

2006

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Recommended Citation

Kliebenstein, James B.; Hurley, Terrance; Orazem, Peter F.; Miller, Dale; and May, Steve (2006) "A Look at the Employment in the United States Swine Production Industry," *Animal Industry Report*: AS 652, ASL R2168.

Available at: http://lib.dr.iastate.edu/ans_air/vol652/iss1/74

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A Look at the Employment in the United States Swine Production Industry

A.S. Leaflet R2168

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Summary and Implications

A survey of pig producers and employees was conducted to document trends in the industry. These surveys have been conducted four times: 1990, 1995, 2000, and 2005. Trends show that the average age of pig producers is increasing, quite notably the last five years; 2000 to 2005. It increased by 4.1 years over the past five years. Producers are staying in the industry longer and fewer are entering; especially younger producers. Employee trends show the same thing--that the average age is increasing; it increased by 6.6 years from 2000 to 2005. Employees too are staying in the industry longer reflecting less turnover.

Education levels of producers and employees are increasing. This is most notable with employees. About one in ten employees (9%) indicated they have a DVM or Ph.D. The percent with a masters degree or equivalent also increased from 2000 to 2005. An interesting phenomenon with employees is that the percent without a high school diploma is also increasing. This group went from 3.7 percent to 9.3 percent of employees between 2000 and 2005.

Hog farms are becoming increasingly specialized and larger. While the farrow-to-finish system remains the dominant system, its relative importance has decreased dramatically. It has declined from about 8 in 10 producers in 1990 to 4 in 10 producers in 2005. Contract finishers as well as wean-to-finish producers have shown notable growth. The percent of producers producing 25,000 or more pigs annually increased from 3.4 percent in 1995 to 15.7 percent in 2005. About one in twenty producers indicated they produced 100,000 or more pigs annually.

Introduction

The pig production industry is experiencing changes in employment trends. As firms grow the need for employees grows as well. To document some of the changes a survey was conducted in late 2004 (2005 survey) of pig production employers and employees. This is the fourth survey in a 15 year span. The goal of the

survey was to track changes in the employment market for pig production. Results of the 2005 survey are compared to the previous three surveys conducted in five year intervals (2000, 1995 and 1990). This report documents changes in employee and employer age, level of education, type of production operation and operation size.

Materials and Methods

As indicated, this was the fourth survey in a 15 year span. A mail questionnaire was sent to pork producers and employees across the United States. Selected questions in both surveys overlapped so that responses could be compared in key areas.

The *National Hog Farmer* qualified mailing list provided a select sample of producers/owners. A random sample of producers with an annual production of 3,000 head or more, or verified with 100 sows or more, were surveyed. All employees on the *National Hog Farmer* list were sent the survey.

Responses were tabulated to identify averages and differences. Not everyone answered every question, so the number of respondents may vary slightly with each question.

Iowa State University and University of Minnesota economists teamed with *National Hog Farmer* and Pfizer Animal Health to conduct the study.

Results and Discussion

Producers and employees age continues to edge upward (Table 1). The producer average age increased 8.2 years from 1990, or one year for every 1.8 calendar years. The average producer age increased by 4.1 years during the last five years, a rather dramatic shift. The average age of employees increased 9.1 years since the first survey, or one year for every 1.6 calendar years. This increased by 6.6 years during the last five years.

In 1990, 17.9 percent of producers were 30 years old or younger. By 2005, there were 14 percent fewer producers in that age bracket, registering in at just 3.9 percent.

In the current survey, just under 20 percent of producers were 40 years old or younger, slightly more than the percentage of 30 years or younger group in 1990 (17.9%). This represents a dramatic shift during the 15-year period covered by the current and previous surveys.

The shift in the number of producers 41 years of age or older is notable and marks a significant trend, which is also reflected in the employee report. There were 15.7 percent of producers who were 56 or older in 1990. That figure expanded to 17.6 percent in 1995, 19.5 percent in 2000, and now is at about one-third of the producers. This points out that the average producer age is increasing because of two main reasons. Some farmers are staying in the labor force

longer and there is a lack of young producers entering pig production. These results suggest that the industry lost experienced middle-age producers between 1990 and 2005.

Employee average age has also increased. The average age increased from 33.2 to 42.3 years of age during the 15 years of compiled data – an increase of 9.1 years. Most of this increase has occurred since 2000. The percentage of employees older than 45 increased notably from 2000 to 2005. Those over 65 also increased from less than 1 percent to 5.6 percent during this time. Fewer young workers are moving into the industry. Between 1990 and 2005, the number of employees younger than 30 years of age dropped from 45.2 percent to 18.7 percent. It dropped from 34.2 percent to 18.7 percent from 2000 to 2005.

Retention of employees is a problem. The cohort group aged 25-30 (26.7 percent) in 1990 was 36-40 (17.8 percent) in 2000, and 41-45 (14.8 percent) in 2005. This represents a decline of more than 44.5 percent during the 15-year period. These results suggest that the industry had difficulties attracting and retaining younger employees during the 1990s and early 2000s. Industries gain strength from hiring, retaining and developing young employees. While the cohort trends show the industry lost fewer young employees between 1995 and 2000, which did not happen in the 2000s. The decline in the size of cohorts aged 25-40 is a concern.

