

# Large Group Auto-sort Systems

FOR MANAGING, GROWING, AND FINISHING PIGS

20282 State Highway K, Gallatin, Missouri 64640, USA • Cell: 660 605 2913 • hankwurtz@gmail.com • Hank Wurtz, GM

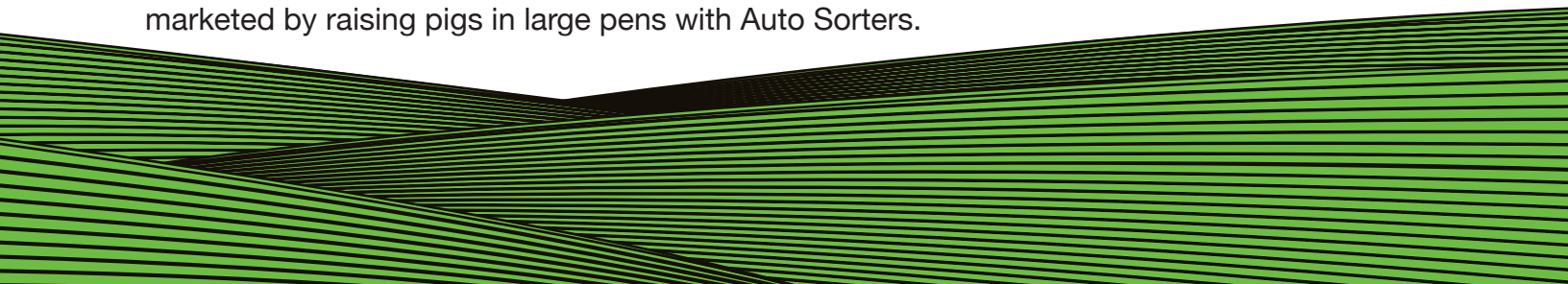
Today, feed, facility, and equipment costs are very high. These high prices are causing every producer to scrutinize every aspect of production costs.

In addition the consumer is demanding consistent sized quality meat cuts - a cut that is of a consistent color, pH, marbling and taste . The consumer also cares that the product they buy comes from animals that have been raised in a friendly environment.

Today, producers are also facing a shortage of skilled knowledgeable labor, and the laborers require a better environment in which to work , Additionally, a world of new technology has entered the pork production industry, including electronic controllers, sensors, computer chips and computers to monitor and control ventilation, alert systems, power consumption, water and feed consumption, manure levels, and marketing dates.

The producers that will remain in the Pork Production will learn to understand and adapt the latest technology and use real time data and reports to produce pork more efficiently.

In December 2005 a group of Swine Producers, from 5 different countries and several scientists met in Le Mars, Iowa to evaluate and discuss raising pork in large pens utilizing Auto Sorters. The producers learned that there is an economic improvement potential of 16 US dollars per pig marketed by raising pigs in large pens with Auto Sorters.



# Economic Improvement Potential For Large Pen Auto-sort System

**Table 1**

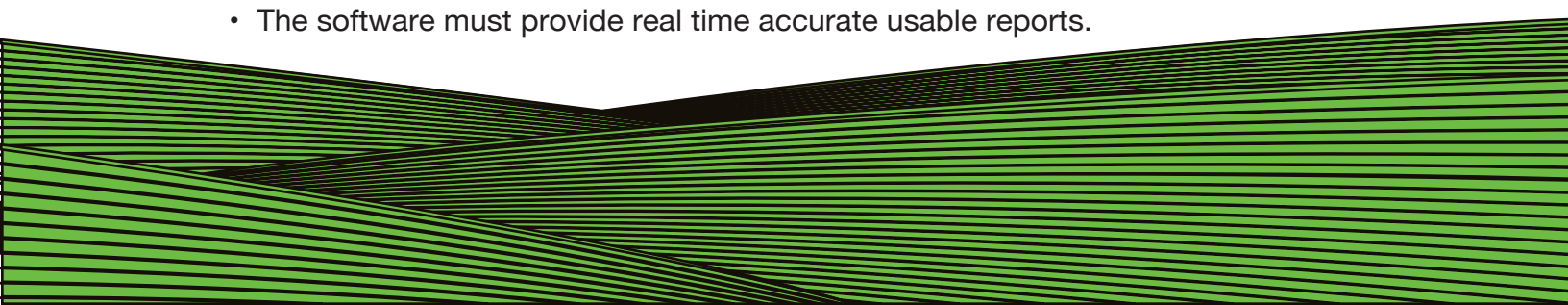
Sort Loss Improvement (Packer Grid)	5.50
Reduced DOA's and DIP's and Downers	.40
Reduced Labor for Loading	.25
Improved Meat Quality	
Stress Impact	.25
Color	.50
Additional Space Benefit	.60
(Daily Gain, Feed Efficiency, Culls, Mortality)	
Targeted Feeding Program	1.30
Feed Withdrawal -12 hours	.20
Targeted Paylean Feeding Program	3.00
Use of Wet/Dry Feeder	3.50
Minimization of Number Feed Events	.44
Labor Savings for Cleaning	.10
Human Safety and Injury	.05
Reduced Environmental Pollution due to decrease phosphorus and protein excretion?	

