Dairy Session II

"Integrating Production Medicine Programs and Dairy Farm Finance"

Moderator: **Kenn Buelow**

The Net is Gross — Dairy Financial Herd Health Assessment and Monitoring

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Introduction

Veterinarians are in a natural position to interact with dairymen within the scope of financial herd health. They are on the dairies frequently, see management as it is and not as it is supposed to be, understand the interactions of feeds, facilities, cows, labor and management, and are among the most trusted of service providers.

Today dairy farmers rely more on capital and less on labor and land. Additionally, major changes in the lending business climate has resulted in a decrease in commercial banks willing to make loans of less than one million dollars. Liability concerns and awards have made bankers reluctant to offer management advice or counsel of any type.

Veterinarian's ongoing monitoring programs within the herd health area, including reproduction, calf, mastitis and nutritional programs, fit well with financial monitoring. There are more non-veterinary consultants promoting their services, frequently in areas traditionally thought of as within the veterinarian's scope of expertise. The profession needs to solidify its position with the dairy industry and providing services within the financial area can help both dairymen and veterinarians. Accumulating and reporting this data along with other herd management monitors makes sense. The profession needs to continue its movement towards a fee for knowledge reward system and away from being paid only for technical labor. Finally, veterinarians are also lenders to dairymen, and need to protect their investment by assisting their debtors to be profitable, liquid and solvent.

State of the Dairy Industry

Fluctuations in the economics of dairying have been continuous, but several changes over the last few years have made it a particularly difficult business. The boom and inflationary times through the late 1970's artificially inflated prices of agricultural land and enticed many to borrow against the appreciated value, even at high interest rates. The crash in land values restructured the industry and is still impacting it today.

This past year has had a marked decrease in milk income with many producers receiving $9.00 +/CWT milk. The industry has been lucky that cull beef and calf prices have been at record highs, and interest rates have been relatively low. This continuous roller coaster of income vs. expense is impossible to predict with certainty, and we are frequently only spectators in this process.

The net return is reported to be in the 10% range over long periods. This is "gross" when you consider the capital and labor intensive aspects of the business along with the uncertainty due to external forces beyond the producers' control.

Business failures have been commonplace in the last decade. A study of 35 farm failures in western Canada in 1982 showed no demographic group was safe from failure:

	AVG.	Range
Borrowers age	42	22 - 69
Years farmed	14	2 - 40
Equity	33%	-30 - +80%

1987 surveys indicated that of 175,000 commercial dairies:

4% were insolvent
24% experienced negative cash flow
35% were making debt payments
37% were debt free or nearly so

Nature of Dairying

Natural resources including land, air, water, and feed,

processed through an instrument of production like the cow, and combined with human effort and applied technology, produces a salable product – milk.

Dairy enterprises are components of many distinct functions, including:

1. Feed Production
   - Quality
   - Yield
   - Cost
2. Feed Purchasing
   - Quality
   - Cost
3. Feed Storage
   - Preservation of nutrients
   - Wastage
   - Inventory expense
4. Feed Utilization
   - Efficiency as fed
     - Balance
     - Cost
   - Delivery systems
     - Frequency
     - Manger management
     - Stanchions/cow
     - Grouping by lactation, etc.
   - Corral maintenance
5. Animal Husbandry
   - Cow performance
     - Milk receipts/cow
       - Blend price (component + quality)
       - Production/cow
6. Heifer Husbandry
7. Genetic Improvement
8. Labor and Power Management
9. Debt Management
   - Interest
10. Capital Management
    - Equipment
    - Facilities
    - Repair & maintenance vs. depreciation
11. Environmental Management
    - Public costs are being privatized

Veterinary practitioners have traditionally been involved in only a few of these components. Today animal husbandry issues may be the least important on this list for the surviving dairy farmer to be concerned with.