Education trends are showing higher levels of education for both producer and employees. A high school diploma represented the largest group of producers and employees in 1990 (Table 2). Although a high school diploma remained as the largest category for producers in three of the four years surveyed (the exception being 2000), a four-year college degree has been the most frequent response of employees since 1995. It now represents one-fourth to one-third of employees.

The trend toward higher education is well established in both categories. In 2005, 64 percent of producers and 67 percent of employees indicated they had some education beyond high school.

The percentage of producers with more than a four-year college degree vacillated slightly over the last 15 years, ranging from 4.3 percent up to 6.5 percent. The high school diploma, jumping from 3.7 percent up to 9.3 percent. The number with a high school diploma declined from 31.8 percent to 23.9 percent during the period. At the other end of the spectrum, the percent of employees with a master's degree or higher increased from 3.4 percent to 14.2 percent of the employees.

biggest increase in educational groups for producers was in the vocational and two-year college degree areas, accounting for nearly 20 percent in 2005.

There are two striking trends with employee education levels between 2000 and 2005. There was a dramatic increase in the number of employees without a

Serving as a benchmark, it is interesting to note that in 2003 the U.S. Census Bureau reported that 9.9 percent of the civilian workforce had not completed high school, while 30 percent had obtained a high school diploma, 21.2 percent had achieved a four-year college degree, and 11.3 percent had attained an advanced degree. These results suggest the production segment of the U.S. pork industry has a favorable educational foundation, which is positive news because a more educated workforce is generally a more productive and better-paid workforce.

Specialization is occurring in the industry. There is a movement away from farrow-to-finish operations toward specialization. For example, there was a 39.4 percentage point drop in producers with farrow-to-finish operations, between 1990 and 2005 (Table 3). It declined from 83.1 percent to 43.7 percent of the producers. The more specialized operations like feeder pig finishing and contract finishing increased dramatically between 1990 and 1995, accounting for a 13.3 percentage point increase for the two categories, while contract finishing took another 7.3 percentage point bump between 1995 and 2000. These remained relatively stable between 2000 and 2005.

Wean-to-finish operators added in 2005, now represent about one in ten producers. Feeder pig finishing operators grew from 1 percent of the respondents in 1990 to 9.2 percent in 2005.

Herd size is also increasing (Table 4). The percentage of employees working in units producing less than 3,000 head accounted for 47.4 percent of the workforce in 1990. This decreased to only 24.1 percent by 1995 and is just 14.2 percent of the employees today. The percentage of employees working in operations producing 25,000 hogs or more annually has seen the opposite trend. It increased from 25.7 percent in 1995 to 52.3 percent in 2005. The proportion of employees working in operations with 25,000 or more hogs in 2005 exceeds the proportion that worked in operations of 10,000 head or more in 1995.

Almost one in three (29.8 percent) employees worked in an operation that produced 100,000 or more pigs annually. This is greater than the percentage that worked in operations with 10,000 or more pigs produced in 1990, or the percent that worked in operations producing 10,000 to 25,000 pigs in 2000. Producers have also shown dramatic growth with the producers side where in 2005, 34.8 percent of the producers reporting raising 10,000 head or more. This increased from 8.7 percent in 1990 to 12.5 percent in 1995 and to 30.7 percent in 2000. The big growth came between 1995 and 2000. The percent raising 25,000 or more hogs annually increased from 3.4 percent in 1995 to 15.7 percent in 2005. The 100,000 or

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more category was selected by 4.4 percent of survey respondents in 2005.

In 2005, the average number of years an employee has spent with a hog operation increased to 9 years after declining from 8.9 in 1990 to 6.5 in 2000. Overall, employee tenure increased a modest 1.1 percent over the past 15 years. In comparison, based on 2004 Bureau of Labor Statistics (BLS) data, the median tenure for all workers in the United States age 25 and over was 4.9 years. Over the 13-year period from 1991 to 2004, employee tenure for U.S. workers over 25 reported by the BLS declined by 2 percent.

The average number of operations an employee has worked for decreased from 2.5 in 2000 to 2.3 in 2005. Additionally, the percentage of employees who have worked in more than two operations decreased from 37.9 percent in 2000 to 32.7 percent in 2005. This signals the reversal of a decade-old trend of increased employee turnover.

Acknowledgements

Appreciation is expressed to the National Pork Board for providing funding for the study.

Table 1. Respondent's age.

