

Cow/Calf Session II

Moderator— Eddie Hamilton

Standardized Performance Analysis Update

James M. McGrann, PhD

Dept. of Agricultural Economics

Texas A&M University

College Station, TX 77843-2124

The Standardized Performance Analysis (SPA) methodology, guidelines, software, and education materials for beef cattle was developed out of an initiative of the National Cattlemen's Association (NCA) producers as part of the Integrated Resource Management (IRM) effort. The SPA committees involve producers and Extension specialists, primarily animal scientists, veterinarians, and agricultural economist. The work has been funded by an Extension Service-USDA grant, by Merck and Co. through NCA, American Beef Breeds Council, Beef Improvement Federation, and a major commitment by Texas A&M University. The Department of Agricultural Economics at Texas A&M University has played a major role in the preparation of education materials, software development, testing, training, and the early data base development. Cattle-Fax has recently taken over the SPA data base maintenance. The National Animal Health Monitoring System (NAHMS) funded a project in four states, Alabama, Colorado, Missouri, and Texas, that included a random sample of producers completing the SPA analysis. This provided an opportunity to use the tool with a representative group and provided data for the national SPA data base. IRM programs have been initiated in a number of states and the results of this effort are discussed later in this paper. NCA continues to play a major role in coordinating SPA development, SPA regional training, promotion, and the organization of activities, such as the Cattlemen's College which has included SPA training programs.

The SPA effort was initiated with the cow-calf enterprise. Since its development, SPA has been expanded to include seedstock and stocker/feeder enterprises. Field testing of software and methodology continues for seedstock and stocker/feeder enterprises. Final approval from SPA committees the IRM National Coordinating Committee, and NCA membership will be completed in

January of 1995. Texas A&M University continues to support software and the distribution of education materials nationwide. Available products and an order form is listed in Appendix A. NCA continues to coordinate the certification of software after it is reviewed and judged to be consistent with the SPA guidelines by a review committee. Several of the national, leading individual cow performance record systems now include reports of SPA reproduction and production measures.

The final activity under development for SPA is the SPA consultant certification program through NCA to help meet the needs of producer implementation support. It is viewed that veterinarians would have an interest in this activity so this will be discussed later in this paper. First, a few words on the SPA methodology and results from cow-calf SPA.

SPA Methodology

SPA is an integrated production and financial analysis methodology that measures beef cattle enterprise performance. The methodology is reported in the SPA guidelines, see Appendix A. The focus is on the standardization of calculations and reporting procedures to enable accurate comparative analysis. SPA is a historical analysis measuring of what actual took place. Cost of production and the return on assets (ROA) are key financial performance measures. Cattle inventories and accounting data developed for tax purposes are the primary data required for SPA. The SPA methodology conforms to the Farm Financial Standards Guidelines in preparation of total farm/ranch financial statements (balance sheet and accrual adjusted income statement). Preparation of the financial information is normally the largest challenge in SPA implementation. The lack of producers' financial knowledge and limited financial analysis skills means they spend little time to this as-

pect of management. Producers do have the necessary financial data to complete SPA but need assistance from their accountant or a consultant who is frequently required to develop the financial statements. SPA does require movements beyond tax accounting to preparing the financial statements for business management purposes. The same reporting is an increasing requirement by lenders from farm or ranch borrowers. After the SPA user becomes familiar with the financial methodology, the time required to complete the financial analysis is less than the production analysis.

Production performance for the cow-calf enterprise is based on exposed females and normally requires some inventory reconciliation efforts the first time around. Stocker and feeder cattle require accurate inventories and records on movements in and out of the enterprise. Most required seedstock data is required for animals registration.

Users of SPA have found that producers collect a great deal of production and financial data that goes unused. Poor analytical skills and not taking time to study the numbers is common. Great opportunities exist to use SPA in almost any size operation to learn what is going on and find ways to improve the operation. Having benchmark information from other farms or ranches provided through the SPA data base is a real asset in advising producers on areas for change that meet their goals.

