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## Abstract

Approximately 30 swine operations are enrolled in the 1992 - 93 Kansas Swine Enterprise Record Program provided by Kansas State University. This program evaluates biological and economic performance and is part of a cooperative record-keeping project with extension personnel and swine producers in Kansas, Nebraska, and South Dakota. Records are summarized every 6 months, and the corresponding data are pooled to form state and regional averages. This summary is the combined data for the 18 farrow-to-finish operations in Kansas that kept records during 1992. The semiannual data represents the last 6 months of 1992, whereas the annual data are for the 12-month period of January 1, 1992 to December 31, 1992. Profit per cwt of pork produced for these 18 producers averaged a loss of 4.78 for the last 6 months and a loss of \$.52 for the entire year. Profits varied substantially between producers. Producers in the top one-third in terms of profitability had average profits of \$5.72 per cwt, whereas producers in the bottom one-third had average losses of \$6.97 per cwt for the year. Critical factors separating low- and high-profit producers included feed costs, unpaid labor, fixed costs, and sow productivity.; Swine Day, Manhattan, KS, November 18, 1993; Typo of author's name M. L. Langemeier; should be M. R. Langemeier.;

## Keywords

Swine day, 1993; Kansas Agricultural Experiment Station contribution; no. 94-194-S; Report of progress (Kansas State University. Agricultural Experiment Station and Cooperative Extension Service); 695; Swine; Enterprise; Records; Analysis; Profitability

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## KANSAS STATE UNIVERSITY SWINE ENTERPRISE RECORD SUMMARY<sup>1</sup>

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M. D. Tokach, and J. L. Nelssen*

### Summary

Approximately 30 swine operations are enrolled in the 1992 - 93 Kansas Swine Enterprise Record Program provided by Kansas State University. This program evaluates biological and economic performance and is part of a cooperative record-keeping project with extension personnel and swine producers in Kansas, Nebraska, and South Dakota. Records are summarized every 6 months, and the corresponding data are pooled to form state and regional averages.

This summary is the combined data for the 18 farrow-to-finish operations in Kansas that kept records during 1992. The semi-annual data represents the last 6 months of 1992, whereas the annual data are for the 12-month period of January 1, 1992 to December 31, 1992. Profit per cwt of pork produced for these 18 producers averaged a loss of 4.78 for the last 6 months and a loss of \$.52 for the entire year. Profits varied substantially between producers. Producers in the top one-third in terms of profitability had average profits of \$5.72 per cwt, whereas producers in the bottom one-third had average losses of \$6.97 per cwt for the year. Critical factors separating low- and high-profit producers included feed costs, unpaid labor, fixed costs, and sow productivity.

(Key Words: Enterprise, Records, Analysis, Profitability.)

### Introduction

Production and financial records have become essential management tools of many swine producers. Production records measure the productivity of an operation. Financial records measure economic performance. An accurate set of records allows producers to compare their efficiency levels with those of other producers and to track performance over time. Records are particularly useful when making capital purchases of buildings and equipment and in evaluating whether a change in an operation (e.g., buying higher quality breeding stock) will pay for itself.

Kansas State University joined the University of Nebraska and South Dakota State University in a cooperative record-keeping program in January of 1991. This program compiles individual producer records on production and financial factors into state and regional summaries. Enterprise summaries are provided for farrow-to-finish, feeder pig producing, feeder pig finishing, combination (less than 70% of pigs sold as either market hogs or feeder pigs), and seedstock operations. Many of the items are recorded on the basis of per cwt of pork produced. Recording costs on a per cwt

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basis facilitates comparisons between producers of various sizes.

### **Kansas Group Summary**

Individual producers collect data on hog inventories, hog sales, hog purchases, feed inventories, feed purchases, operating expenses, labor, fixed expenses, and herd performance. These individual producer data were used by extension personnel at Kansas State University to compile the 1992 Kansas groups summaries reported in Table 1. Profit per cwt of pork produced on an economic life depreciation basis (Line 20) is used to separate producers into top and bottom one-third profit groups. Thus, all other items represent the means for that particular profit group. The information in Table 1 allows producers to compare the performance of their operation to that of other producers in the program.

