

Swine Enterprise Records — A Tool for Pork Producers

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Pork producers in the United States face increasing pressure to produce leaner, higher quality hogs at increasingly larger end weights. The pork industry is becoming more vertically integrated, with larger farms realizing substantial economies of scale. Profit margins are narrowing in the face of increased efficiency and larger, more constant pork supplies. To survive in this environment, herd production and financial records are a must! Herd management and marketing decisions must be made based on enterprise profitability. Producers must also be willing to respond to market demands and new technologies, but must evaluate changes based on their economic impact to the swine enterprise.

Producers should remember that they can have relatively little influence on market price, provided they have already explored their marketing options thoroughly and are marketing their hogs as efficiently as possible. Once a marketing program has been established, then the only way to continue increasing profits is by reducing production costs and increasing efficiency. Production costs can be consistently lowered only if quality records are available to allow informed management decisions.

What are Swine Enterprise Records?

Enterprise records are unique in that they combine both financial and production records into an integrated analysis of the overall swine operation. This kind of analysis enables a pork producer to identify management strengths and weaknesses and determine the effect of various management practices on enterprise profitability. Producers are then able to adjust individual components of the overall management scheme to

maximize efficiency and increase competitiveness and profitability (table 1).

In most cases an enterprise analysis will not determine which individual management practice needs to be

Table 1. Efficiency factors.

	High profit producers	Average of all producers	Low profit producers
Litters/sow/year	1.83	1.80	1.75
Pigs weaned/litter	8.22	8.07	7.85
Pigs weaned/sow/year	15.12	14.57	13.76
Death loss, birth-weaning (%)	14.26	15.46	16.92
Death loss, weaning to market (%)	5.20	5.87	6.49
Feed efficiency (per cwt/pork)	370	388	407
Average market weight (lbs)	234	234	233
Average market price (\$)	48.81	48.32	47.86
Average sow herd size	111	110	101

changed. However, enterprise records will identify areas where changes are needed (feed costs, death loss, capital costs, etc.). For example, if feed costs are too high then several questions should be asked:

- √ What is the herd feed efficiency?
- √ Are all feeders in good condition and adjusted properly?
- √ Is the genetic merit and makeup of the herd appropriate?

√ Are my ingredient costs locally competitive?

If pre-weaning death loss is too high, these questions should be asked:

- √ Is the current herd vaccination program appropriate?
- √ Are contagious disease or scours problems?
- √ Is the farrowing environment appropriate?

√ Are the sows' nutritional needs being met?

√ Are crushing deaths too frequent?

Once a management concern has been identified, then resources and appropriate personnel can tackle the problem. Consultants, such as a veterinarian, extension specialist, nutritionist, or engineer, may all be included in the management team. In many cases, the producer will want to use this team of specialists to continuously assist in operation management. Most team members will only be called upon periodically, but the working relationships are in place and available whenever necessary. None of this is possible without records.

Summary Statistics

Photos available
only in the printed
version.

Enterprise record programs provide producers with a wide variety of summary statistics and production and financial information. The importance of individual statistics will vary depending on the individual enterprise, but many of the statistics compiled in an enterprise analysis are crucial to the success of any swine operation. The following list includes some of the more important efficiency ratios and production costs. Each statistic on the list is briefly described and a comparative analysis given using data from the Iowa State Univer-

sity Swine Enterprise Summary of farrow-to-finish operations for 1991.

- **Feed cost per hundredweight (cwt) of pork produced.** Feed cost is the highest single cost associated with pork production, comprising 60 – 70 percent of total production costs for most operations. Feed cost per cwt of pork produced includes all feed fed during the period divided by the total pounds of pork produced. Feed costs tend to vary widely across opera-

tions and can differ by as much as \$5.00/cwt of pork produced or more. Feed costs per cwt of pork produced in the ISU summary varied from \$22.71 for high-profit operations to \$27.48 for low-profit operations in 1991. For an average 100-sow herd, this difference translates into a profit loss of \$17,000 annually. Feed costs for Idaho producers should be less than \$25.00/cwt of pork produced; many Idaho producers have lower feed costs.