SPA - A Veterinarian Consultant Tool

You will really know the operation by the time you work the farm or ranch through SPA. Using SPA has the same requirements of any analytical tool (1) the user must know how to use the tool and interpret the results so positive changes result from this effort, and (2) there has to be a willing producer to devote the time to do the analysis, pay for the analysis and implementation change based on the results and interpretations. The consultant must motivate producers to change. The first change, in many cases, is the producer's willingness to become a better information user. After completing SPA and using the information, the accuracy of the data will improve. Few cattle operations have focused on cost control. The SPA analysis shows that there is an area of opportunity by clearly reporting high cost areas as costs are expressed on a breeding cow basis. Most cattle enterprises have some areas where change can be made to reduce cost. Since feed and grazing costs account for around 50% of total costs for most cow-calf operations, opportunities normally exist for reducing costs in these areas.

Measuring performance is required to manage performance and that is where it all begins with SPA. It is difficult to plan for the future without knowing where

the business is coming from or its current performance. After changes are made it is important to measure results in light of the business goals. Veterinarians can show their impact on the business profitability if they complete the annual SPA and do the historical comparative analysis. The fact that the contributions that veterinarians make to the profitability of the livestock enterprise is seldom quantified is justification for using SPA. SPA results clearly indicate that there are opportunities for profitable changes.

Cow-Calf SPA Results

Participation in the National Cattlemen's Association's Standardized Performance Analysis (SPA) is growing slowly. The 1991-92 results identify great differences between producers. This article summarizes the cow-calf SPA data for 206 herds from 20 states looking at the net financial income by quartiles (Table 1) and by size of herds.

In reviewing SPA results, it is important to understand the difference between financial costs and returns and economic costs and returns. Financial costs are taken from the farm or ranch accrual adjusted financial statements (accrual adjustments to cash statements are made for change in inventories, accounts payable and receivable, prepaid expenses, and non-cash revenue). These are pre-tax accounting costs and do not have an opportunity cost for owned land, raised feed, or capital. Net income is calculated after allowances for family living withdrawals equivalent to payments that would be necessary to hire a non-family member to do the same work. Income is not equal to IRS taxable income.

Table 1. Cow-Calf SPA Performance Measures Ranked By Net Income Quartiles

SPA Performance Measure	Quartiles			
	Top 25 %	Second	Third	Low 25 %
Calf Crop or Weaning Percentage	85	84	85	82
Average Weaning Weight	534	502	514	492
Lbs. Weaned per Exposed Female	458	420	430	406
Investment per Breeding Cow Cost Basis	\$2,018	\$1,784	\$2,002	\$2,756
Return on Assets At Cost (%)	14.19	9.18	4.62	-4.75
Investment per Breeding Cow Market Value	\$3,857	\$3,669	\$2,800	\$3,770
Return on Assets At Market Value (%)	7.76	4.96	3.16	-3.32
Financial Raised and Purchased Feed Cost (\$/cow)	\$65.35	\$98.92	\$104.20	\$148.76
Financial Grazing Cost (\$/cow)	64.06	67.99	77.61	114.44
Total Feed and Grazing Cost (\$/cow)	\$129.41	\$165.92	\$181.81	\$263.20
Total Financial Cost (\$/cow)	304.66	346.61	395.24	516.04
Feed and Grazing - % of Total Cost (%)	42	48	46	51
Net Income (\$/cow)				
Financial	186.50	95.59	29.11	-110.69
Economic	77.12	-43.12	-55.86	-209.28
Cost of Weaned Calf (\$/Cwt.)				
Financial	50.95	67.99	81.86	119.50
Economic	73.69	100.33	102.69	145.51
Distribution of Herd Size				
Average No. of Cows	1655	1059	824	443
Herds With Less Than 100 Cows	7	9	13	20
Herds With 100 to 199 Cows	6	9	4	8
Herds With 200 to 499 Cows	14	12	18	12
Herds With 500 Cows or More	25	22	17	10

When the financial net income is negative this means that producers are actually losing equity by stay-