Profit per cwt of pork produced for the 18 farrow-to-finish producers in the program averaged slightly below breakeven (-\$.52 per cwt) over the whole year. However, profits varied substantially between producers. Producers in the top one-third in terms of profitability had average profits per cwt of \$5.72. Producers in the bottom one-third had average losses of \$6.97 per cwt for the year.

Notice that returns over cash costs (Line 2) were positive for all three profit groups for the whole year. For the last 6 months, only the low profit group could not cover cash costs. Typically, most producers can cover cash costs, even when prices are relatively low. However, producers in the bottom one-third profit group were not able to cover unpaid labor and fixed costs for the last 6 months and the year. The average producer also could not cover these costs in the last 6 months of 1992; thus, their return to management was negative (line 3). These producers will need to cover unpaid labor and fixed costs to stay in business in the long-run. The need to develop some management options that will improve their profitability in the future is indicated.

Line 4 presents the annual rate of return on capital invested in the swine operation. This rate should be compared to the rates that can be earned on other investments (e.g., banks, stocks). The return on capital for producers in the high one-third profit group was substantially more than the average return on capital for all 18 producers for the entire year. Note that the return on capital for producers in the bottom one-third profitability group was negative (-6.57) for the entire year.

Variable costs per cwt (Line 10) can be broken down into four categories: feed costs (Line 5), other operating expenses (Line 6), interest costs on operating capital (Line 9), and unpaid labor and management (Line 38). Total costs per cwt include these variable costs, plus interest charges on investments in buildings and equipment (Line 12) and economic life depreciation, taxes, and insurance costs (Line 13). Producers in the top one-third profit group had lower costs per cwt for each of the variable (34.15) and total (37.50) cost categories compared to the average producers' variable (37.90) and total (43.57) costs per cwt of pork produced. A \$13.77 per cwt difference in total costs existed between producers in the top and bottom one-third profit groups for 1992.

Feed costs per cwt accounted for \$2.41 or 17.5% of the difference in total costs for the two profit groups. Cheaper diets do not correspond directly to lower feed costs. However, the top one-third producers were able to purchase their feed for less (line 52), and as indicated by the supplement to grain ratio, they may have been feeding higher quality diets. A 9.8% improvement in feed efficiency occurred between producers in the top vs bottom one-third profit groups for the last 6 months of 1992; however for the whole year, the improvement in feed efficiency was only 4.5%.

Other operating expenses include utilities, hired labor, supplies, repairs, veterinarian costs, and professional dues. Other operating expenses and interest costs on

capital accounted for 20.1% and 2.8% of the difference in total costs between producers in the high- and low-profit groups.

More efficient use of available labor can be a key difference in producer profitability. Unpaid labor and management were \$2.43 per cwt higher for producers in the low-profit group than for producers in the high-profit group for 1992. This difference in unpaid labor and management accounted for 20.4% of the difference in total costs per cwt between the two groups.

Differences in fixed costs per cwt accounted for the remaining 41% of the difference in total costs between producers in the high- and low-profit groups for the year. Producers in the top one-third group had more litters per sow per year (line 25), weaned more pigs/litter (line 28), had more pigs produced per crate (line 30), and had lower finishing pig death loss (line 33). However, the number of pigs sold per litter farrowed (line 31) was similar between the top and bottom one-third profit groups. This probably reflects pigs held back or marketed shortly after the record period was closed out by the top one-third producers. Producers in the bottom one-third group had relatively more capital invested in facilities on a per cwt of pork produced basis (10.99 vs 34.40). This indicates that

lower profit producers may have newer facilities or may need to improve their throughput with the facilities to spread with the fixed costs out over more pigs produced.