**TOTAL BENEFIT PER PIG**

**\$16.09**

Since December 2005, these producers and others have learned the following about raising pigs in large pens with auto sorters.

- Large pen auto sort is NOT for every producer
- Planning is a must
- The system must be designed for pig flow and people
- Training of pigs and people is a must -there is a learning period
- Change of management procedures is required
- Surge protection for the electronics and the communication system is a must
- Direct communication with AutoSort System is highly advantageous
- Requires a commitment of the producer, employees managing the barns, distributor, and the manufacturer
- The sorter structure and one way gates must be durable and pig and people friendly
- After installation, service and support are a must
- The software must provide real time accurate usable reports.



In the last 10 years many US swine producers have removed their auto sorters for a variety of reasons -10 to 15% decreased gains, pigs dying in food and water courts, poorly designed building and food court layouts and failure to change management procedures.

The number one question being asked since the introduction of the Large Pen Auto Sort is will pigs gain and convert feed to pork as efficiently as pigs raised in small pens of 25 to 30 animals. Blue Marsh Hog Farm of Plum Coulee, Manitoba conducted a test comparing performance of pigs raised in small pens with pigs raised in large pens with auto sorters. Table 2 provides a summary of their findings.

**Table 2**

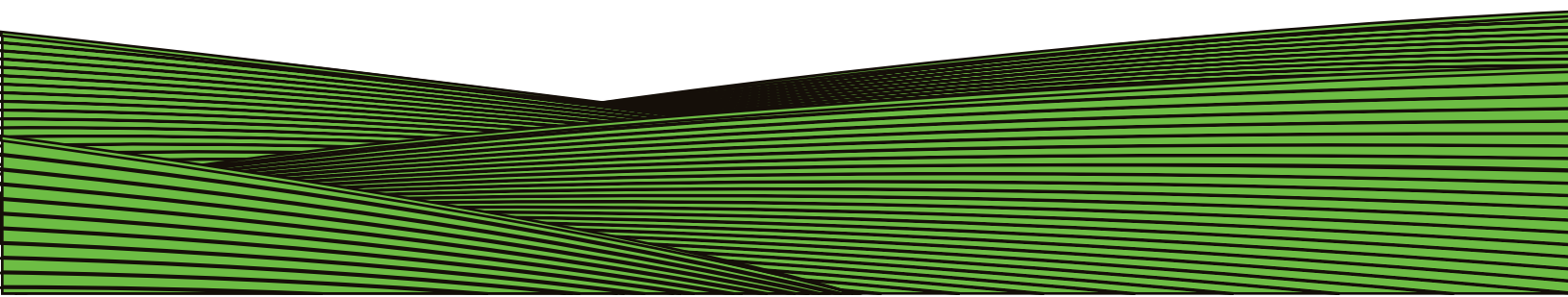
Comparison

Blue Marsh Hog Farm, Plum Coulee, Manitoba  
Large Pen Auto-sort vs. Small Pen (20 pigs/pen)

	LPAS	SP
Number of Pigs	552	574
Average Daily Gain, lb.	2.33	2.16
Feed Conversion	2.59	2.64
Man Hours for Marketing	2.7	32
Labor Cost for Marketing, Per Pig	10¢	\$1.22

Blue Marsh Farms found that pigs raised in large pens with auto sort do gain and convert feed to gain as well as pigs raised in small pens. In addition the labor cost for sorting was significantly reduced. A South Dakota producer conducted a similar test. Their findings may be found in Table 3.

