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KSU SWINE ENTERPRISE RECORD SUMMARY¹

M. R. Langemeier², R. D. Goodband, and M. D. Tokach

Summary

Approximately 35 swine operations are enrolled in the 1992 Kansas Swine Enterprise Record Program. This program evaluates physical 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 paper summarizes the data for 22 farrow-to-finish operations in Kansas that kept records during the first 6 months of 1992. Profit per cwt. of pork produced for these 22 producers averaged \$1.13. Profits varied substantially between producers. Producers in the top one-third in terms of profitability had average profits of \$8.25 per cwt., whereas producers in the bottom one-third had average losses of \$7.02 per cwt. Critical factors separating low and high profit producers included feed costs, unpaid labor, fixed costs, and productivity.

Introduction

Production and financial records have become essential management tools of many swine producers. An accurate set of records allows producers to compare their efficiency levels with other producers and to track performance over time. Records are particu-

larly 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. Production records measure the productivity of an operation. Financial records measure economic performance.

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 purebred operations. Many of the items are recorded on the basis of per cwt. of pork produced. Recording costs on a per cwt. basis facilitates comparisons between producers of various sizes. This paper summarizes the records of 22 farrow-to-finish operations and the six combination operations in Kansas that completed an analysis for the first half of 1992.

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

¹The authors wish to thank Mike Brumm and Dale Kabes, University of Nebraska, for their assistance with the program and the many Kansas County Agricultural Extension Agents for their assistance.

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were used to compile the summaries reported in Table 1. Profit per cwt. 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. The discussion below will focus on the semi-annual summary for farrow-to-finish producers.

Profit per cwt. on an economic life depreciation basis is computed by dividing the return to management figure found on Line 3 by the net pounds of pork produced (Line 1). Profit per cwt. produced for the 22 farrow-to-finish producers in the program averaged \$1.13 per cwt. over the first 6 months of this year. However, profits varied substantially between producers. Producers in the top one-third in terms of profitability had average profits per cwt. of \$8.25. Producers in the bottom one-third had average losses of \$7.02 per cwt.

Notice that returns over cash costs (Line 2) were positive for all three profit groups. This is fairly typical. 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; thus, their return to management was negative. These producers will need to cover unpaid labor and fixed costs to stay in business in the long-run.

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. The return on capital for producers in the high one-third profit group was more than two and one-half times larger than the average return on capital for all 22 producers. Note that the return on capital for producers in the bottom one-third group was negative.

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 variable costs, interest charges on investments in buildings and equipment (Line 12), and economic life depreciation (Line 13). Producers in the top one-third profit group had lower costs per cwt. for each of the total and variable cost categories.

There was a \$15.04 per cwt. difference in total costs between producers in the top and bottom one-third profit groups. Feed costs per cwt. accounted for \$3.65 or 24.3% of the difference in total costs for the two profit groups. Cheaper diets do not directly correspond to lower feed costs. The bottom one-third group of producers actually had less expensive diets (Line 52). As indicated by the supplement to grain ratio, the top one-third group of producers seemed to feed a higher quality diet. This may partially explain the lower whole herd feed conversion for this group.

Other operating expenses and interest costs on capital accounted for 14.5% and 3.2% of the difference in total costs between producers in the high and low profit groups. Other operating expenses include utilities, hired labor, supplies, repairs, veterinarian costs, and professional dues.

Unpaid labor and management were \$5.14 per cwt. higher for producers in low profit group than for producers in the high profit group. This difference in unpaid labor and management accounted for 34.2% of the difference in total costs per cwt. between the two groups.

Differences in fixed costs per cwt. accounted for the remaining 23.8% of the difference in total costs between producers in the high and low profit groups. This difference in fixed costs is not related to operation size. On average, producers in the bottom

one-third were slightly larger than producers in the top one-third. Producers in the top one-third group weaned more pigs/litter (line 28) and pigs/female (line 29) and had lower finishing pig death loss (line 33). As a result, the number of pigs sold per litter farrowed (line 31) was 1.2 pigs greater for the top one-third profit group compared to the bottom one-third group. Producers in the bottom one-third group had relatively more capital invested in facilities on a per cwt. of

pork produced basis. There was a 18.0% improvement in feed efficiency between producers in the top vs bottom one-third profit groups. Finally, swine enterprise records provide an opportunity to monitor individual herd economic performance. By comparing an individual's records to the group summary, key economic criteria can be identified and management strategies implemented to improve profitability.