An interesting component to compare is average price received per cwt of pork produced. Generally, a wide range of prices is received because of the different marketing strategies used by producers in the state. However, regardless of profitability group, a comparison of individual state enterprise records summaries indicates that producers in Kansas receive approximately \$.50 to \$.75 less per cwt than producers in Nebraska and \$1.00 less per cwt than producers in Iowa.

Finally, swine enterprise records serve as a useful management tool for individual producers to monitor their individual herd's production and economic performance over the last 6 months and for the year. As swine production becomes more competitive, the identification of good or problem areas of an operation becomes increasingly essential for producers to maintain profitability. By comparing an individual's records to the group summary, key economic criteria can be identified and management strategies implemented to improve profitability. The KSU Swine Enterprise Record program is an integral part of the swine extension service offered by Kansas State University.

**Table 1. Kansas Group Summary Averages for Farrow-to-Finish Operations**

	Farrow to Finish Operations					
	Semi-Annual Data (18 farms)			Annual Data (18 Farms)		
	Average	High 1/3	Low 1/3	Average	High 1/3	Low 1/3
1. Net pork produced, lbs.	209,576	337,512	180,002	458,496	658,510	309,176
2. Income over feed, oper. exp., oper. int., & hired labor	12,689	35,135	(5,606)	40,215	65,510	25,555
3. Profit or return to management, ELD	(5,455)	12,246	(25,196)	388	29,545	(21,782)
4. Annual rate of return on capital, ELD	-3.30	13.74	-21.77	7.33	24.99	-6.57
<b>Variable Expenses:</b>						
5. Total feed expense/cwt pork produced	24.41	23.15	27.47	24.39	23.50	25.91
6. Other oper. expenses (total)/cwt pork produced	7.09	5.44	10.57	6.79	5.09	7.86
a. Utilities; fuel, electricity, phone/cwt pork produced	1.55	1.13	1.92	1.32	1.13	1.66
b. Vet. expenses and medications/cwt pork produced	1.02	.68	1.39	.99	.71	.85
c. Remainder of other oper. expenses/cwt pork produced	4.52	3.63	7.26	4.48	3.26	5.34
7. Total cost of labor/cwt of pork produce	5.92	4.69	7.15	5.86	4.58	7.39
8. Total oper. capital inv./cwt of pork produced	20.51	18.60	24.29	17.65	16.10	19.34
9. Int. cost on oper. invest./cwt of pork produced	2.46	2.23	2.92	2.12	1.93	2.32
10. Total variable cost/cwt of pork produced	38.63	34.49	45.39	37.90	34.15	42.14
<b>Fixed and Total Costs:</b>						
11. Total fixed cap. inv. (ELD)/cwt of pork produced	22.35	11.91	28.58	21.47	10.99	34.40
12. Int. chg. on fixed inv. (ELD)/cwt of pork produced	2.24	1.19	2.86	2.15	1.10	3.44
13. E.L. deprec., taxes and ins. cost/cwt of pork produced	3.59	2.27	4.59	3.53	2.25	5.69
14. Tax deprec., taxes and ins. cost/cwt of pork produced	2.24	1.34	3.05	2.42	1.12	4.32
15. Fixed cost (ELD)/female/period	99.02	63.42	123.55	200.02	129.52	321.75
16. Fixed cost (ELD)/crate/period	475.44	321.40	633.22	983.30	562.09	1635.80
17. Total cost (ELD)/cwt of pork produced	44.46	37.95	52.84	43.57	37.50	51.27
18. Total cost (ELD)/female/period	765.32	708.20	879.81	1556.93	1475.70	1789.66
19. Total cost (ELD)/crate/period	3689.40	3608.96	4392.74	7608.16	6741.15	8961.34
<b>Income and Profit</b>						
20. Profit based on Econ. Life Deprec./cwt of pork produced	-4.78	2.91	-14.14	-.52	5.72	-6.97
21. Profit based on Tax Deprec./cwt of pork produced	-3.60	3.10	-12.95	.57	6.88	-5.31
22. Profit based on Econ. Life Deprec./female/period	-71.45	71.84	-234.12	-9.79	226.89	-243.87
23. Profit based on Econ. Life Deprec./crate/period	-378.01	279.83	-1188.27	-139.58	942.46	-1244.92

Semi-Annual Date July 1, 1992 - December 31, 1992 & Annual Date January 1, 1992 - December 31, 1992  
Profit, fixed and total costs are based on Econ. Life Deprec. unless stated otherwise.

