

## Cost of Organic Pork Production

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#### Introduction

Niche markets in the pork industry are still relatively small but are growing in importance. An example of a niche market is the organic pork market, a relatively new and expanding segment of the industry. Market opportunities are expanding as specific consumer preferences are better identified.

One issue, which frequently surfaces in the organic pork production industry is the relatively limited information on production costs. It is well known that cost of organic pork production is greater than traditional port production due to increased feed costs and decreased swine performance. The industry has dealt with these differences by paying premiums to producers who produce the product.

The objective of this report is to determine the cost of organic pork production. This report addresses the issue by examining the increase of costs involved in expanding a seasonal (summer only farrowing) organic pork production system to continuous production of organic hogs. Both a seasonal and a continuous system of production are used to

provide a basis to determine cost differences between the two types of production systems. It is also necessary to examine the production cost differences between summer and winter for the continuous system.

#### Materials and Methods

Projected costs for two organic pork production systems are provided: a seasonal system and a continuous production system. The seasonal system has spring and summer only farrowing. Farrowing occurs in April, June/July, and September. One group is farrowed in April and again in September/October, whereas another group is farrowed in June/July. The April and September farrowing are sows retained from the June/July gilt farrowings of the previous year. With continuous farrowing, there are six groups of females farrowed twice per year. Farrowing occurs every month. The seasonal system has two groups of 80 females, whereas the continuous system has six groups of 27 females each. Facility and breeding herd investment levels are determined for each system.

Information in Table 1 shows the investment level for the two organic pork production systems analyzed. Gilt prices were \$175, whereas boars were \$750.00. When breeding herd investment is adjusted for sow and boar cull values the net annual investment is \$19,681 for the seasonal organic system and \$16,970 for the continuous system.

**Table 1. Facility, equipment, and breeding herd investment for organic pork production.**

	Seasonal System		Continuous System	
	Total (\$)	Annual (\$)	Total (\$)	Annual (\$)
Faculty and Equipment	273,150	48,622	287,012	51,340
Breeding Herd		39,894		30,708
Breeding Herd-Net <sup>a</sup>		19,681		16,970

<sup>a</sup>These values represent adjustment for cull sow and boar sales.

Ration costs per pound are as follows: 10.9 cents for the nursery, 9.3 cents for the grower, 8.0 cents for the finishing, 8.8 cents for lactation, and 7.3 cents for gestation. Winter feeding uses 10% more feed to produce a pound of gain. These relationships are what has been shown over time at the Iowa State University Rhodes Research/Demonstration Farm on seasonal pork production. The overall feed efficiency used for the seasonal system is 3.89 lbs. of feed per pound of gain. It is 4.00 for the continuous system.

#### Results and Discussion

Information from Table 2 summarizes organic pork production costs for the seasonal production system and the continuous production system. Costs from the traditional seasonal outdoor farrowing system were adjusted to reflect the differences between winter and summer farrowing as well as organic production. Costs from an organic budget previously prepared by Becker, Kliebenstein, and Honeyman were adjusted for additional costs for winter-farrowed organic hogs such as iron and a decrease in pigs farrowed and

marketed. Bedding use was taken, in part, from current research on hoop buildings at the Iowa State University Rhodes Research Farm with bedding costs added for farrowing and increased for winter farrowed groups. Annual repairs were set at 10% of the initial facility price. Record keeping was set at \$5,000/year for each system due to the requirements for maintaining records for organic audits as well as a mandatory 1% charge on sales revenue for hogs sold organically. Labor was placed at \$10.00/ hour and was set at 13 hours/litter for the continuous system (12 in the summer and 14 in the winter) and 10 hours/litter for the

seasonal system. This difference is due to increased cleaning required for the floored insulated sheds, smaller batch sizes of feed prepared, increased snow removal, and additional winter farrowing care.

The cost of production per hundred pounds was \$63.88 for pigs from the continuous system compared with \$59.45 for the seasonal system, a difference of \$4.43 per hundred pounds or \$11.09 per market pig.

**Table 2. Organic pork production costs for seasonal and continuous production. Total Cost Comparison**

Continuous Farrowing			Seasonal (Summer Farrowing)			
Variable costs	Total costs	Per Head	Variable costs	Total costs	Per Head	Differences
Feed	\$179,490	\$86.97	Feed	\$175,872	\$83.71	\$3.26
Health costs	1,032	0.50	Health costs	735	0.35	0.15
Bedding	10,319	5.00	Bedding	8,929	4.25	0.75
Repairs	3,842	1.86	Repairs	3,633	1.73	0.13
Record keeping	5,000	2.42	Record keeping	5,000	2.38	0.04
Fuel/Utilities	4,128	2.00	Fuel/Utilities	3,152	1.50	0.50
Subtotal	\$203,812	\$98.75	Subtotal	\$197,322	\$93.92	\$4.84
Interest	10,191	4.94	Interest	9,866	4.70	0.24
Labor	42,120	20.41	Labor	31,500	14.99	5.42
Breeding herd	16,970	8.22	Breeding herd	19,681	9.37	(1.14)
Trucking	5,160	2.50	Trucking	5,253	2.50	0.00
<b>Total variable</b>	<b>\$278,252</b>	<b>\$134.82</b>	<b>Total variable</b>	<b>\$263,621</b>	<b>\$125.47</b>	<b>\$9.35</b>
<b>Fixed costs</b>	<b>\$51,340</b>	<b>\$24.88</b>	<b>Fixed costs</b>	<b>\$48,622</b>	<b>\$23.14</b>	<b>\$1.73</b>
<b>Total</b>	<b>\$329,592</b>	<b>\$159.70</b>	<b>Total</b>	<b>\$312,244</b>	<b>\$148.61</b>	<b>\$11.08</b>
Total hogs sold	2,064		Total hogs sold	2,101		
Total weight sold	515,970		Total weight sold	525,263		
Production cost/cwt	<b>\$63.88</b>		Production cost/cwt	<b>\$59.45</b>		
Total production cost difference per hundred pounds			<b>\$4.43</b>			

