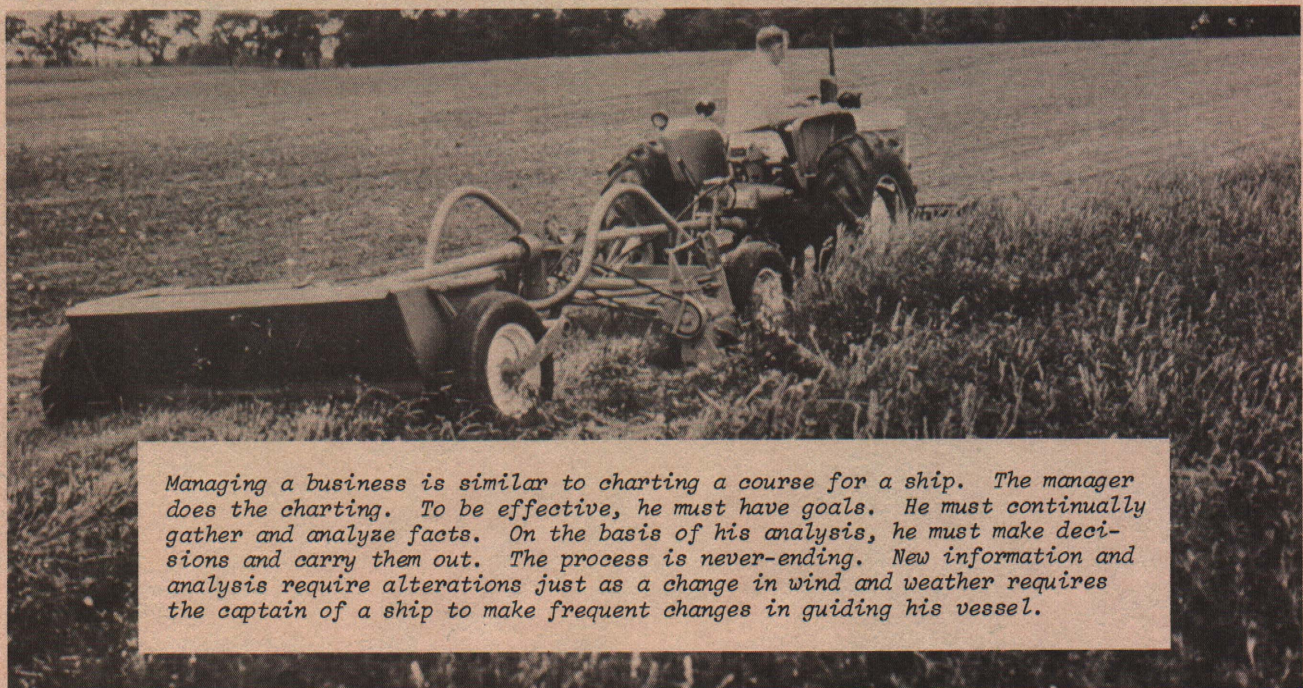
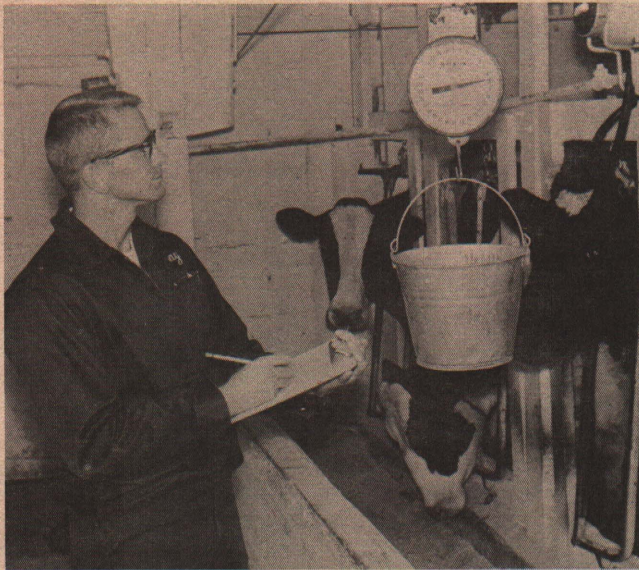


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BUSINESS ANALYSIS for DAIRY FARMS



Managing a business is similar to charting a course for a ship. The manager does the charting. To be effective, he must have goals. He must continually gather and analyze facts. On the basis of his analysis, he must make decisions and carry them out. The process is never-ending. New information and analysis require alterations just as a change in wind and weather requires the captain of a ship to make frequent changes in guiding his vessel.