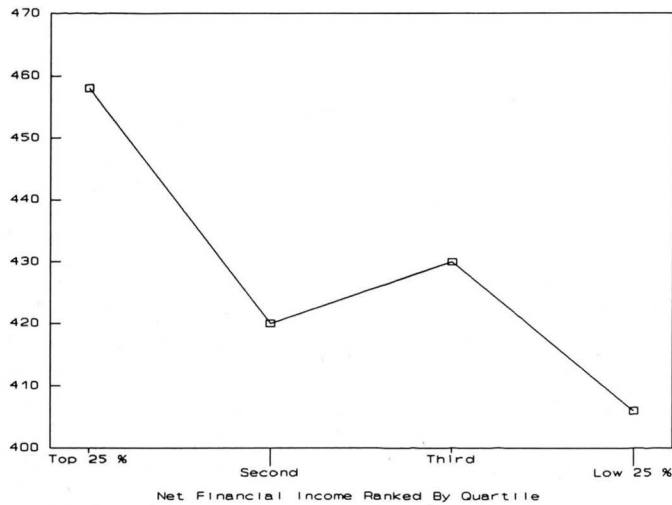
ing in the cow-calf business. Producers either subsidize the cow-calf enterprise with other sources of income or actually use their equity to support the enterprise.

Economic costs include all financial costs plus an opportunity cost for owned land (cash lease rate), raised feed (net market value), and capital (three month treasury bill rates). When economic net returns are negative, it means that owned resources are not receiving their opportunity value, e.g., land in not earning its cash lease rate.

Any size herd can be profitable, it is just more difficult for smaller herds to control costs and benefit from economies of size. Table 1 shows the SPA measures for the 206 herds ranked in net financial income quartiles. The top 25 percent are the average values for the herds in the highest net financial income (pre-tax) per breeding cow quartile. The number of herds by size demonstrates that any size herd can be profitable. However, 50 percent of the highest income herds have 500 cows or more. Forty percent of the herds in the low profit quartile have 100 cows or less.

Key factors that determine net income are productivity, measured in pounds weaned per exposed female (Table and Figure 1) (a combination of weaning percentage and average weaning weight). Figure 2 shows the inverse relationship between raised/purchased feed and grazing weight). Figure 2 shows the inverse relationship between raised/purchased feed and grazing cost and financial net income (the higher the feed and grazing cost the lower the net income). This relationship emphasizes the importance of managing feed and grazing costs.

Figure 1. Pounds Weaned per Exposed Female



As can be observed in Table 1 and Figure 3, the net income range is nearly \$300 (\$187 to -\$111). The corresponding difference in financial cost per breeding cow is over \$200 (\$305 vs. \$516). The financial cost of weaned calves ranges from \$51 to \$120 per cwt. from the top to bottom quartile. The high cost herds being

Figure 2. Raised/Purchased Feed Cost, Grazing Cost, and Net Income

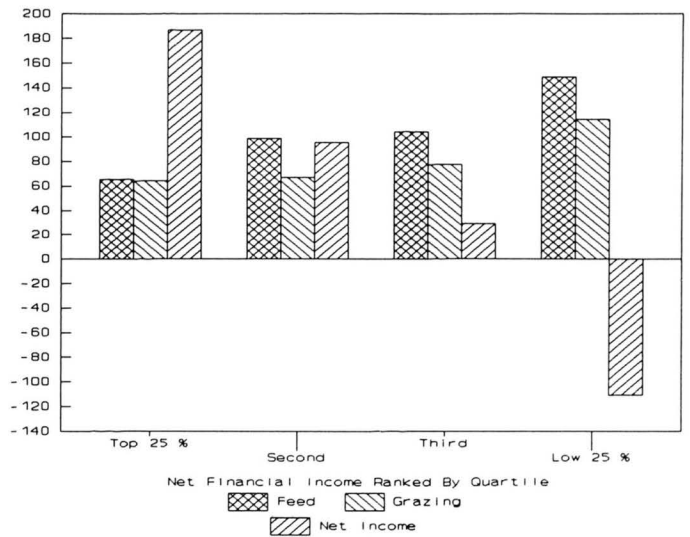
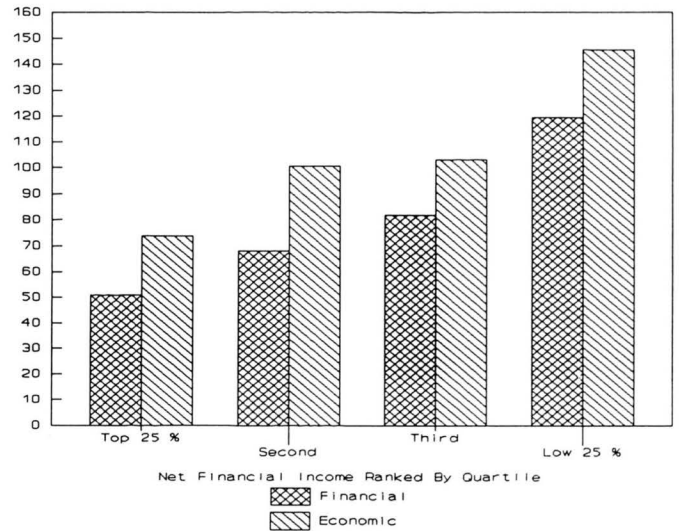


