Investment	\$0.58	\$0.48	\$0.71
Total Fixed Costs Per Cwt. Produced	\$3.54	\$3.12	\$4.07
Cost of Labor (All) Per Cwt. Produced	\$12.72	\$12.59	\$12.06
Total Cost per Cwt. Produced	\$52.05	\$46.05	\$57.22
Price/Cwt of Purchased Supplement	\$13.34	\$11.48	\$15.06

Table 2 shows that the average total cost per hundred pounds of pork produced was \$52.05 for all 41 farms. The average total operating cost (excluding labor) for all 41 farms was \$35.79 per hundred pounds of live hog, with feed costs making \$26.28 of this total and other operating costs (excluding labor) making up the remaining \$9.51. Average fixed costs were \$3.54 per hundred pounds, and average labor costs were \$12.72. These numbers translate into total costs of about \$140.00 per market hog produced.

Table 2 also shows that the top 15 producers had average total costs of \$46.05 per hundred pounds produced, while the bottom group averaged \$57.22, which is a difference of \$11.17, or about \$30.00 per hog produced. Average feed costs for the top producers were \$4.49 per hundred pounds below the average for the bottom group (\$23.59 vs \$28.08), and other operating costs (excluding labor) for the top group were about half the total for the bottom group (\$6.75 vs \$13.01). Fixed costs for top producers averaged \$3.12 per hundred pounds of pork produced, while this number for the bottom producers was \$4.07. Interestingly, labor costs were lower for the bottom producers as compared to the top producers (\$12.06 vs \$12.59). However, this difference was not large. The bottom producers also purchased supplement at higher costs: \$15.06 per hundred pounds purchased for the bottom group compared to \$11.48 for the top group.

Cost Differences

Table 3 compares cost differences between the top and bottom producers. These data show that 96 percent of total cost differences are in operating costs, which included feed and other operating expenses, but not labor. Note also that differences in feed costs represented about 40 percent of the cost difference between the top and bottom producers, while the differences in other operating costs (excluding labor) represented 56 percent of the cost differences. Thus, while operating costs other than feed and labor made up only about one fifth of the total production costs, they contributed more than half of the cost differences between the top and bottom producers. Thus, close attention to controlling other operating costs appears to be important in niche pork production. Close attention to controlling feed costs is also important as it represented 40 percent of the cost difference.

Table 3. Comparison of Niche Pork Production Costs Between Top and Bottom Producers				
	Group			Percent of Difference
Item	Top 15	Bottom 15	Difference	
Operating Costs (feed and other)	\$30.34	\$41.09	+\$10.75	+96.2%
Fixed Costs	\$3.12	\$4.07	+\$0.95	+8.5%
Labor Costs	\$12.59	\$12.06	-\$0.53	-4.7%
Total Costs	\$46.05	\$57.22	+\$11.17	100.0%
Feed Costs	\$23.60	\$28.08	+\$4.50	40.2%
Other Operating Costs	\$6.75	\$13.01	+\$6.26	56.0%

These cost difference results for niche pork production are different than what is seen for

the more traditional confinement commodity pork producers. While feed costs are important for both system types, for commodity producers the fixed costs of facilities are relatively more important, which in turn means that facility use, or adequate “through-put” of hogs, is very important for these producers. The lower relative significance for fixed costs for niche pork producers is perhaps not surprising. Many niche producers in the record system had low investment in production facilities. Thus, the need to get pork out the door to keep fixed cost under control was not as pressing.

Production Efficiency – Feed and Labor

Production efficiency for feed and labor is provided in Table 4. The average number of breeding females was 91 for all 41 farms, while the average for the top 15 herds was 58 and the average for the bottom 15 was 130. Several explanations for the differences in herd size are possible. One is an observation made by project staff that the larger farms tended to farrow more continuously, which in turn can lead to herd health issues that can negatively impact production. Another possible explanation is that niche pork farms tend to have multiple enterprises, including crops and livestock, and there may be a shortage of labor to properly manage all enterprises on farms with more breeding females. This explanation appears to be supported by the labor use data in Table 4, which show that total labor used per breeding female per year was almost five hours more for the top group than the bottom group (24.6 hours vs. 19.8 hours). There may be other possible explanations for the differences in breeding herd sizes, but additional information is needed to better understand why these differences occurred. Plans are in place to collect this additional information.

Table 4. Feed and Labor Production Information of Niche Pork Production - 2006			
Sorted by Return to Capital, Unpaid Labor and Management			
	Group		
Item	Average	Top Farms	Bottom Farms
Number of Producers	41	15	15
Hundred Pounds of Pork Produced	2191	1667	3114
Average Female Inventory	91	58	130
Number of Market Hogs Sold	682	462	1076
Average Market Hog Weight, Lb.	273	275	269
Pounds of Feed Per Cwt. Produced	413	374	425
Pounds of Grain Per Cwt. Produced	331	303	335
Pounds of Supplement Per Cwt. Produced	79	69	93
Hours of Labor Used Per Cwt. Produced	0.87	0.87	0.83
Hours of Labor Used Per Breeding Female Per Year	21.4	24.6	19.8

Table 4 shows that total feed used per hundred pounds of pork produced averaged 413 for all producers, but 374 pounds for the top 15 herds and 425 for the bottom 15 herds. Thus, the top herds averaged 51 pounds less feed per hundred pounds of pork produced compared to the bottom herds. The pounds of supplement used per hundred pounds produced ranged from 69 for the top group to 93 for the bottom group, or a difference of 24 pounds. These data suggest that there is ample room for improvement in managing feed and supplement usage.