Business Analysis for Dairy Farms

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THE OBJECTIVE of this publication is to present a guideline for analyzing dairy farm businesses. Dairy-men should be able to use this guide to analyze their farm operations and improve their farm earnings.

The scheme for dairy farm business analysis, pp. 3 and 4, can be used to locate the basic causes of low income. Space is provided to record business facts and compare them with analysis standards. Well-managed farms tend to perform in the range of these standards, which are based upon the top 25 percent of dairy farms in the Telfarm program. If a factor for the farm under analysis differs from the standard, it should alert the manager that this is a point for further study.

Note that dairy and crop enterprises have been separated. This makes it easier to track down possible profit robbers.

To use the analysis scheme, first compare your gross income from the dairy and crop enterprises to the standard (far left). This is broken down into income per cow (upper) and per acre (lower).

A farm can be operated at an acceptable level of gross income and have net income reduced by high costs per cow or per acre. So, compare the cost of production per cow, per hundred-weight of milk, and per acre to the standards.

Finally, the manager must decide if he is spreading his ability over enough cows, milk, and acres. Such standards as cows per man, milk sold per man, and tillable acres per man can be used. Even though net per cow and per acre are up to standard, total net farm income may be low, if the total business is too small.

DAIRY FARM BUSINESS ANALYSIS

Anyone analyzing a dairy farm soon finds that certain farm record information is a must. Net farm profit from Federal Tax Form 1040-F is an acceptable measure of net income. Much of the other financial information can be computed from this source. Of course, you can't beat a good set of farm account records.

The analysis scheme calls for a breakdown of costs between crops and livestock. For example, the dairy labor, machinery, etc., costs represent only that portion used in handling the dairy herd. If this is not possible from your available records, you can get many of the factors needed from the supplementary analysis section

on the right-hand side of the chart. When you have assembled the most accurate data you can get, you are ready to analyze it.

THE DAIRY ENTERPRISE

Dairy income and cost are separated in the scheme. Column 1 shows income and cost per cow. These are further detailed in column 2. After determining if any of these are out of line, corrective measures can then be employed.

Milk sales normally make up about 90 percent of the dairy income. Sales vary with price and level of production. The standard is based on \$5.70 per cwt. Price is important, and should concern every dairyman, but it is largely external.

Under the base-surplus system, price received varies with the proportion of excess milk. A standard for percent excess milk is shown in column 3.

Low production per cow is the leading cause of low dairy income. This can normally be traced to one of four factors:

1. Too little and/or too low quality feed. Grain fed per cow can offer a clue. Often, low forage quality is caused by weather and is outside the control of the manager. Early harvest and wilted grass silage can help.
2. Getting cows bred to freshen every 12 months. Percent cows in milk can be used as a gauge.
3. Having enough good replacements to allow a 30 to 35 percent culling rate. Percent calf death loss provides an indication of the number of heifers that will be available.
4. Low producing ability. Some cows just don't have what it takes. Managers should make full use of top quality A.I. bulls.

Cattle sales make up the remainder of the dairy income. Low income is associated with high death loss and low culling rate. Low culling rate is characteristic of an expanding herd.