Lyell Nelson, Dr. Don Kropf, and John Wolf evaluate carcasses in the KSU Meats Lab.

Table 1. Kansas Group Summary Averages

	Farrow to Finish Operations						Combination Operations*		
	Semi-Annual Data			Annual Data			Semi-Annual Data		
	(22 Farms)			(7 Farms)			(6 Farms)		
	Average	High1/3	Low1/3	Average	High1/2	Low1/2	Average	High1/2	Low1/2
1. Net pork produced, lbs.	203,091	150,138	112,192	303,033	321,312	302,254	111,308	149,568	73,048
2. Income over feed, oper. exp., oper. int., & hired labor	22,809	22,577	11,564	19,112	31,138	7,861	17,646	28,904	6,388
3. Profit or return to management, ELD	4,139	11,846	(6,977)	(14,357)	961	(30,684)	6,783	16,022	(2,457)
4. Annual rate of return on capital, ELD	11.20	30.48	-7.18	-4.11	9.46	-16.83	20.14	46.28	-5.99
Variable Expenses:									
5. Total feed expense/cwt. pork produced	25.58	24.08	27.73	25.14	23.69	27.14	27.95	23.80	32.10
6. Other oper. expenses (total)/cwt. pork produced	6.40	4.65	6.84	5.62	5.47	5.40	7.96	4.85	11.07
a. Utilities; fuel, electricity, phone/cwt. pork produced	1.47	0.95	2.10	1.13	0.92	1.53	1.34	0.88	1.79
b. Vet. expenses and medications/cwt. pork prod.	0.85	0.85	0.61	0.71	0.62	0.57	1.30	1.25	1.34
c. Remainder of other oper. expenses/cwt. prod.	4.08	2.85	4.13	3.78	3.93	3.30	5.32	2.71	7.93
7. Total cost of labor/cwt. of pork produced	6.80	4.36	10.32	6.34	4.51	7.94	7.35	6.03	8.66
8. Total oper. capital inv./cwt. of pork produced	19.74	17.71	21.67	18.31	17.37	19.52	15.11	12.01	18.22
9. Int. cost on oper. invest./cwt. pork produced	2.37	2.12	2.60	2.20	2.08	2.34	1.81	1.44	2.19
10. Total variable cost/cwt. of pork produced	39.86	34.44	45.89	38.52	35.19	41.59	44.32	34.93	53.71
Fixed and Total Costs:									
11. Total fixed cap. inv. (ELD)/cwt. pork produced	21.97	17.42	29.86	25.01	24.74	26.89	24.76	18.44	31.09
12. Int. chg. on fixed inv., (ELD)/cwt. pork produced	2.20	1.74	2.99	2.50	2.47	2.69	2.48	4.84	3.11
13. E.L. deprec., taxes and ins. cost/cwt. pork prod.	3.48	2.50	4.84	3.33	3.34	3.69	2.98	2.64	3.32
14. Tax deprec., taxes and ins. cost/cwt. pork prod.	2.35	1.50	3.22	2.51	2.41	2.59	2.44	1.68	3.20
15. Fixed cost (ELD)/female/period	98.32	80.00	117.96	193.44	202.36	189.28	71.77	71.70	71.84
16. Fixed cost (ELD)/crate/period	469.92	320.11	587.84	987.71	855.56	1141.44	258.73	246.42	271.05
17. Total cost (ELD)/cwt. or pork produced	45.54	38.68	53.72	44.35	41.01	47.96	49.78	39.41	60.14
18. Total cost (ELD)/female/period	805.87	753.22	799.05	1513.93	1494.49	1421.99	694.18	681.54	706.81
19. Total cost (ELD)/crate/period	3852.03	3008.57	3984.83	7865.50	6564.22	8759.76	2536.18	2350.78	2721.58
Income and Profit:									
20. Profit based on Econ. Life Deprec./cwt. pork prod.	1.13	8.25	-7.02	-4.60	1.51	-10.75	1.42	10.63	-7.80
21. Profit based on Tax Depreciation/cwt. pork prod.	2.71	9.84	-4.92	-3.68	2.62	-9.83	2.65	12.26	-6.97
22. Profit based on Econ. Life Deprec./female/period	32.73	159.64	-101.50	-148.60	29.15	-311.88	53.24	184.74	-80.26
23. Profit based on Econ. Life Deprec./crate/period	118.47	627.20	-491.55	-933.38	70.77	-1933.94	195.66	685.98	-294.65

*Combination operations have > 30% of hogs marketed as feeder pigs and < 70% sold as market hogs.