- **Total pounds of feed fed per cwt of pork produced.** Feed efficiency is an important measure of overall efficiency and management skill. Whole herd feed utilization is the total amount of feed fed all animals divided by the total amount of pork produced. Feed efficiency also varies widely and can differ by as much as 75 – 100 lbs/cwt of pork produced between similar operations. Total pounds of feed per cwt of pork produced in the ISU summary varied from 352 lbs/cwt for high-profit operations to 399 lbs/cwt for low-profit operations in 1991. For an average 100-sow herd, this difference translates into an \$11,000 profit loss annually. Whole herd feed efficiency varies even more widely in Idaho due to variations in herd size and feed ingredients.
- **Total costs per cwt of pork produced.** Total costs of production includes: all feed costs; operating costs such as veterinary, utilities, fuel, and repairs; depreciation, taxes, and interest; capital charges, and labor. Total costs vary widely between operations depending on the level of production and efficiency, management skill, debt load, and operation size. Total costs per cwt of pork produced in the ISU summary varied from \$35.49 for high-profit operations to \$46.79 per pound for low-profit operations in 1991. For an average 100-sow herd, this difference translates into a profit loss of \$41,000 annually. The range of production costs is even greater among Idaho producers because of the variations in herd size, management ability, and feed costs.
- **Pig death loss, birth to weaning (percentage of number born alive).** Overall herd management, herd health and vaccination program, the farrowing environment, genetic merit, and nutritional status of the herd are all factors influencing the percentage of death loss from birth to weaning. Pre-weaning death loss varies from 6 percent to as high as 20 percent of all pigs born alive. For many producers, it is relatively common to lose two pigs in a litter. Over time, losing two pigs per litter can dramatically impact herd profitability. For example, a recent European study illustrated how an increase of 1.5 pigs weaned per sow per year (.75 pigs per litter) would increase gross

profit by 35 percent. In the United States and Idaho, that number is most likely similar. However, even a 20 percent profit increase could mean as much as \$8,000 per year for a 100-sow herd in an average year. Pre-weaning death loss for producers in the ISU summary varied from 12.7 percent in high-profit operations to 15.5 percent for low-profit operations in 1991. For an average 100-sow herd, this difference translates into a total of 43 more pigs weaned per year.

- **Litters weaned per sow per year.** Litters weaned per sow per year is calculated by dividing the total number of litters produced in a year by the average monthly sow inventory. Reproductive potential, herd health and nutrition, production level, breeding and reproductive management, as well as overall herd management, are factors influencing the number of litters weaned per sow. The number of litters produced per sow per year varies somewhat but is generally low for U.S. producers, ranging from 1.6 to 2.2 litters per sow per year with an average of 1.8 litters produced. There is, however, potential for dramatic increase. For example, a sow with a 114-day gestation and a 21-day lactation that was successfully bred, each parity within 7 days post weaning would produce 2.57 litters per year. Sows weaned at 28 or 35 days would produce 2.45 or 2.34 litters per year respectively. Litters per sow per year for producers in the ISU summary varied from 1.89 for high-profit operations to 1.77 for low-profit operations in 1991. The economic impact of an increase in litters/sow/year varies widely across operations and is difficult to quantify, but should be closely monitored in individual operations. However, decreasing nonproductive sow days, or days per year that a sow is not lactating or gestating, from an average of 100 days per sow to 40 days per sow will save a 100-sow operation more than \$5,000 annually in operating costs alone.
- **Pigs weaned per litter.** Pigs weaned per litter is directly affected by reproductive potential, herd health and nutrition, production level, breeding and reproductive management, overall herd management, and pre-weaning death loss. The average number of pigs weaned per litter varies from as low as 7.0 pigs weaned to as high as 10.5 pigs per litter. Pigs weaned per litter for producers in the ISU summary varied from 8.42 pigs per litter for high-profit operations to 8.00 pigs per litter for low-profit operations in 1991. For an average 100-sow herd, this difference translates into a total of 75 more pigs weaned per year.
- **Pigs weaned per sow per year.** Pigs weaned per sow per year is a combination of pigs weaned per litter and litters per sow per year. Consequently, pigs weaned/

sow/year is directly affected by the same management and production indicators discussed earlier. Pigs weaned/sow/year varies from as low as 12 pigs to as high as 23 - 24 pigs depending on production intensity and operation management. A herd averaging 1.9 litters per sow per year and 8.25 pigs weaned per litter would produce 15.7 pigs per sow per year. Pigs weaned per sow per year for producers in the ISU summary varied from 15.9 pigs per sow for high-profit operations to 14.2 pigs per sow for low-profit operations in 1991. For an average 100-sow herd, this difference translates into a total of 170 more pigs weaned per year. A 100-sow herd weaning 14 pigs per sow per year would wean a total of 1,400 pigs, while the same herd weaning 23 pigs per sow per year would wean a total of 2,300 pigs annually — a difference of 900 pigs.