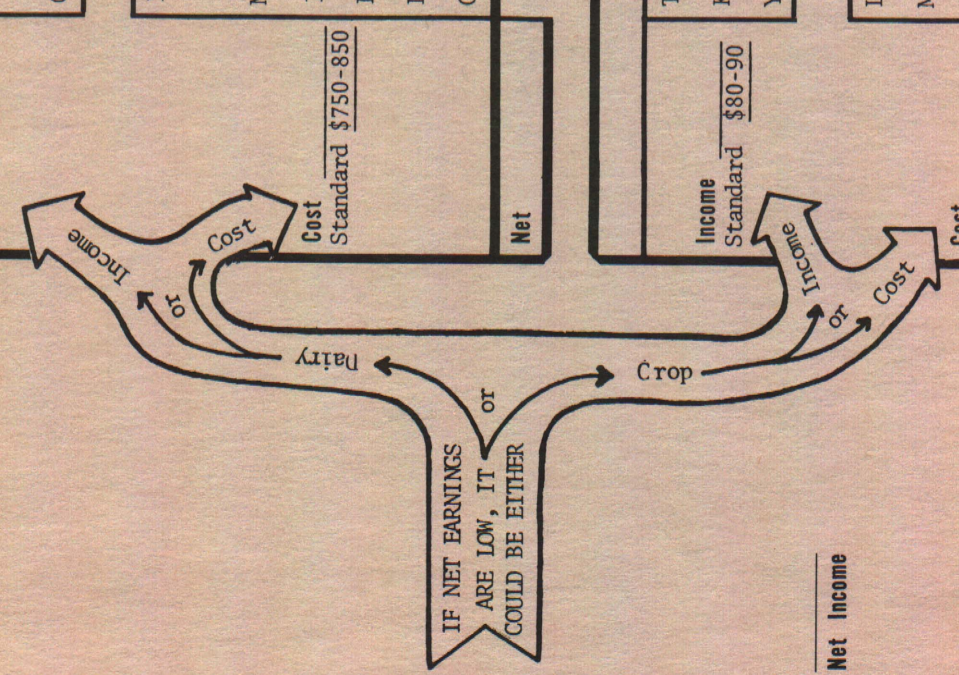
Comparative standards are also given for the main items of dairy costs in column 2. Feed, which includes both raised and purchased feed, is the largest item, and makes up about half of the total. Feed cost per cow is greater with high producing herds.

Labor accounts for 20 to 25 percent of total cost. The operator's labor and that of his family is charged at

Scheme for dairy farm business analysis 1970-1971

(1) (2) (3)

Per Cow		Per Acre		Supplementary Analysis Guides	
Income Standard <u>\$850-950</u>	NUMBER OF COWS	Standard	Your Farm	Standard	Your Farm
Cost Standard <u>\$750-850</u>	PRODUCTION/COW - Holsteins Guernseys Jerseys	13,000-14,000# 10,000-11,000# 9,000-10,000#		Stanchion housing Modern loose housing	
Net	CATTLE SALES/COW	\$80-120		Cows/man: (devoted to dairy herd) Pounds grain fed/cow ¹ Percent cows in milk Calves born/cow Percent excess milk Percent calf death loss	40-50 60-70 5,000-6,000 88-91% 1.0-1.2 0-5% 3-8%
	LABOR: Stanchion housing Modern loose housing	\$150-200 \$125-150		Pounds milk sold/man; ² small herds large herds	600,000 900,000
	MACHINERY	\$40-55		Machinery investment/cow	\$120-130
	IMPROVEMENTS	\$40-55		Improvement investment/cow	\$350-400
	FEED (Raised and bought)	\$400-420		Percent barn capacity used	95-100%
	LIVESTOCK EXPENSE	\$85-100		Vet. and medical expense/cow	\$10-12
	OTHER	\$20-25		Breeding fees/cow	\$7-8
				Net cost per cwt. milk	\$4.75-5.25
	TILLABLE ACRES			Crop value/tillable acre	\$90-100
Income Standard <u>\$80-90</u>	KIND OF CROPS			Percent tillable acres idle	0-2%
Cost Standard <u>\$75-85</u>	YIELD			Percent tillable acres in high valued crops	80-90%
Net				Corn yield	85-100 bu.
				Hay yield	4-5 ton
	LABOR	\$15-20		Tillable acres/man (devoted to crop program)	400-500
	MACHINERY	\$18-25		Machinery investment/tillable acre	\$50-60
	IMPROVEMENTS	\$3-6		Improvement investment/tillable acre	\$20-25
	CROP EXPENSE	\$16-24		Fertilizer expense/tillable acre	\$12-15
	OTHER	\$16-21		Interest charge/tillable acre	\$10-15
				Taxes/tillable acre	\$3-6



¹Reduce grain fed per cow by 10% for Guernseys and 20% for Jerseys.
²Reduce milk sold per man by 20% for Guernseys and 30% for Jerseys.