Income

Areas of income include:

- Milk sales
- Beef (cull) sales
- Calf sales
- Replacement heifer sales
- Bull sales
- Dairy purpose cow sales
- Crop sales
- Machinery hire
- Rental income
- Interest income
- Sales of Assets
- Loans

Income by area of the dairy enterprise varies from dairy to dairy and from region to region within North America. However, all studies I've seen put milk sales from 80% to 98.9% of total dairy income. Clearly milk is their cash crop.

"Lack of Expense" – Unfortunate Sources of Cash Flow

- Delayed Accounts Payable (it's in the mail!..)
- Delayed maintenance & repairs
- Using depreciation for operational expenses
- Using tax dollars for operational expenses
- Failure to pay fair value for family labor
- Don't consider:
  - Return on Investment
  - Return to Management
- Interest only/rescheduled debt payments

Expenses

Each dairyman uses a chart of accounts which will break down expenses differently, making exact comparisons impossible.

Major areas include:

	1989 USDA AVG. %
Feed	46.7
Interest	8.2
Herd replacements	12.6
Labor	7.9
Occupancy & capital improvements	10.0
Other operating expenses	14.5
Milk Hauling & Marketing	4.9
Vet, Breeding, Med. & Testing	3.1
Supplies	1.5
Repairs & Maintenance	3.0
Utilities & Fuel	1.8
Misc.	

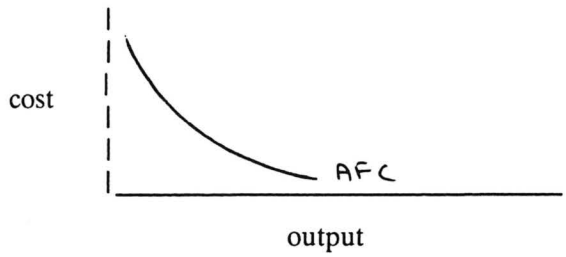
Veterinary costs with medication expenses are less than 2-3% of expenses.

Economies of Scale

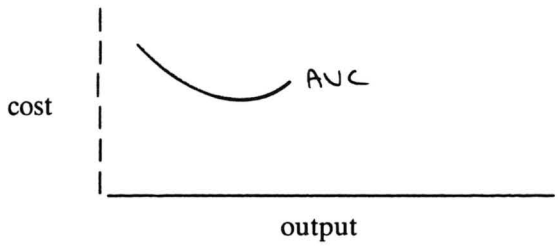
It is clear the low cost producer will flourish and they are those who can balance fixed and variable expenses with the correct size of the enterprise.

- Vertical integration
  - Feed production, dairy, transportation, etc.
- Horizontal
  - Sized for efficiency in purchasing, managing, utilization of equipment and manpower

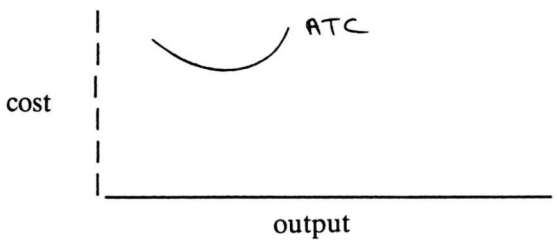
Fixed costs are those which are independent of cow numbers and represent the cost of doing business before the first animal is added. They decrease at a given facility as more animals are added.



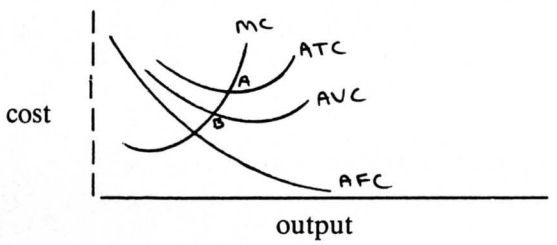
Variable costs are those which are proportional to output such as wages, materials, utilities, and feed. They increase as animals are added.



Average total costs are the sum of the two. Larger more efficient facilities can lower average total costs to some minimum point, after which inefficiencies of management limit performance and average costs increase.