Figure 3. Cost of Weaned Calf Production (\$/cwt)



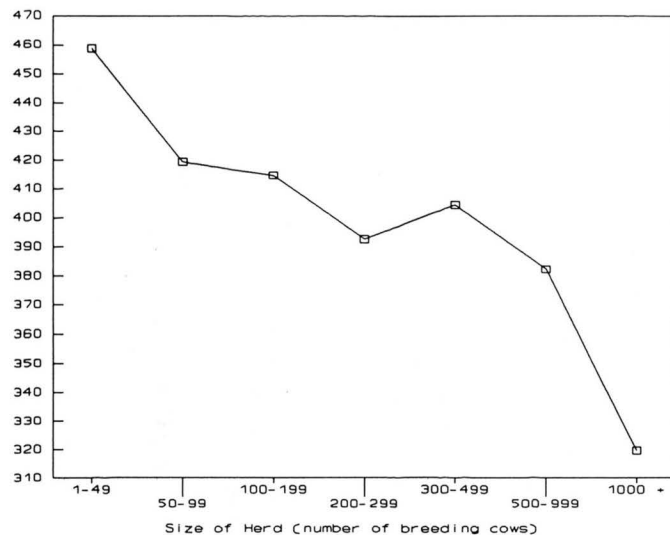
more than twice the low cost herds. A similar relationship exists for economic cost where the opportunity cost of land and capital is accounted for in the cost calculations. The negative net economic return would indicate the resources used in cow-calf production could be more profitably invested in the alternative use or that the opportunity cost of land and capital are too high for the enterprise to generate a positive economic return. A negative financial return means producers are using equity or outside sources of income to stay in cow-calf production.

The wide range of performance is a signal that there are many opportunities for change and that high cost producers can lower cost by following practices used by low cost producer. A good evaluation of current and past performance can be the basis for future change.

Economies of Size

It is well accepted that there are economies of size in the cow-calf sector. Table 2 summarizes the national SPA results for 206 herds from 20 states. These economies are illustrated in returns on assets, net income, and costs of production. The very small herds, on the average, are losing equity. Larger herds definitely have a competitive advantage. Figure 4 illustrates how the cost of production decreases with size. The corresponding Figure 5 shows how net income is associated with the reduced cost by size. The largest herds do not have the highest net income although they have the lowest cost because the productivity (weaned calf per exposed female 452 versus 394 pounds) is greater in the 500-999 group, as well as the calf value. Herds with 500-999 cows, based on the limited data, are the most competitive. These herds represent more full time units that have a business and higher performance orientation.

Figure 4. Financial Cost of Production (\$/cow)



Limitations

The limited number of herds in the SPA data base reduces the opportunities to draw statistically valid conclusions from the data. The initial results do point out, however, that there are competitive production and management systems in every size group and environment. As the number of SPA participants increases, more conclusive results can be generated. Through the use of the SPA analysis to identify areas for change, producers can definitely improve their competitive position. Frequently, accounting and production data is collected but not organized in a meaningful way for informed decision making. SPA helps producers more effectively transform data into meaningful information in order to identify areas for change. Implementation of changes will lead to lower cost of production.

