



Cow-Calf Standardized Performance Analysis (SPA)¹

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What is now known as Integrated Resource Management (IRM) began as Integrated Reproductive Management in the early-to-mid 1980s. It was later broadened to recognize the interrelated nature of all production, marketing, and financial decisions. With industry support, the National Cattlemen's Beef Association commissioned Texas A&M University to develop computer software to begin addressing the management information needs of the IRM concept. Standardized Performance Analysis (SPA) was developed with input from National Cattlemen's Association staff and cattle producers. This fact sheet discusses the key components of and the performance statistics generated by cow-calf SPA Software and their application in making decisions within the IRM framework.

What is SPA?

The Standardized Performance Analysis Cow-Calf software requires both financial and production data (Figure 1). The data is used jointly to generate performance measures and reports for management and decision-making, thus integrating production and financial information. SPA is an analytical tool, providing performance and cost reference points for the individual farm or ranch. In addition, if data are submitted to the national database, comparisons can be made with other herds for a given fiscal year.

SPA is not an individual cow performance or selection system, nor is it a record keeping system. Financial and production data may be maintained either in handwritten record systems or in computerized systems. This information can be summarized for use in SPA.

Reasons for Completing a SPA Analysis

Ranchers often get caught up in day-to-day activities and fail to assess the ranch's overall financial or physical

¹ Revised from an earlier version by Damona Doye and Sally Northcutt (Dolezal).

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<http://osuextra.okstate.edu>

conditions and ongoing performance. Managers may even rely on tax returns for information about how the business is doing financially. Tax returns are seldom a reliable indicator of overall financial performance. Disastrous profitability problems can go undetected for years if Schedule F tax forms serve as the sole source of information about ranch financial performance. SPA analysis can assist the farm manager in:

- Determining the profitability of the ranch.
- Identifying areas where the ranch business has excelled, as well as opportunities for improvement.
- Making more informed decisions relative to marketing, investment, and production.
- Formulating goals and monitoring progress toward goals.
- Comparing the ranch investment performance to other alternatives.
- Developing employee incentive programs.
- Monitoring and controlling costs.
- Establishing the competitiveness of the total business, as well as individual enterprises.
- Evaluating present resource use and identifying areas for change.
- Meeting information needs of multiple owners, lenders, and/or advisors so that their knowledge and skills are more effectively used.

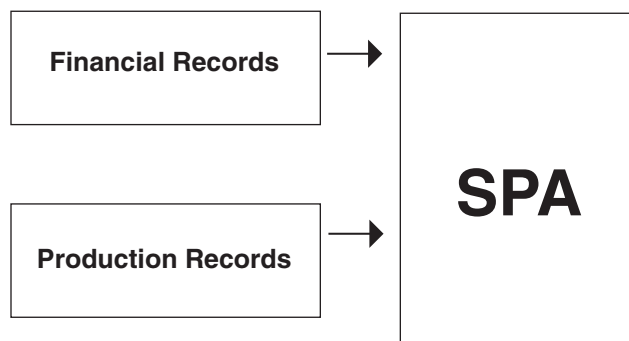


Figure 1. Building Standardized Performance Analyses.

In addition, a great deal of personal satisfaction and reward is gained by the increased understanding of the business. A warning: one year's SPA analysis will not allow a producer to do all of the above. With one SPA analysis, the producer builds a base for better management decisions and improved profitability, and new ideas for record keeping are formed. With several years of analyses, the producer can monitor improvement in financial and production statistics to verify progress made and get a truer picture of the ranch's performance and potential. Accurate financial and production records are essential for the SPA analysis.

Production Information Required

Many producers already collect much of the necessary production information: descriptive, marketing, production, and reproduction data. More specific requirements are outlined below.