It is also necessary to compare production costs between the winter and summer seasons for the continuous production system. Table 3 provides a total cost comparison of the winter farrowed (October-March) and the summer farrowed hogs (May to September) within the continuous system. The largest difference between systems is the labor costs with a \$5.07 per head difference. The facilities, which differ by an impermeable pad provided for winter farrowing is the second largest cost difference at \$4.87/pig due largely to the fact that there is a 0.3 difference in pigs finished per litter.

Winter farrowed pigs have also \$0.89 more in feed costs than the summer-farrowed pigs. This result may, at first, appear as low but the winter-farrowed pigs are in the grow finish phase during the spring and summer months. The break-even production costs per hundred pounds was \$66.92 for the winter-farrowed pigs compared with \$61.11 for the summer-farrowed pigs, a difference of \$5.81 per hundred pounds or \$14.52/ pig.

**Table 3. Organic pork production costs for continuous production winter versus summer.**

Winter			Summer			
Variable costs	Total	Per Head	Variable costs	Total	Per Head	Difference
Feed	\$85,977	\$87.43	Feed	\$93,513	\$86.54	\$0.89
Health costs	671	0.68	Health costs	361	0.33	0.35
Bedding	5,418	5.51	Bedding	4,902	4.54	0.97
Repairs	1,921	1.95	Repairs	1,921	1.78	0.18
Record keeping	2,500	2.54	Record keeping	2,500	2.31	0.23
Fuel/Utilities	2,476.66	2.52	Fuel/Utilities	1,651.10	1.53	0.99
Subtotal	\$98,963	\$100.64	Subtotal	\$104,840	\$97.03	\$3.61
Interest	4,948	5.03	Interest	5,242	4.85	0.18
Labor	22,680	23.06	Labor	19,440	17.99	5.07
Breeding herd	8,485	8.63	Breeding herd	8,485	7.85	0.78
Trucking	2,458	2.50	Trucking	2,701	2.50	0.00
<b>Total variable</b>	<b>\$137,535</b>	<b>\$139.86</b>	<b>Total Variable</b>	<b>\$140,718</b>	<b>\$130.23</b>	<b>\$9.64</b>
<b>Fixed costs</b>	<b>\$26,970</b>	<b>\$27.43</b>	<b>Fixed costs</b>	<b>\$24,370</b>	<b>\$22.55</b>	<b>\$4.87</b>
<b>Total</b>	<b>\$164,505</b>	<b>\$167.29</b>	<b>Total</b>	<b>\$165,088</b>	<b>\$152.78</b>	<b>\$14.51</b>
Total hogs sold	983		Total hogs sold	1,081		
Total weight sold	245,835		Total weight sold	270,135		
Production cost/cwt	<b>\$66.92</b>		Production cost/cwt	<b>\$61.11</b>		

Total production cost difference per hundred pounds **\$5.81**

Table 4 provides a summary of the production costs (break-even prices) of the two systems as well as the break-even values for the summer- and winter-farrowed pigs within the continuous production system. The lowest cost is with the seasonal system or summer only farrowing. The highest cost occurs for the winter-farrowed group.

**Table 4. Organic pork production cost (\$) by system and season**

System or Season	Per Pig	Per CWT
Seasonal	148.61	59.45
Continuous	159.70	63.88
Winter continuous	167.29	66.92
Summer continuous	152.78	61.11

#### Summary and Implications

This report has shown that it costs more to produce organic pork than conventional pork. This result has been documented and supported by previous studies as organic feed ingredient costs per unit are higher and feed efficiency for organic pork production is not as good. This study also provides a seasonal comparison of organic pork production costs. Cost increases incurred by producers in moving from a seasonal (summer only) farrowing system to a continuous farrowing organic production system can be significant. Incentives are needed to encourage producers to shift to continuous production practices that provide a more uniform supply of fresh pork. Cash flow difficulties can be created if

premiums do not reflect seasonal differences in production costs.

One of the key questions involved in the relevance of the production cost projections is the scale of production used. The production system that was developed is larger than many of the organic operations that are currently in use. However, the information is on a per pig comparison. Cost of production values can be adjusted to fit alternative sizes of production systems. For example, the system can be reduced to half of the current size with very little added per pig cost by reducing the size of the groups of sows that are being farrowed by 50 percent in the continuous system and by reducing sow numbers in the seasonal system. These adjustments would not have a significant impact on the difference on costs. The facilities are not capital intensive and there are not significant economies of size for building construction. Facility costs represent approximately 15-16 percent of production costs.

Organic pork production cost per hundred pounds was projected to be \$59.45 for the seasonal system. This cost compared with \$63.88 per hundred pounds for the continuous system. The seasonal system had a cost advantage of \$4.43 per hundred pounds. When comparing organic pork production costs by season of the year in the continuous system, cost for winter farrowing was \$5.80 per hundred pounds over summer farrowing. Production costs for winter farrowing was \$66.92 compared with \$61.11 for summer farrowing in the continuous system. This result clearly points out that production costs differ by production system and seasons of the year.