Figure 5. Net Financial Income (\$/cow)

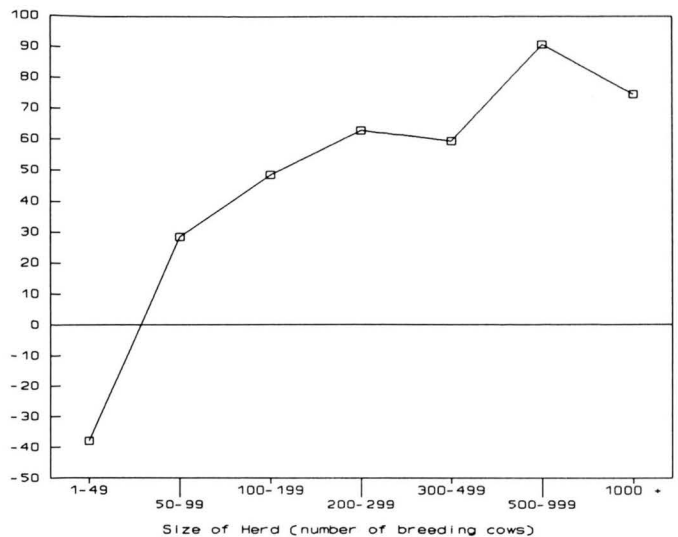


Table 2. Select Cow-Calf SPA National Results 1991-92 By Herd Size

Head	Size of Herd (Breeding Cows)						
	1-49	50-99	100-199	200-299	300-499	500-999	1000+
Number of Herds	21	28	27	30	26	27	47
Performance Measures							
Calf Crop or Weaning Percentage	86.23	81.22	84.53	83.67	86.94	84.39	81.74
Avg. Weaning Wt. (lbs.)	487	509	528	532	510	535	485
Lbs. Weaned per Exposed Female	429	417	449	444	440	452	394
Return on Assets - at Cost (%)	2.77	3.86	5.72	5.45	4.62	9.04	7.87
Return on Assets - at Market Value (%)	0.85	2.70	2.89	4.39	2.70	4.88	3.29
Financial Raised/Purchased Feed Cost (\$/cow)	\$138.14	\$136.13	\$146.37	\$102.19	\$113.05	\$60.91	\$65.62
Financial Grazing Cost (\$/cow)	\$106.37	\$97.11	\$81.34	\$76.28	\$73.20	\$85.89	\$61.98
Total Feed and Grazing Cost (\$/cow)	\$244.51	\$233.24	\$227.71	\$178.47	\$186.25	\$146.80	\$127.60
Total Financial Cost (\$/cow)	\$458.89	\$419.34	\$414.72	\$392.70	\$404.57	\$382.39	\$319.59
Feed and Grazing - % of Total Cost (%)	53	56	55	45	46	38	40
Financial Net Income (\$/cow)	-\$38.02	\$28.21	\$48.23	\$62.64	\$59.11	\$90.61	\$74.30
Financial Cost of Production (\$/cwt)	\$99.74	\$82.64	\$81.29	\$77.64	\$80.70	\$68.98	\$74.96
Economic Net Income (\$/cow)*	-\$118.18	-\$102.82	-\$65.85	-\$52.65	-\$51.93	-\$11.66	-\$25.91
Economic Cost of Production (\$/cwt)*	\$120.84	\$113.48	\$106.41	\$103.01	106.21	\$91.75	\$101.00

*Includes an opportunity cost for land (cash equivalent return) and raised feed as well as a three month treasury bill rate for equity capital.