**Table 3 (see next page)**



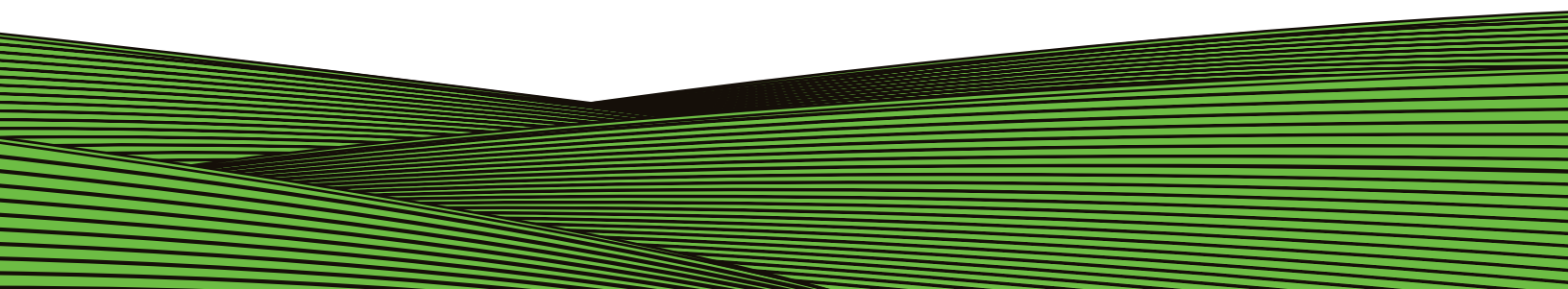
**Table 3**Auto-sort System Production Numbers  
South Dakota Producer Sorter Barn Comparison

	Sort System	Small Pens	Sort System Advantage	
Number pigs started	673	623		
Mortality, %	1.63	.96	-.67	
Average daily gain, lb.	1.91	2.00	-.09	
Feed per gain	2.69	2.87	.18	
Feed cost/pig, \$	51.59	53.75	2.16	
Production expense/head,\$	37.50	38.81	1.31	
Carcass Premium/head,\$	8.87	3.4	5.44	
<b>Total</b>				<b>\$8.91</b>

The South Dakota producer had a 0.09 Kg less daily gain but had 0.18 percent better feed conversion and \$5.44 per head better carcass premium. Production cost was \$1.31 less. The South Dakota producer realized \$8.91 advantage per pig marketed from the use of the large pen auto sort system.

Since December 2005 there have been several Manitoba swine producers that have installed auto sorters. The performance from a few of these producers and one South Dakota producer are shown in Table 4. The performance data represents a cross section of genetics, feeding programs, health, and management.

**Table 4 (see next page)**



**Table 4****Summary of Auto Sort Producer Data**

Producer	Turns	No. Groups	Pigs/Group	Av. St. Wt. lb.	Av. End Wt. lb.	Av. Gain, lb.	Av No Days.	Av, daily Gain
Cool Spring	8	8	267	132	220	88	42.5	2.07
Blumengart	2	15	517	119	211	92	45	2.04
Rock Lake	3	29	587	73	271	198	88	2.25
Windy Bay	2	8	400	141	227	86	45	1.91
Overskei	2	8	542	13	264	151	147	1.71
Overskei	2	8	528	141	240	99	45.5	2.18
<b>Totals:</b>	<b>19</b>	<b>73</b>	<b>37,123</b>	<b>103</b>	<b>240</b>	<b>137</b>	<b>68.8</b>	<b>2.09*</b>