Enterprise summaries include many other statistics of interest to pork producers, most of which are interpreted individually for specific operations. This kind of summary and analysis can be derived using various record and accounting systems. However, at least an annual (or more frequent) comprehensive enterprise analysis is critical to long-term competitiveness and survival.

Information Collection for Enterprise Analysis

Records and production information needed to develop a comprehensive enterprise analysis are easily collected and include production expenses, revenues, herd and equipment inventories, basic inventory, and production totals. Specific information needed includes:

1. Monthly inventory of sows, boars, litters weaned, and pigs weaned.
2. Monthly death loss inventory for nursing pigs, feeder and finishing pigs, and breeding stock.
3. Beginning and ending swine inventories, including number of animals, weight, and value.
4. Swine housing and equipment inventories, including the value charged to the swine enterprise and the annual depreciation taken on facilities and equipment.
5. Operating expenses, including utilities and fuel, veterinary, hired machine and trucking, value and hours of hired labor, bedding, repairs, and all other relevant operating expenses.
6. Breeding stock sales and purchases.
7. Feeder pig sales and purchases.

8. Market hog sales, including hogs slaughtered for custom use.
9. Hedging or contracting gains or losses.
10. Feed consumed, including pounds and value of grain, supplements, and complete feeds.

Most expense and revenue information can be collected through any of several farm accounting packages, provided that the swine enterprise totals are maintained independently. Production and inventory records need to be recorded separately. Several enterprise analysis programs exist for pork producers. Idaho producers may want to consider the Northwest Swine Enterprise Records Program (NSERP) discussed below.

Northwest Swine Enterprise Records Program

The Northwest Swine Enterprise Record Program (NSERP) is sponsored by the University of Idaho Cooperative Extension System and is designed to help Northwest pork producers maximize profits under a wide range of unique environmental and individual situations. This program is designed for use by feeder pig producers, feeder pig feeders, farrow-to-finish producers, or any combination of these. NSERP has two specific goals: to increase the profitability and competitiveness of individual pork producers in the Northwest, and second, to generate state and regional databases for use in the Northwest.

For participating producers, NSERP will identify management strengths and weaknesses, assist in record keeping and production and financial records analysis, increase operational efficiency, and provide data for future production planning. The NSERP program integrates production and financial information from a herd so that management changes are based on enterprise profitability. The program is relatively simple and straightforward and designed to identify problem areas for review. The state and regional database will be assembled by the UI Cooperative Extension System and used to examine the pork industry in the Northwest; establish local, state, and regional production bench-

marks, and identify topics for educational programming through the UI Cooperative Extension System.

The NSERP program also can assess your resource utilization and evaluate animal efficiency in your herd. For example, the return to capital invested in the swine enterprise is related to:

- the quality as well as quantity of labor and management,
- pig survival, growth rate, and efficiency,
- reproductive efficiency,
- variable production costs for pork produced, and
- the price received for the marketed product.

NSERP enables a pork producer to analyze the major resource inputs as they affect production per sow or crate and net profit.

NSERP is not a complete financial or farm accounting package, nor is it a comprehensive swine management or performance record keeping package. NSERP is an easy-to-use record collection and evaluation program and is designed to evaluate an enterprise based on key profit-related criteria. The program will assist with record collection and supplies recommended forms. The program will also identify management deficiencies and target resource and educational efforts for individual producers. The program will ultimately serve as the base for constructing an integrated enterprise management approach for each producer enrolled. Such an approach to herd management will allow pork producers to maximize their production efficiency and enterprise profitability, by utilizing the individual skills and resources of each team participant.

For more information about NSERP, contact your local Extension office or state livestock specialist.

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