**Table 1. (cont'd)**

	Semi-Annual Data (18 farms)			Annual Data (18 Farms)		
	Average	High 1/3	Low 1/3	Average	High 1/3	Low 1/3
<b>Production summary:</b>						
24. Average female inventory	117	177	106	123	154	87
25. Number of litters weaned/female/period	.86	.96	.83	1.75	1.99	1.67
26. Number of litters weaned/crate/period	4.09	4.84	4.06	8.42	9.04	8.25
27. Number of live pigs born/litter farrowed	9.87	10.09	10.15	10.10	10.09	10.07
28. Number of pigs weaned/litter farrowed	8.15	8.69	8.37	8.46	8.44	8.13
29. Number of pigs weaned/female/period	7.26	8.26	6.89	15.06	17.19	14.06
30. Number of pigs weaned/crate/period	34.71	41.66	34.01	72.82	77.94	70.22
31. Number of pigs sold/litter/period	8.33	8.20	8.85	8.06	7.79	8.04
<b>Death Loss:</b>						
32. Birth to weaning (% of no. born)	14.26	15.86	15.96	14.45	15.60	15.55
33. Weaning to market (% of no. weaned)	6.56	6.70	6.14	5.91	5.29	6.85
34. Breeding stock (% of breeding herd maintained)	1.99	2.15	2.58	4.53	4.07	6.32
<b>Labor:</b>						
35. Labor hours/cwt of pork produced	.80	.65	.95	.80	.61	1.04
36. Labor hours/female/period	13.37	11.54	15.52	28.03	23.17	35.70
37. Labor hours/litter weaned/period	15.87	12.62	18.84	16.32	11.81	21.45
38. Cost of unpaid labor & mgmt./cwt of pork produced	4.67	3.66	4.44	4.60	3.63	6.06
39. Total cost of labor (paid + unpaid)/cwt of pork produced	5.92	4.69	7.15	5.86	4.58	7.39
40. Total cost of labor (paid + unpaid)/female/period	99.85	84.64	117.07	207.12	177.18	254.71
41. Return/hour for all hours of labor and management	2.70	13.65	-8.58	8.39	18.32	-0.59
<b>Marketing and Purchases:</b>						
42. Number of market hogs sold	826	1285	744	1751	2594	1159
43. Average weight/head for market hogs sold	242	244	240	242	242	245
44. Average price received for market hogs/cwt	42.52	42.66	42.84	42.03	42.24	41.44
45. Number of feeder pigs sold	3	7	0	11	18	16
46. Average weight/head of feeder pigs sold	131.8	146.8	0	91.8	112.9	66.5
47. Average price received/head for feeder pigs sold	78.49	74.68	0	56.43	50.04	68.93
48. Average price received/cwt for feeder pigs sold	82.21	60.22	0	69.68	43.26	90.52
<b>Feed Cost and Consumption:</b>						
49. Total lbs of feed fed/cwt of pork produced	396	378	415	378	380	397
50. Total lbs of grain fed/cwt of pork produced	315	297	331	300	298	320
51. Total lbs of supplement fed/cwt of pork produced	80	81	84	78	82	77
52. Average costs of diets/cwt	6.17	6.11	6.62	6.48	6.20	6.57

Semi-Annual Date July 1, 1992 - December 31, 1992 &amp; Annual Date January 1, 1992 - December 31, 1992

Profit, fixed and total costs are based on Econ. Life Deprec. unless stated otherwise.