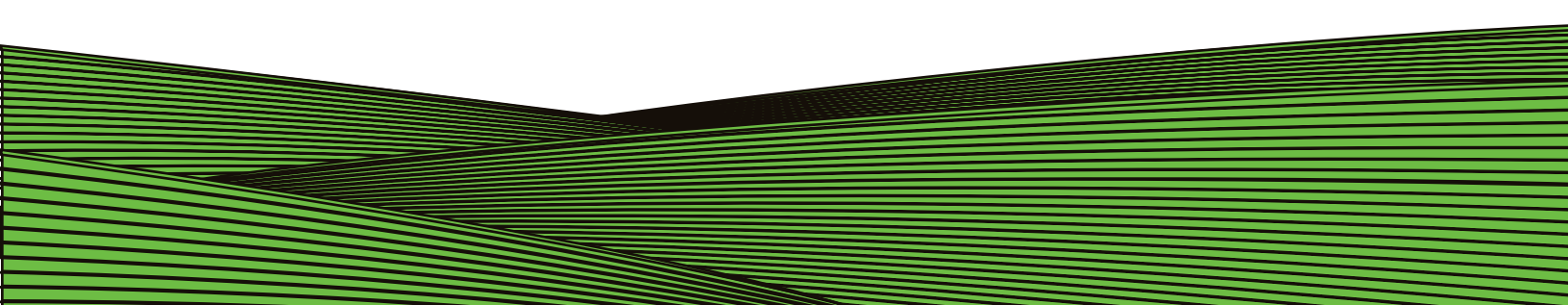
\*Weighted Average

Most producers if not all report improved carcass weight uniformity and desired packer carcass weight with the installation and use of auto sorters. Table 5 and 6

Table 5

Manitoba Pork Marketing Co-op  
Colony Members Top 10 List  
September 2007

<b>Carcass Weight (Average 95)</b>	<b>Before Auto-sort</b>	<b>Sept. '07</b>	<b>Dec. '07</b>
Windy Bay Colony Farms	<10	1	3
Rock Lake Colony	<10	2	6
Blue Marsh 93 LTD		6	-
<b>% in Core Area of Grid</b>			
Windy Bay Colony Farms	<10	5	2
Rock Lake Colony	<10	4	8
Blue Marsh 93 LTD		1	-

**Table 6 (see next page)**

**Table 6**

**Effect of Auto-sort on Carcass Market Value**

Manitoba Pork Marketing Co-op, Inc  
January 2008

Producer	Auto-sort	No. Pigs	Avg. Lb.	Avg. Index	% in Core	Avg. Revenue Per Hog.
A	No	21,370	204	110.1	86.9	\$129.12
B	Yes	18,500	208	109.5	98.7	\$131.04
<b>Difference</b>					<b>11.8</b>	<b>\$1.92</b>

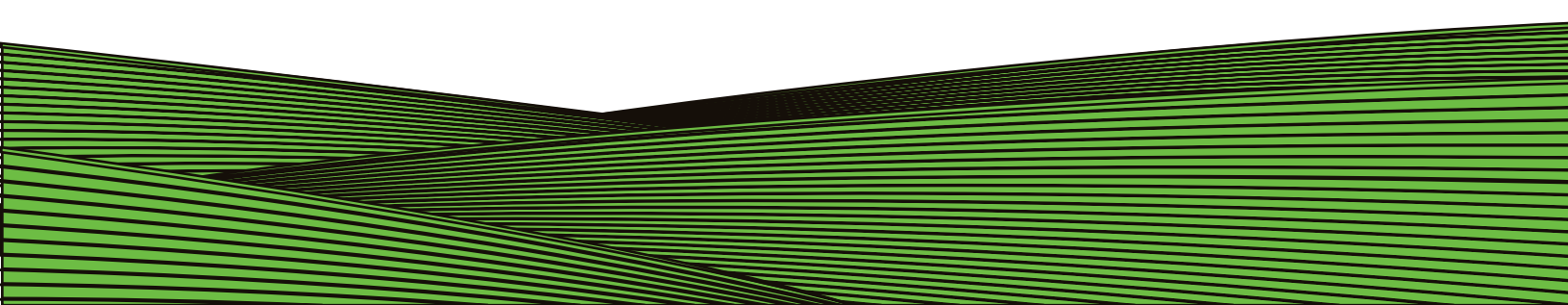
Two Manitoba producers of similar size. Marketing pigs in 2007 at \$56.25/cwt

Hormel, a US packer, reported at the December 2005 meeting in Le Mars, Iowa that pigs marketed by producers with auto sorters have a \$5.70 increased value as compared to producers who do not have auto sorters.