Descriptive and Marketing Data

- Descriptive information about the farm or ranch includes details about the size of the herd. The number of breeding cows inventoried at the beginning of the fiscal year includes mature cows as well as heifers of breeding age.
- Beginning and ending dates for the various production seasons are needed: breeding, pregnancy testing (if conducted), calving, and weaning dates. Data for calves weaned in the fiscal year of interest are used in the SPA.
- The number of grazing and raised feed acres (owned and leased land) used by the cow-calf enterprise must be itemized by forage type. The market value of raised feed that is fed during the fiscal year is requested. Also, the quantity of feed that is fed to breeding cows during the fiscal year is needed.
- Weaned calf production and market values are entered for all weaned calves including market calves, retained ownership calves, and replacements. A value is assigned based on current market price and net pay weight.
- Value of cull sales (cows and bulls) are entered for the year.

Production and Reproduction Data

- The key information needed for this section is the number of females exposed for breeding. Number of exposed females is adjusted for various transfers of females throughout the production cycle. The adjusted number of females exposed is used for many of the performance measures.
- Cow and calf death loss and heifer retention information is needed.
- A count of all calves weaned (steers, heifers, bulls) is required.
- Pregnancy testing data and the within-year calving distribution may be entered as optional information.

Reproduction performance measures based on exposed females include: calving percentage, calf death loss, calf crop or weaning percentage, calf death loss based on calves born, pregnancy percentages, pregnancy loss percentage, female replacement rate percentage, and calving distribution.

Production performance measures include: average age at weaning (months), actual weaning weights averaged by steers/bulls, and heifers, and pounds weaned per exposed female.

In addition, the grazing and raised feed acres and feed fed measures are summarized.

Accurate cattle inventory records for the fiscal year analyzed are essential. Inventory items are necessary for the breeding, pregnancy testing (optional), calving, and weaning sections of SPA.

Financial Information Required

Financial data is required in certain areas: descriptive, production, marketing, opportunity cost, and financial statements. The financial information required conforms with recommendations of the Farm Financial Standards Council. Descriptive data identifies the farm, its geographic location, enterprises included in the operation, and the fiscal year for which the analysis is being conducted. Marketing data documents predominant methods for selling and pricing livestock, for example, cash price at auction or contract price with feedlot. The opportunity cost section is used in estimating economic costs associated with non-real estate equity where the opportunity cost is the value of the resource in its next best alternative use, for example, the three-month-treasury bill rate.

Most of the detailed information required in SPA comes from ranch financial statements. Two balance sheets listing all that is owned and all that is owed are required, one for the beginning and one for the end of the accounting period. Both cost and market values are needed for all assets listed in the balance sheet. The cost basis of assets is the book value (original cost minus accumulated depreciation); market value is the value of the asset at the time the balance sheet is developed. An accrual income statement is also needed. This can be developed by using a cash flow statement and accrual adjustment information, including gains and losses on sales of breeding livestock (purchased and raised), changes in inventories (livestock, feed, etc.), updated depreciation schedules (machinery, livestock, buildings and improvements), cattle sales and transfers summary for the fiscal year, loan repayment schedule (principal and interest payments), and IRS tax forms. Both the balance sheet and the income statement entries require the user to allocate the appropriate percentage of each item to the cow-calf enterprise.

The most important attribute of all data entered is that it be as accurate and complete as possible. Any assumptions made should be documented so that future analyses can be compared appropriately.

Note: Other OSU publications may be helpful in developing financial statements and accumulating the data needed for a SPA-F analysis. For information on developing financial statements, see OSU Extension Fact Sheets F-571, "Developing a Cash Flow Plan" and F-572, "Developing a Balance Sheet." For information on financial record keeping alternatives, see OSU Extension Fact Sheet F-302, "Information Systems for Oklahoma Farmers." For information on how to maintain farm financial records with Quicken, a commercial record keeping software program for home or business, contact the Department of Agricultural Economics, Oklahoma State University, Stillwater, OK 74078-0505 or see <http://www.agecon.okstate.edu/quicken>

SPA Results

The summary reports generated by SPA include a wealth of information. The summary reports include measures of both financial and economic performance with measures expressed in a variety of ways, for example, per breeding cow or per hundredweight of calf weaned. Some sample statistics generated on a per breeding cow basis include:

- Investment per breeding cow.
- Debt per breeding cow.

