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# Calculating Cost of Production; Livestock: 1991 Revisisted and 1992 Forecast

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# ECONOMICS COMMENTATOR

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## Calculating Cost of Production


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Introduction

Farm managers of today face many alternative management strategies to meet their goals. Goals of individual farm managers can vary tremendously and can be either short, intermediate or long term in nature. Profit is assumed to be the overriding goal of most farm managers. However, factors such as individual and family goals, and environmental considerations may be in direct conflict with profit maximizing options available to a particular farm manager.

Most farm management decisions are made under much risk and uncertainty. Some of the risk and uncertainty can be eliminated by keeping records of historical happenings and using those records to create budgets that can be a guide to determine future actions. Accurate farm records and future projections require that accurate and up to date information of each farm enterprise be kept. Crop enterprise budgets are just one component of the many necessary for farm planning and control. This report contains a brief description of how and why crop budgets are important to farm managers and a short discussion of computer software that can be used to create enterprise and whole farm budgets.

Farm Records - Actuals vs. Projections

Farm records are defined in this newsletter to include any written documentation of the farm operation kept on the farm. Farm records can be broken down into several subsets that for example may include: 1) crop enterprise records, 2) livestock enterprise records, 3) pesticide records, and 4) financial statements.

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## Livestock -- 1991 Revisisted and 1992 Forecast


by

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1991 - The First Half -- Cattle and hog producers enjoyed a relatively profitable first half of 1991. Sheep producers did not share in that good fortune.

Barrow and gilt prices were between $50 and $55 for most of the first eight months of 1991. Lower supplies, high beef prices and a stable economy helped hold prices at levels that were profitable to most producers. Feeder pig producers also benefited, as prices often were in the $60s for 40-50 pounders.

Fed cattle prices were in the upper $70's to the low $80's for most of the first half of 1991. Prices were high enough to allow feedlot operators to earn a profit in spite of high prices paid for feeder cattle. The economy, somewhat lower fed cattle supplies and good demand all contributed.

Feeder cattle prices were helped by reduced supplies, low grain (especially wheat) prices, and high fed cattle prices. The $100-120 range for calves and the $90's for yearlings were prices often heard. Generally, adequate rainfall in many areas of the state also helped.

Sheep and lamb producers didn't enjoy the above high prices. Lamb prices in the low $50's were the rule.

1991 - The Second Half -- The second half of 1991 was not nearly as pleasant as the first half. Prices were lower for most livestock products.

Barrow and gilt prices started to tumble in September and spend most of the rest of the year below $40. While prices were close to covering cash costs, they

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Farm records, when properly structured and completed, provide a coordinated picture of the financial progress and changing financial structure of a farm operation. Cost of production records need to be developed to provide the foundation for financial statements. Financial statements are necessary to determine whole farm financial feasibility of changes in a particular enterprise of adopting alternative management practices.

Projections are an integral part of farm management. Projections form the basis for cash flow planning, long-range financial planning, enterprise selection, and market strategies. Projections are important because they represent what is believed will happen in the upcoming production year. They are the foundation for any decisions made within a period of time. Thus, it is paramount that projections are based on the most complete, up-to-date information available. That information can be either actual historical farm data or estimated data such as is available from the South Dakota Extension Service or generated by individuals by methods described in this newsletter.

In a risk-free world, projections at the beginning of the year would be realized at the end of the year. However, changing government programs, the weather, the biological nature of farming, and volatile prices indicate projections are rarely equal to actual yields, gains or profits at year-end. **Projections help plan** a production cycle or fiscal year while **actuals** provide the tools to **analyze the past** cycle or year and determine where and/or how reality deviated from the plan. Without both projections and actuals no basis is available for measuring success and devising strategies for continued growth and prosperity.

Thus, the role of budgeting and projections should not be de-emphasized. Farm operators can benefit from completing projections for the operation. Even if the financial situation of the operation does not show much change, it would be easier to understand or explain to others what the current situation is, where the operation is going, and what would be necessary if these projections are brought into reality. Projections and actuals work together to derive the best "road map" for a farm operation.

## Budget Generators and Spreadsheets

Farmers as well as agri-business need a method of being able to compare and evaluate new products or alternative cultural practices with those that are presently available or used. Computer software is available to assist in calculating these projected costs of production. CROPBUDGET, a microcomputer based budget generator, is an excellent, but not the only tool for this purpose. For some farm-level applications a spreadsheet may be the desired alternative.

A budget generator, such as CROPBUDGET, contains detailed engineering research data information used by the program to calculate the costs of owning and operating equipment. Much of this information is hard for producers to come by. The CROPBUDGET data base presently contains about 95 farm implements and machines with room for up to 150. The data base contains information such as if machine is self-propelled or pull-type, gas or diesel, the field efficiency, repair costs, speed used, depreciation, and other similar pertinent information. This information, plus other information supplied by the individual user such as horsepower, width, and ownership, is used by CROPBUDGET **internally** to generate a crop budget (Peterson 1991).

CROPBUDGET is a stand alone program designed to help farmers and others estimate future costs of crop production. The program was designed to be easy to learn and use, as well as to produce output that is detailed and understandable. CROPBUDGET is ideally suited for studying the effects of changing farm machinery or tillage practices for a particular crop enterprise and can be used to evaluate the fairness of crop share leases. The program also can serve as a control instrument. By estimating what costs should be, actual or historical production costs that are extreme can be identified and perhaps controlled. CROPBUDGET analyzes the operational costs of machinery and any custom operations included in producing a crop. Output also includes a listing of the additional purchased inputs and an itemized analysis of cash costs and returns per acre (Peterson 1991).