	<u>Farrow to Finish Operations</u>						<u>Combination Operations</u>		
	<u>Semi-Annual Data</u>			<u>Annual Data</u>			<u>Semi-Annual Data</u>		
	<u>(22 Farms)</u>			<u>(7 Farms)</u>			<u>(6 Farms)</u>		
	<u>Average</u>	<u>High1/3</u>	<u>Low1/3</u>	<u>Average</u>	<u>High1/2</u>	<u>Low1/2</u>	<u>Average</u>	<u>High1/2</u>	<u>Low1/2</u>
Production Summary:									
24. Average female inventory	110	78	81	91	88	106	71	84	57
25. Number of litters weaned/female/period	0.92	0.89	0.85	1.79	1.85	1.67	0.96	1.01	0.91
26. Number of litters weaned/crate/period	4.30	3.52	4.06	8.93	8.00	9.63	3.55	3.60	3.51
27. Number of live pigs born/litter farrowed	10.10	10.71	9.25	9.43	9.28	8.95	10.33	10.52	10.14
28. Number of pigs weaned/litter farrowed	8.54	8.75	8.10	8.27	7.84	8.33	9.04	9.75	8.33
29. Number of pigs weaned/female/period	8.08	8.20	7.14	14.86	15.04	13.52	8.97	10.23	7.71
30. Number of pigs weaned/crate/period	38.22	32.21	35.30	75.54	65.35	80.79	32.81	35.74	29.88
31. Number of pigs sold/litter farrowed	7.24	7.68	6.48	7.39	6.93	7.43	9.78	9.04	10.52
Death Loss:									
32. Birth to weaning (% of no. born)	13.65	13.23	13.38	13.89	12.45	14.08	12.80	14.15	11.46
33. Weaning to market (% of no. weaned)	5.82	4.38	8.26	5.24	3.25	6.41	2.36	2.86	1.86
34. Breeding stock (% of breeding herd maintained)	3.34	3.56	4.64	2.59	4.42	1.08	1.89	0.67	3.11
Labor:									
35. Labor hours/cwt. of pork produced	0.92	0.58	1.43	0.86	0.61	1.08	0.89	0.65	1.14
36. Labor hours/female/period	15.78	11.44	21.32	28.97	22.36	32.01	12.12	11.17	13.07
37. Labor hours/litter weaned/period	17.73	13.36	25.33	16.60	11.92	20.03	13.02	10.99	15.04
38. Cost of unpaid labor & mgmt./cwt. pork produced	5.52	3.58	8.72	5.57	3.95	6.71	6.60	4.84	8.36
39. Total cost of labor (paid + unpaid)/cwt. pork prod.	6.80	4.36	10.32	6.34	4.51	7.94	7.35	6.03	8.66
40. Total cost of labor (paid + unpaid)/female/period	116.79	85.44	153.32	213.58	163.64	235.57	103.58	108.22	98.94
41. Return/hour for all hours of labor and management	11.56	21.93	2.67	3.62	10.24	-2.69	14.33	26.14	2.51
Marketing and Purchases:									
42. Number of market hogs sold	754	529	398	1089	1131	1078	378	517.67	237.33
43. Average weight/head for market hogs sold	239	242	241	238	238	238	243	240.93	244.84
44. Average price received for market hogs/cwt.	41.12	41.11	40.47	43.83	44.95	42.81	42.00	42.02	41.98
45. Number of feeder pigs sold	12.14	9.00	17.71	14.71	14.00	20.33	267.67	280.67	254.67
46. Average weight/head of feeder pigs sold	61.9	49.4	61.2	59.5	61.0	58.4	51.50	48.67	54.33
47. Average price received/head for feeder pigs sold	45.18	34.86	51.29	39.15	35.83	41.53	36.50	36.13	36.88
48. Average price received/cwt. for feeder pigs sold	70.73	60.44	79.83	65.33	58.79	68.59	71.18	74.77	67.59
Feed Cost and Consumption:									
49. Total pounds of feed fed/cwt. of pork produced	368	333	407	370	342	401	399	357	441
50. Total pounds of grain fed/cwt. of pork produced	293	333	329	294	276	319	316	288	344
51. Total pounds of supplement fed/cwt. of pork prod.	75	70	79	76	69	82	83	69	97
52. Average costs of diets/cwt.	6.99	7.25	6.85	6.83	7.02	6.77	6.98	6.67	7.23

Final Group Averages October 1, 1992.

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