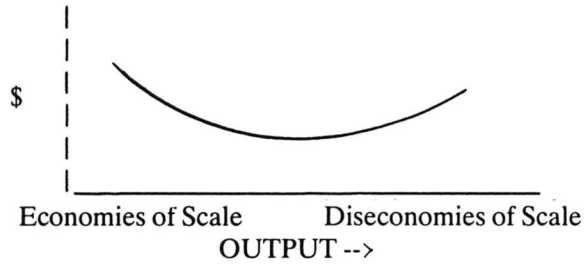


Marginal costs represents those expenses associated with the last unit of output. The intersection between marginal cost and average total cost represents the maximum profit efficiency point, where business receives the most profit per input. The intersection between marginal cost and average variable cost represents the shutdown point, below which the operation can save money by stopping production.



Maximum profit efficiency point A
Shutdown point B

As plant size increases economies of scale can be realized, lowering average total costs, but only to the point where bureaucratic and other inefficiencies of management start increasing costs.



PROFIT MONITORS
PER COW
PER STANCHION
PER ACRE
PER MAN
PER CWT
PER INVESTMENT

PER SIX PACK
PER PICKUP TRUCK
PER HOUR IN COFFEE SHOP

Profit

Tax returns minimize income and maximize expenses. Bank budgets maximize income and minimize expenses. Total income minus total expenses and positive cash flow are not good methods for determing profit because income could be from sales of assests, loans, etc..

PROFIT IS:
Income – Expenses (Incl. Taxes)
– Interest Return on Investment
– Value of Family Labor

And Excludes Passive Land/Equipment Value Changes
= Return to Management

NORMAL PROFIT SHOULD EQUAL THAT RETURNED TO OTHER INVESTMENTS WITH SIMILAR SAFETY, LIQUIDITY, AND TAX STRUCTURE

Determinants of profit

Volume of marketable units (turnover, size of sales, scale) is the first area of management control over potential profit. The second is the profit per unit (margin, rates of production, efficiency). Profit per unit depends significantly on cost controls (overhead, fixed + variable expense).

Adding cows while in profit position can add profit
Adding cows while in loss position adds losses

Expansion typically:

Underestimates capital costs
Borrows from operating budget for expansion needs
Can't make payments
Stops maintenance
Starts cost cutting
Production efficiency falls
Income is lost
Erodes equity

One mid 1980's in North Carolina studied and evaluated dairies based on:

Size of the product sold (total #'s of milk)
Economies of scale
Rates of production (milk/cow)
Minimize fixed vs. variable costs
Management + genetics + environment
Labor efficiency (milk/man-year)
cost controls (% receipts to pay expenses)

They found strong correlations between the number of those four items the farmer did above average and eventual return to management.

North Carolina Study

# of factors better than average	% of farms	return to management
4	7	$ 7,702
3	32	-$ 5,013
2	28	-$15,278
1	20	-$17,478
0	14	-$27,836

Evaluating Financial Health

FINANCIAL EFFICIENCY/PROFITABILITY

Measures dairy's use of assets and the balance between income, expense and investment.

1. Utilization of Assets
   Asset Turnover Ratio:

$$\frac{\text{Adjusted Gross Receipts}}{\text{Average Total Assets}}$$

Adjusted gross receipts Gross Receipts (net income + changes in investment including livestock inventory, equipment, etc.)

IF LOW dairy is overinvested, suffers from low productivity or has excessive expenses.

2. Operating Profit Margin:

$$\frac{\text{Net Farm Income + Interest - Fam Labor - Manage}}{\text{Gross Revenue}}$$

3. Return to Equity:

$$\frac{\text{Net Farm Income - Fam Labor - Manage}}{\text{Equity}}$$

4. Operational Ratios:
   a. Depreciation $\frac{\text{Depreciation}}{\text{Gross Revenues}}$
   b. Operating Expenses $\frac{\text{Total Oper Expenses - Depr}}{\text{Gross Revenues}}$
   c. Interest Expense $\frac{\text{Interest Expense}}{\text{Gross Revenues}}$

LIQUIDITY measures cash flow, correcting for passive changes (Short term view), and provides information about their ability to make payments in a timely fashion.