A spreadsheet template may be more applicable for those who wish to use last

year's costs as a guide, making no changes in production technology. Spreadsheets can be very detailed, but generally do not take an engineering approach to calculating costs for basic data, rather relying on the user estimates. A spreadsheet generally does not report detailed costs for those interested in the assumptions of each crop enterprise. A primary strength of the spreadsheet over a budget generator is that because it is a spreadsheet, it can be easily modified or customized for other purposes, such as whole farm analysis. Modifications may not be an easy task for those not knowledgeable of spreadsheets operations.

CROPBUDGET and the spreadsheet template have potentially different applications (users) depending on whether one is involved in agricultural production, research, or other endeavors. CROPBUDGET is probably of greater use to those indi-viduals who are examining the effects on profitability due to changes in cultural or tillage practices. The spreadsheet template may have greater potential use for those not making significant changes in their operation or needing the detailed budget provided by CROPBUDGET.

Ease of use between CROPBUDGET and a spreadsheet template is of interest to potential users. Those familiar and comfortable with spreadsheets should not experience much difficulty in learning to use the spreadsheet template. The learning curve for CROPBUDGET is somewhat steep but quickly levels off. Experience computer users will probably need to spend some time learning to use the package. CROPBUDGET is "friendly" enough that even inexperienced computer users can learn to use the package in a reasonable amount of time. It is the authors' opinion however, that CROPBUDGET is not so friendly that experienced and inexperienced users alike will not experience some minor frustration with the package.

## Summary and Conclusions

All preceding discussion in this report leads the authors to the following conclusion: In developing cost of production budgets for cropping enterprises, both a budget generator and a spreadsheet deserve consideration. Either a budget generator or spreadsheet template is suitable at the farm-level depending on the needs of the individual. The budget generator is most applicable for farm managers/operators concerned with the technical coefficients and detailed machinery cost coefficients. The underlying assumptions of budget preparation and the need to compare those assumptions for use in a particular situation require the detail of technical coefficients provided by budget generators. CROPBUDGET fits this need very well.

Farm managers/operators not as concerned with the technical coefficients and detailed machinery cost calculations will be better served with a spreadsheet. Their concern is more likely to be in the area of economic feasibility of alternative input use which spreadsheets can provide an indication of quickly and easily. Spreadsheets are also very useful in calculating break-even costs of production and developing marketing plans.

The Department of Economics, South Dakota State University utilizes both approaches. The budget generator is the starting point and then that output is used to refine the spreadsheet template. This approach allows the agricultural business to have access to a quick, easy method of generating cost of production budgets. This approach also maintains the ability of the research community to use those budgets as well as generating new cost of production budgets by altering specific budgeting assumptions necessary for particular research projects. The agricultural community then has a research base to the assumptions and coefficients in the spreadsheet. Should these assumptions need to be altered, the budget generator can be used to develop these coefficients into a spreadsheet usable in a particular farm situation.

The software program CROPBUDGET and a spreadsheet template are available and can be obtained by contacting the local county extension office or by contacting the Economics Department.

### Reference Cited

Peterson, Donald L., 1991. CROPBUDGET Users Guide. Economics Department. Brookings, SD: South Dakota State University. April.

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probably didn't cover all costs. Feeder pig prices dropped to about half of their early 1991 levels. Increased supplies (expansion due to earlier profits), large supplies and low prices for poultry, lower cattle prices and a very shaky economy all were contributors to the price drop.

Fed cattle prices started to fall in June and were below $70 by late Summer. Prices generally have remained below $70 since then and many feedlot operators had large losses. While grain price did move slightly higher, most of the problems were on the market side (low out prices for fed cattle and high in prices for feeders). The same factors that hurt the hog market were noted in the cattle market -- a shaky economy and plentiful supplies of low-priced substitutes.

While feeder cattle prices held up longer than did fed cattle, by late in the year even feeder prices had fallen off. Prices for calves close to but under $100 and yearlings in the $80 area were $15 to $20 lower than those paid in the early Fall. Lower fed cattle prices and losses by feedlot operators had taken their toll.

Sheep and lamb producers did not notice the larger losses noted above. Their prices already were so low that further drops didn't occur.

1992 - Good News Is Hard To Find -- Much of the discussion regarding late 1991 could carry over into 1992. The economy is not in good shape. Larger suplies of most meats (beef and lamb may be an exception) should keep a heavy lid on prices.

Barrow and gilt prices are expected to be under pressure for all of 1992 and maybe even part of 1993. Rather than expecting prices above $50, rallies above $40 would be "good news". The $45 level is possible for Spring of 1992. The $35 level could be hit (or even lower) by late 1992. Feeder pig prices in the $20's and $30's seem likely.

Fed cattle prices in the $70 area seem likely. Even then, prices below $70 (maybe $65) probably will be more common than prices above $75. While supplies of beef may not be a big problem, the economy and other meat prices and supplies will hurt.

Feeder cattle prices should be $15-20 below year-ago levels. Some expansion in the cow herd, lower interest rates, plenty of forage, depressed fed cattle prices, and the recession, all will be players in the game. The positive impacts of expansion (fewer heifers available for feedlots) and lower interest rates (lower costs) probably will be more than offset by the negative factors listed.

Finally, sheep and lamb prices are not expected to move up much from their current low levels. That means prices in the low $50's for another year.

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