A second question that is frequently asked is how many pigs can be sorted by a given sorter. To answer this question, one must define the type of sorting system that is employed. There are auto sorter systems that are primarily used to sort market pigs. One manufacture advocates 1000 to 1400 pigs per sorter by alternating pens of pigs being sorted.

Two Manitoba producers, Rock Lake and Starlite Colonies have been monitoring the growth performance of pigs housed in different size pens and sorted into three different food courts several times daily. Their findings are shown in Table 7. To date these producers have not found a performance difference in pigs housed in pens of 300 to 600 pigs that are sorted daily.

**Table 7 (see next page)**



**Table 7****Effect of Number of Pigs/Sorter on Daily Gain**

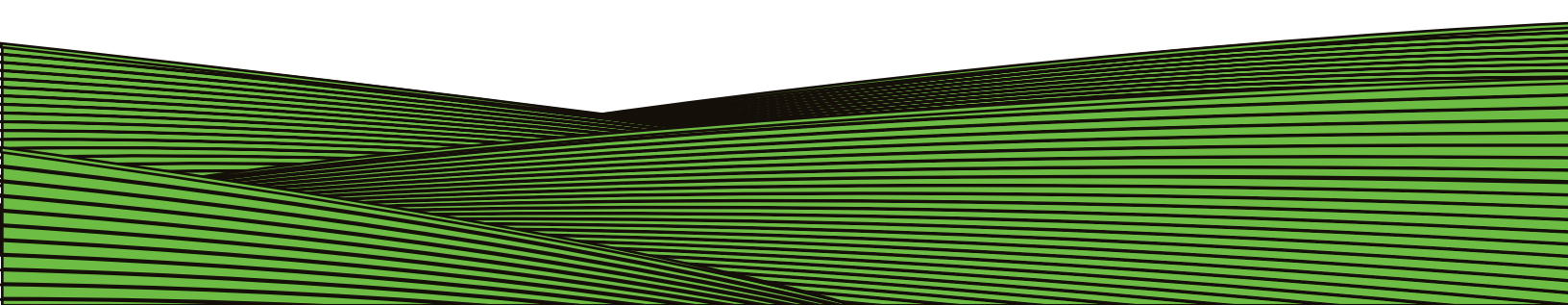
	<b>Group 1</b>	<b>Group 2</b>	<b>Group 3</b>
<b>Starlite Colony 1-Rep</b>			
No. Pigs / Sorter	300	425	536
Average Daily Gain, lb.	2.38	2.20	2.35
<b>Rock Lake Colony 3-Rep</b>			
No. Pigs / Sorter	306	605	
Average Daily Gain, lb.	2.07	2.09	

Food Court design can have an effect on pig gains. A Saskatchewan producer found that pigs increased their number of times passing through a sorter by 3 fold and had 0.35 lb increased average daily gain by changing the design of his food court.

A South Dakota producer found 0.11 lb increased daily gains by revising the design of his food courts.

**Table 8****Effect of Food Court Design**

	<b>Initial Design</b>	<b>Revised Design</b>
<b>Saskatchewan Producer 2006</b>		
No. Hits per day	1.8	6
Average Daily Gain, lb.	1.56	2.13
<b>Saskatchewan Producer 2006</b>		
Average Daily Gain, lb.	1.85	1.96



A Minnesota producer compared two different types of feeders in his auto sort food courts. He found that pigs fed from Crystal Spring wet/dry feeders had a 0.13 lb. per day better gain than pigs fed from tube feeders. Table 9