Age	Producer (%)				Employee (%)			
	2005	2000	1995	1990	2005	2000	1995	1990
16-24	0.7	0.9	2.3	4.4	7.9	13.3	17.9	18.5
25-30	3.2	5.8	6.8	13.5	10.8	20.9	21.2	26.7
31-35	7.1	10.1	14.4	18	14.8	20.2	19.4	23.7
36-40	8.8	18.2	18.6	16.6	15.1	17.8	17.3	14.8
41-45	14.1	18	17.3	13	14.8	14.3	11.4	7
46-50	19.6	16.1	13.5	9.6	11.7	5.8	5.3	2.8
51-55	15.5	11.5	9.6	9.2	9.8	3.1	2.9	2.8
56-60	13.1	10.1	7.4	7.1	6.8	2.6	2.6	1.5
61-65	9.2	3.2	5.6	4.7	2.7	1.4	1.1	1.1
Over 65	8.8	6.2	4.6	3.9	5.6	0.6	0.9	1.1
Average	50.1	46	44.3	41.9	42.3	35.7	34.8	33.2

Table 2. Respondent's level of education.

Highest Level of Achievement	Producer (%)				Employee (%)			
	2005	2000	1995	1990	2005	2000	1995	1990
No High School Diploma	4.2	4.1	3.9	4.8	9.3	3.7	5.4	5.9
High School Diploma	31.4	30.6	32.9	37.6	23.9	31.8	27.3	33.7
Vocational Degree	12.5	8.7	12.2	8.8	12.4	11.3	13.3	11.2
Two-Year College Degree	7.2	4.8	6.8	6.2	6.7	8.2	10.1	10.8
Four-Year College-No Degree	9.6	8.1	11.1	10.9	5.5	7.1	7.6	8.9
Four-Year College Degree	28.7	35.7	26.6	24.1	25.7	32.5	29	23.3
Master's Degree or Equivalent	3.9	4.6	3.6	4.1	5.2	2	4.1	3.8
Ph.D. Degree or Equivalent	1	1.9	0.7	1.2	2	1.4	0.8	1.2
Doctor of Veterinary Medicine	0.9	NA	NA	NA	7	NA	NA	NA
Other	0.7	1.6	2.2	2.3	2.3	2	2.4	1.2

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Table 3. Type of operation.

Operation Type	Producer (%)				Employee (%)			
	2005	2000	1995	1990	2005	2000	1995	1990
Farrow to Finish	43.7	51.6	66.9	83.1	44.2	40.8	60.4	61.4
Farrow to Feeder Pig	7.3	6.1	8.5	10.8	14.1	17.5	13.2	13
Feeder Pig Finisher	9.2	10.2	9.1	1	3.2	4.8	4	6.4
Farrow to Feeder/Contract Finisher	2	0.7	1.9	1.3	3.7	4.5	3.9	2
Contract Farrow to Finish ^a	0.3	0.6	0.7	NA	0.2	0.8	1	2.1
Contract Farrow/Nursery ^a	3.3	4.6	2.3	NA	2.6	4.7	1.9	6.4
Contract Finisher	12.2	12.7	5.4	0.2	3.8	5.7	2.5	1.9
Seedstock Supplier	1.7	2.7	3.9	2.9	3.4	5.1	7.5	NA
Wean to Finish	9.5	NA	NA	NA	3.8	NA	NA	NA
Multiple Types ^b	3.9	5.5	NA	NA	4.8	4.6	NA	NA
Other ^c	6.9	5.2	1.3	0.6	16.2	11.4	5.5	6.9

NOTE: NA means this response was not offered.

^aWas not offered on the 1990 survey, but many employees reported it as 'other'.

^bAll surveys asked respondents to make only one choice – the choice that best described the operation. In 2000 and 2005, respondents reported multiple types were specifically noted.

^cFarrow-to-wean operations were the most common other type of operation specified in 2005.

Table 4. Pigs produced in the survey year.

Annual Hog Production	Producer (%)				Employee (%)			
	2005	2000	1995	1990	2005	2000	1995	1990
Less than 1,000	8.3	3.9	5.3	5.6	7.1	2.1	6.7	18.6
1,000-1,999	10.5	14.1	22.6	31.6	3.6	2.7	9	17.3
2,000-2,999	12.4	14.7	25.3	25.4	3.5	6.4	8.4	11.5
3,000-4,999	14.1	16.2	18	15.7	4.8	6.5	10.6	12.1
5,000-9,999	19.8	20.3	16.3	13	9.4	10.8	15.8	18.3
10,000 or more*	34.8	30.7	12.5	8.7	71.5	71.5	49.5	22.2
10,000-14,999	10.9	9.8	5.5	NA	9.9	13.4	12.8	NA
15,000-24,999	8.2	8.4	3.6	NA	9.3	10.9	11	NA
25,000 or more*	15.7	12.5	3.4	NA	52.3	47.2	25.7	NA
25,000-49,999	7.4	NA	NA	NA	12.9	NA	NA	NA
50,000-99,999	3.9	NA	NA	NA	9.6	NA	NA	NA
100,000 or more	4.4	NA	NA	NA	29.8	NA	NA	NA

Note: NA means this response was not offered

*Incremental breaks were added in the 1995 and 2005 surveys; these lines reflect the composite of the lines that follow.