Sample statistics calculated on both a per breeding cow and per hundredweight of calf weaned include:

- Total raised/purchased feed cost.
- Gross cow-calf enterprise accrual revenue.
- Total cow-calf enterprise operating cost.
- Total financing cost and economic return.
- Net income.
- Percent return on enterprise assets (ROA).
- Unit cost of production or economic break-even price.
- Rate of economic return on owned real estate investment.

Table 1 contains selected cow-calf SPA results for a sample herd. Production and financial measures are calculated using standardized guidelines to assist producers in making comparisons over time.

The SPA measures allow producers to document existing practices and their impact on performance. The rigor associated with completing an analysis may

result in an overhaul of record keeping practices, and result in greater discipline with respect to keeping those records. Because regional averages for statistics in reports are available, producers will have a yardstick by which to measure their competitiveness.

To Complete a SPA Analysis...

The initial SPA analysis may require some time and effort. Collecting the production and financial data is usually time consuming the first time an analysis is completed if records are in poor shape. However, when committed to improving management practices and interested in exploring SPA capabilities further, there are several options:

1. Producers familiar with production and financial standards and who are computer users may order the SPA software and manual from Texas A&M and complete their own analysis (<http://agecoext.tamu.edu/spa>)
2. Producers who would like assistance in completing an SPA may contact the local Extension educator-agriculture, area agricultural economics specialist, or Damona Doye, OSU Extension Economist, at 405-744-9813 or ddoye@okstate.edu to express interest in a SPA workshop or individual assistance. Workshops are conducted upon request for five or more interested producers in an area.

Summary and Conclusions

SPA is an IRM tool for business-minded producers who wish to improve production and financial efficiency and more effectively use their resources. SPA uses existing data to produce standardized performance information for management decisions. It does not replace the need for good financial and production records. Completing a SPA often points out deficiencies in a ranch's existing management information system. SPA will improve competitiveness of an individual operation if the manager uses the information to change the production and management system.

References

Farm Financial Standards Council:
www.ffsc.org

Texas A&M SPA Website:
<http://agecoext.tamu.edu/spa>

Oklahoma State SPA Website:
<http://agecon.okstate.edu/spa/spa.htm>

Table 1. Selected Cow-Calf SPA Results (sample herd).

Reproduction Performance Based on Exposed Females:		Production Performance:	
		<u>Actual Weaning Weights</u>	<u>Lbs/hd</u>
Calving Percentage	85.8%	Steers and Bulls	541
Calf Death Loss	3.3%	Heifers	504
Calf Crop or Weaning Percentage	82.7%	Average Weaning Weight	525
Pounds Weaned per Exposed Female		435	

Investment per Breeding Cow (Average Asset Values in \$ per head)

	<u>Cost Basis</u>	<u>Market Value</u>
Total Current Assets	\$118	\$118
Non-Current Assets		
Livestock	\$897	\$897
Machinery & Equipment	\$515	\$370
Real Estate Land and Improvements	\$315	\$2,592
Other Non-Current Assets	\$125	\$125
Total Investment Per Breeding Cow	\$1,253	\$5,047
Debt Per Breeding Cow	\$789	\$789
Equity to Asset or Percent Equity (%)	37.0%	84.4%

Financial Performance

	<u>\$/cow</u>	<u>\$/cwt¹</u>
Total Raised/Purchased Feed Cost	\$158	\$44
Total Grazing Cost	\$55	\$15
Total Cost ²	\$412	\$95
Net Income ³	-\$21	-\$7

**Unit Cost of Weaned Calf Production
(Breakeven Economic Cost)**

Total Calf Cost (Non-Calf Revenue Adj.)	\$469	\$108
Percent Return on Enterprise Assets (ROA)		
Cost Basis	-1.53%	
Market Value	-0.04%	

1 Dollars per hundredweight of weaned calves.

2 These are pre-tax costs, thus they do not include income tax payments.

3 The net income is pre-tax income, but is not equal to IRS taxable income.

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