1. Liquidity Ratio: $\frac{\text{Current Assets (1 yr)}}{\text{Current Liabilities}}$
2. Working Capital: Current Assets - Current Liabilities

SOLVENCY is the distance between the dairy and bankruptcy, usually thought of as the change in net worth. Watch out for passive changes in valuation of equipment and land! (Long term view)

1. Leverage Ratio: $\frac{\text{Total Liabilities}}{\text{Net Worth (equity)}}$
2. Net Capital Ratio $\frac{\text{Total Assets}}{\text{Total Liabilities}}$
3. Debt Asset $\frac{\text{Total Liabilities}}{\text{Total Assets}}$

DEBT RATIOS provide information on debt structure. Frequently total debt is within reason but there is too much short term to meet cash flow requirements.

1. Current Debt Ratio $\frac{\text{Current Liabilities}}{\text{Total Liabilities}}$

Similar ratios can be calculated for intermediate and long term, with most suggesting debt be spread approximately:

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Short term debt	(next 1 yr)	10%
Intermediate	(next 5 yrs + 1)	35%
Long	(next 10 yrs + 1 +5)	55%

Evaluation Problems

Charts of accounts are different between every accountant and every dairy farmer. This makes it difficult to compare apples to apples.

Asset valuation is another obstacle to calculating indices. Do you use depreciated book value, because that is most easily determined? Do you use original cost as an estimate of replacement value? How about market price, and then who determines it? Then, even if sold at market price, some costs will be associated with the sale so perhaps realizable market price is the fairest value. All in all there is a great future for appraisers!

Allocating depreciation is also done differently between and within the same enterprises. Straight line, accelerated, and a piecemeal combination of both will all be found.

Remember you must account for the previous year's prepaid expenses as a regular expense in the current year for evaluation purposes. Similary, the current year's prepaid expenses should be eliminated for evaluation.

Watch inventory changes, especially in feed and supplies, to allow you to develop accurate figures.

Conclusion

Management choices over people, animals, capital and land, and its response to external changes, will alter income. As we compete for exhaustible resources (land, feed, water, etc.) the costs of inputs will rise, increasing the need for efficiency, reinvestment, modernization, development and application of cost saving technologies, and improved management.

Investment option analysis is needed to determine the best financial return of potential investments. Comparisons of income producing, cost reducing, and repair/maintenance investment types are necessary to make quality decisions.

Current production is typically financed by debt and paid for by future production, and ultimately the survival advantage will belong to the location with the lowest production costs, the best commercial advantage (such as proximity to market or feed), and with available financial superiority.

Capital is as important to a dairy as are cows, feed, market and transportation. Our profession needs to learn more about the financial area for us to lead dairying into the next century.

For Your Library

DISEASES AND HUSBANDRY OF CATTLE
edited by
A. H. Andrews

This magnificent publication by A. H. Andrews and co-editors R. W. Blowey, H. Boyd and R. G. Eddy has almost 60 other contributors.

Part one deals with Management which includes calf rearing, beef finishing systems, Suckler herds, heifer rearing, 12 weeks to calving, tropical cattle management, nutrition and alternative forages as well as an excellent chapter on dairy farming in Europe.

Part two focuses on disease in the calf, growing calf, adult cattle, followed by a chapters on lameness, fertility, major infectious diseases, metabolic problems and miscellaneous conditions. The rest of the section deals with therapy and prophylaxis.

This publication has numerous excellent black and white photos and illustrations, as well as an outstanding collection of color plates, the latter being confined to an eight page section. The book is highly recommended for bovine practitioners.

Further information is available from Blackwell Scientific Publications, Inc., 3 Cambridge Center, Cambridge, MA 02142 (Tel: 800-759-6102) and in Canada from Times Mirror Professional Ltd., 5240 Finch Avenue East, Scarborough, Ontario M1S 5A2 (Tel: 03.347-0300).