**Table 9**

**Auto Sort Data**

Minnesota Producer <sup>1</sup>

Feeder Comparison

**February 2007**

<b>Feeder Type</b>	<b>No. Pigs</b>	<b>Start<sup>2</sup> Date</b>	<b>Finish<sup>3</sup> Date</b>	<b>Av. Start Weight Lb.</b>	<b>Av. End Weight Lb.</b>	<b>Av. Gain Lb.</b>	<b>Number Days</b>	<b>ADG Lb.</b>
Tube	553	12/6/06	2/7/07	121	220	99	59	1.67
Crystal Spring	550	12/6/06	2/7/07	114	222	108	59	1.83
Advantage Crystal Spring W/D								.16

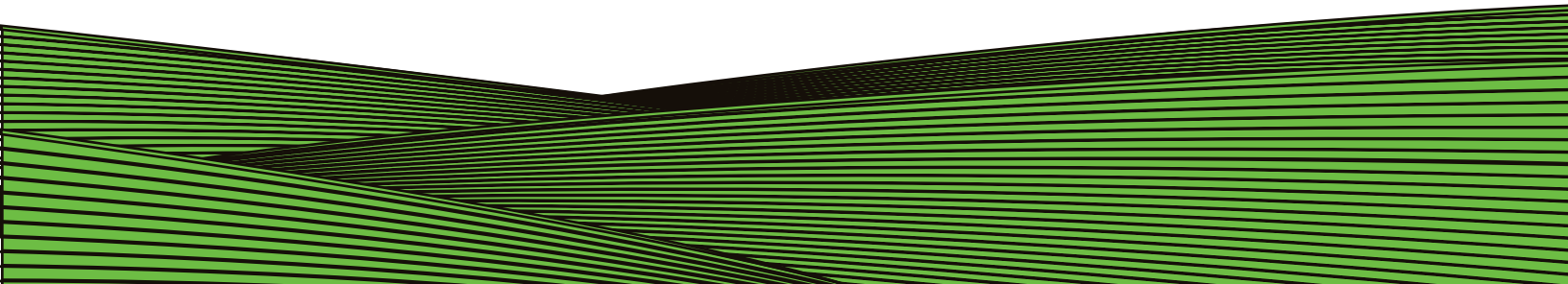
1 Curtain-sided Building. Average health Pigs

2 Start date for sorting

3 Date before first pigs sold

High ingredient prices today are stimulating swine producers to utilize a targeted weight feeding program with their auto sort system. Kansas State University reported a feed savings of \$1.29 per pig marketed by specifically formulating and feeding diets for light and heavy pigs within a group. Using October 2007 ingredient prices the cost differential between diets formulated for light, medium, and heavy pigs with an average weight of 99 pounds was \$33/ton.

Table 10 (see next page)





**Table 10**

**Auto Sort 3 Food Court Feeding Program**

October 2007 Prices

Court	Pig Wt. Lb.	Protien %	Added Fat %	Cost/Ton	Difference
Light	70	19	5	204	\$26
Medium	100	17	2	178	
Heavy	125	16	1	167	\$11

Two pork producers who attended the Le Mars, Iowa meeting were Don and Bert Huftalin from Illinois. Their company has 18 ProSort auto sorters located in Illinois and Iowa.

At the 2006 Prairie Swine Producer Seminar, Don shared their results with the attendees.

Don and Bert's company, Hufco, marketed 2,730 pigs from auto-sort. Per pig, they tallied the following saving benefits.

Reduction of Labor	.25
Reduced sort loss	.98
Improved lean value	2.37
Hormel Red Box Premium	1.00
Total Benefit Per Pig	\$4.60

Since January 1, 2006, Hufco has gained additional knowledge in managing the auto sorter and reaped further benefits. Specifically, they sold 2,050 pigs from one farm and gained an additional \$0.69 per pig due to improved grade and yield; also, they achieved an additional \$1.00 per pig bonus from improved carcass uniformity and packer desired carcass weight. Total bonus per pig sold in 2006 was \$6.29! The Huftalin's found their return on investment in the auto sorters was 1.4 years with the \$6.29 per pig bonus.

In summary, large pen auto sort is a fresh way of utilizing technology with significant benefits. It allows for targeted marketing; it enables producers to optimize facility use; it ensures animal welfare; it permits producers to monitor real time animal performance; and it provides the capability to administer targeted feeding programs.

The auto sorters not only help producers manage their pork production more efficiently, it allows them to directly meet the demands of today's consumers.