SPA - A Business Opportunity

For veterinarians to make SPA a profitable business service activity, they must (1) become knowledgeable users of the tool, especially the finance and IRM or total system analysis approach, (2) market themselves having expertise beyond their narrow producer perception of veterinarians only dealing with individual animal death and disease held by most producer clientele, and (3) market the service to producers willing to pay for a broad consulting approach. For most operations, the SPA analysis can be completed in 4-8 hours by a SPA consultant that has had the experience of completing at least 10 analysis. The first few SPA analysis will take more time. Getting the accountant to prepare the farm or ranch total financial statements will really help reduce the required time. When producers are paying for the analysis they will spend more time organizing data

which will reduce the consultant's time. Going through the SPA process will normally generate opportunities for follow-ups that will generate added consultant income.

Most beef cattle producers can afford to spend \$300-1,000 to complete the SPA analysis. It is a profitable investment but convincing them to initially make a commitment is difficult. Financial and production performance analysis is a very neglected area in the beef industry. This neglect extends beyond the producer as financial statement preparation and analysis are seldom addressed by production specialists.

Veterinarians can serve as central organizers of SPA and IRM activities. A full service clinic approach maybe necessary to have an effective program. Perhaps a clinic cannot hire a full time managerial accountant but could form linkages to call on a professional to assist producers that they work with. Veterinarians have the potential to be the "organizer and leader" of the private consultants. Reduced funding and the direction of extension programming means that the public sector will no longer be a competitor with free services to commercial agriculture in most states. The few veterinarians that wish to broaden their knowledge and services certainly have an area of opportunity where there is little competition. For further ideas on the production management approach readers are advised to contact the Nebraska Great Plains Veterinarian Education Center or the U.S. Meat Animal Research Center at Clay Center, Nebraska.

Profit is Key

To be a successful farm or ranch management consultant you must motivate change that will increase profits. The producers' added return must be in excess of consultation costs. The producer must measure and be convinced that your consultation is paying. Using the Integrated Resource Management (IRM) or whole farm or ranch systems approach increases the probability that a consultant can have a profitable impact on the business. Marketing, financial management, and effective use of information resources in decision making and measuring performance are areas of opportunity for change in the beef cattle sector. Without measuring performance, through analytical tools like SPA, it is very difficult to expect management for performance and truly measure a consultant's impact.

Sensitivity of Financial Information

One of the barriers to improve financial management and the use of tools like SPA is the sensitivity owners have in revealing their financial position and performance. Sensitivity is a product of many produc-

ers' uncertainty of what the financial statement really says. This also demonstrates their lack of producer financial knowledge. Financial statements truly reflect management performance, good or bad, and producers are worried about how they will be judged. Of course, some do not want to face reality and are not candidates for SPA. The only way the consultant can overcome this barrier is to first be extremely sensitive to the producers' feelings to insure them of the confidentiality of all financial data. The consultant must build the producer's confidence that the information is protected and he/she keeps the information to themselves. Taking the time to educate producers on what the financial information means is valuable. Building a communication bridge between producers, lenders, and accountants is most important. Consultants are severely restricted in using the IRM approach without financial information. Participating producers must understand this. Once the sensitivity barrier is broken, financial statement preparation and analysis is really not that time consuming. Most of the required data is generated for tax reporting. Increasingly lenders will require similar information for the documentation of financial position and performance.

Although many production specialists have a real mental block towards learning financial analysis and hate to address the financial issues with producers, this is a tremendous pay-off area of knowledge to acquire. Anyone working with the beef cattle industry needs to have some knowledge of finance or a colleague he/she can call on. This is especially true as the industry moves into the downward price cycle and continues to face a declining market share. To have a positive impact in the beef cattle industry, education and consulting efforts cannot continue to deny financial reality. They need to address financial issues to establish credibility with producers who look at beef cattle production as a business activity.

Delivering SPA

If SPA is to reach its potential on a national level there needs to be a "SPA delivery system" developed in the private sector. There is an inadequate professional capacity in the Extension Service to meet producers education and individual consultations needs. Private sector accountants, veterinarians, and management and financial consultants are the viable deliverers of SPA and IRM type efforts. Training in finance and economics is required for veterinarians to be effective SPA consultants. Increased knowledge of finance should have a positive carryover in their practice business management, and evaluation of services provided to producers.