Labor use provided some interesting comparisons. Total labor use per breeding female per year was the highest for the top group (24.6 hours) and the lowest for the bottom group (19.8 hours). However, given the increased production efficiency of the top group, the average labor use per hundred pounds of pork produced was very similar between these groups: .87 hours per hundred pounds for the top farms and .83 hours per hundred pounds for the bottom farms.

Pig Production Efficiency

Additional production efficiency information is provided in Table 5. Birth to weaning death loss averaged 26.4 percent of pigs born alive for all producers, and 25 percent for the top group and 27.9 percent for the bottom group. Thus, about one of every four pigs that were born alive did not make it to weaning. Note: a 2004 survey conducted as part of another project found that 61% of niche pork farmers said crushing was the top reason for death loss of pigs before weaning. Other top reasons were poor milking sows and scours in young pigs. It appears that addressing these causes of pig death losses in the farrowing phase is one key for improving the performance of these systems.

Table 5. Pig Production Efficiency of Niche Pork Production - 2006			
Sorted by Return to Capital, Unpaid Labor and Management			
Item	Group		
	Average	Top Farms	Bottom Farms
Number of Producers	41	15	15
Pig Death Loss, Birth to Weaning (% of Farrowed Live)	26.4	25.0	27.9
Pig Death Loss, Weaning to Market (% weaned)	7.9	5.8	11.5
Breeding Herd Death Loss (% of Breeding Herd Maintained)	5.6	4.8	4.1
Total Herd Death Loss (% of Pounds of Pork Produced)	3.7	2.6	4.3
Pounds of Pork Produced per Female Per Year	2575	2989	2449
Number of Females per Boar	17	15	18
Number of Pigs Weaned Per Litter	6.7	7.2	6.2
Number of Litters Weaned Per Female Per Year	1.50	1.62	1.51
Pigs per Sow Per Year	10.1	11.8	9.4
Litters Weaned Per Farrow Pen Per Year	5.3	4.9	5.7
Pigs Weaned Per Farrow Pen Per Year	34	34	35

Pig death loss from weaning to market for the bottom group was about double compared to the top group (11.5% vs 5.8%). Breeding herd death loss was in the 4 to 6 percent range: 5.6 percent for all herds, and 4.8 percent for the top herds and 4.1 percent for the bottom herds. Note that the reason the top and bottom herds had lower breeding herd death losses than all farms was a data anomaly, meaning that among the other 11 herds there were farms with high death losses. The top herds on average weaned one more pig per litter (7.2) than the bottom herds (6.2). On average the number of litters weaned per breeding female per year was 1.5, with this number being 1.62 for the top operations and 1.51 for the bottom operations. Also, the top herds averaged 11.8 pigs per sow per year while the bottom herds averaged 9.4 pigs per sow per year, which is a difference of 2.4 pigs, or about 25 percent. One explanation for the low pigs per sow

per year numbers is that baby pigs in these systems are typically weaned at six weeks of age, and so sows are not able to be bred back as quickly.

Summary and Conclusion

Information is provided on the return, cost and pig production efficiency for niche pork production. Information from 41 niche pork producers is included in the analysis. Return levels showed that the average return to capital, unpaid labor and management return to capital, unpaid labor and management for the top 15 producers was \$17.43 per hundred pounds of pork produced, while this average was \$2.17 for the bottom 15 producers and \$10.08 for all 41 producers. The average margin over all costs on a per head sold basis was slightly below breakeven (-\$2.36) for all 41 producers. The average return per hour of labor after all costs was \$13.17 for all 41 producers, but \$22.66 per hour for the top 15 producers and \$3.02 for the bottom 15 producers.

The average total cost per hundred pounds of pork produced for all producers was \$52.05, while the top 15 third had average total costs that were \$11.17 less than the bottom 15 producers (\$46.05 vs \$57.22). The main contributor to cost differences between the top third and bottom third producers was operating costs, which included feed and other operating expenses but not labor. These costs represented 96 percent of the total cost difference, with 56 percent of this difference being in other operating costs and 40 percent in feed costs.

The average female breeding herd size was 91 females. The average feed efficiency was 4.31 pounds of feed per pound of production, although the average for the top 15 herds was 3.74 and the average for the bottom 15 herds was 4.25. Average labor use was .87 hours per hundred pounds of pork produced. About one of every four pigs born alive died before weaning. Another eight percent died from weaning to market. Breeding herd death loss was in the 4 to 6 percent range.

The information summarized here shows striking differences in many areas between the top 15 and bottom 15 producers. The areas with the largest differences are places with the most potential to help producers improve. Educational programming that targets these areas is being developed to help these producers make changes to improve their operations, which in turn will improve the position of this sector of the industry.