NCA, through IRM efforts, is organizing a national SPA consultant certification program. This program will involve 20 hours of classroom training using case studies, and learning how to operate SPA software. In addition, the participant will complete 10 SPA analysis operations with support from the course sponsors. Labeled as the 20-10 project, this national effort, coordinated through NCA, will likely be initiated in 1995. After consultants are certified by NCA they will be promoted by NCA. Dan Kniffen, at the NCA headquarters, will facilitate the coordination of the SPA consultant certification effort. His phone number is (303) 694-0305.

Summary

SPA represents a producer driven effort that provides integrated performance information which is badly needed in the beef cattle sector. Veterinarians can be very important participants in the delivery of the SPA tool and carrying the IRM approach forward. SPA use and participation in the national SPA data base will grow slowly as it requires new knowledge and skills that producers often wish to ignore. Producers resist paying for assistance in financial management. Progressive producers will want to advance their knowledge and use tools and information to become more competitive. Through a major effort, tools and educational materials are now available that enable veterinarians to learn SPA and provide a new service for interested producers. The challenge is to motivate producers' participation and have professionals that can respond in a way so it is profitable to both the producers and the providers of the service.

Beef Cattle
Standardized Performance Analysis (SPA)
Educational Materials and Software

SPA Educational Materials and Software	Cost Per Item	Total
NCA-IRM-SPA Guidelines:		
Cow-Calf	\$15	_____
Stocker/Feeder	\$15	_____
Seedstock	\$15	_____
Stocker/Feeder SPA Production and Financial Analysis Software and SPA Stocker/Feeder Handbook		
Stocker Grazing	\$150	_____
Feeder Confinement		
Finishing - Farmer Feeder		
Finishing - Custom Fed		
Seedstock SPA Production and Financial Analysis Software (Seedstock Beef Cattle SPA Handbook included)		
Cow-Calf	\$150	_____
Replacement Heifer		
Sales Bull		
Commercial Cow-Calf SPA Production and Financial Analysis Software and Cow-Calf SPA Handbook		
.....	\$100	_____
SPA Workbook for the Cow-Calf Enterprise	\$25	_____
FINYEAR -- Farm/Ranch Financial Statement Preparation Package	\$100	_____
	TOTAL:	\$ _____

Written Materials and Software Available to Support SPA use:

- **NCA-IRM-SPA Guidelines for Production & Performance Analysis for the Cow-Calf, Stocker/Feeder & Seedstock Enterprises**
These are documents explaining in detail the computation, interpretation, and limitations of each SPA performance measure chosen by the NCA-SPA subcommittees for each of the three beef cattle SPA enterprises.
- **SPA Software and SPA Handbook**
SPA software generates the SPA reports including (1) description, (2) production, (3) grazing and (4) the integrated financial and production performance information including among other measures cost of production and enterprise return on assets (ROA). These are stand alone programs that run under the Microsoft MS-DOS operating system. The SPA Handbook is also included for each enterprise.
- **NCA-IRM-SPA Workbook for the Cow-Calf Enterprise**
A loose-leaf notebook that facilitates the recording of the cattle and feed use inventory information and schedules for the preparation of the financial statements. The workbook includes the NCA-IRM-SPA Cow-Calf Guidelines.
- **FINYEAR (Farm/Ranch Financial Statement Preparation software)**
For producers without financial statements this software will generate the balance sheets, accrual income statement and statement of cash flows.

SPA Software Support Policy

The Texas Agricultural Extension Service will maintain and support SPA Handbooks and software until products are available in the private sector to fulfill capabilities of the software and educational materials. When updates of software are made there will be a revision distribution cost of \$15 per software item.

The above policy pertains to all educational institutions and the Cooperative Extension Service. Extension Service and educational institutions who will use software for educational activities will be required to pay 50% of the listed costs. For a state Extension Service that wishes to take over the distribution and support requirements, materials can be provided to facilitate this activity. Written material will be provided in WordPerfect™ format. Contact James M. McGrann at (409) 845-8012 for further information.

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