Standard \$22,000-\$26,000

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\$2.50 per hour. Hired labor is included at cost. Remember, only labor used for care of the dairy herd is included.

Take a second look when labor costs per cow seem a bit high for a high producing herd. Extra production takes more time, but usually results in lower cost per hundred weight.

Livestock expense is the third greatest cost. This includes milk hauling and other marketing costs, breeding fees, veterinary expense, DHIA, and milk house supplies. Don't be alarmed if livestock expense runs high for a high producing herd. Milk hauling, which is on a hundred weight basis, makes up about half of this total.

Improvement and machinery costs (column 2) for the dairy herd are about equal. This includes only improvements and machinery used by the dairy herd. Machinery cost for crops is included in the crop analysis.

A high proportion of improvement and machinery costs are in depreciation and interest on investment. These go on whether or not the facilities are used to capacity. Therefore, if costs are to be kept at a reasonable level, it is important that the herd be expanded to fit new facilities.

Included in "other" costs are the dairy share of utilities, taxes, and miscellaneous expenses.

THE CROPPING PROGRAM

On Michigan dairy farms, crops account for 40 to 60 percent of the value of farm production.

Crop income includes the value of cash crop sales and raised feed which is charged to the dairy herd. Low crop income results from low crop yields and/or the production of low value crops such as pasture, oats, or idle land. The first item is often due to weather and is not the result of poor management.

Analysis and control of crop production costs are of major importance in dairy farm management. Labor allocated to crops is charged on the same basis as for dairy--\$2.50 per hour. Labor accounts for 20 to 25 percent of crop production costs.

Machinery cost, which is about half depreciation and interest on investment, accounts for about 25 to 28 percent of the total cost. Fuel, repairs, and custom hire are included in machinery cost. A common weakness on dairy farms is over-mechanization. A crop machinery investment of \$50 to \$60 per tillable acre is a good standard.

Improvement costs include repairs on buildings and fences, insurance, depreciation, and interest on improvement investments. It is a relatively small part of crop cost unless the farm is intensively tilled. If needed, tilling has

always proven to be a good investment. The standard of \$3 to \$6 per acre for improvements can be maintained if only a modest amount is invested for drainage.

Crop expense includes fertilizer, seed, herbicides, insecticides, crop insurance, and interest on the crop inventory. The first three items account for about 80 to 90 percent of the cost.

"Other" crop expenses include taxes and interest on tillable land, and the crop share of miscellaneous expense.

LABOR OUTPUT

Finally, it is important to analyze labor output. To do this, start with gross income per man. Low output per man results from too few cows or acres per man and/or from low output per cow and per acre. High production, however, will overcome part of the effect of a low number of cows or acres per man. But there is a limit to what can be done through increased production, just as there is a limit to the number of acres and cows one man can handle.

The standard for cows per man and milk sold per man is computed on the basis of the man-hours devoted to the dairy herd. Likewise, the guide for tillable acres per man is based upon the labor devoted to the crop enterprise. One man is equivalent to 3,000 hours per year in the standards.

SUMMARY

This procedure is designed to point out weaknesses in the dairy farm business. It is only a probe, however, that can be used to locate these areas. Further investigation is necessary to correct the weaknesses detected.

There are other factors that could be examined in analyzing a dairy farm operation. For easier comprehension, they have been kept as few as possible in this analysis guide.

Analysis is not something to be done once a year. Once you have the system in mind, it should be a part of your thinking as you go about your every day job of management. When you make a change, think through how it will affect some of these important analysis factors. To be an improvement, a change must contribute more benefits than costs.

EXAMINE WHOLE BUSINESS

Sound analysis requires a look at the whole business--not just a part of it. For example, many believe that if a dairyman is getting high production from his cows, that is it--there is no need to look further for business weaknesses.

The relationship illustrated in Figure 1 tends to support this viewpoint. In general, high income and high production go together. But before drawing final conclusions, examine the information on the variation in labor income at the different levels of production in Table 1. Note the wide range in labor income at the various production levels. One Holstein herd in the high

production group produced over 14,600 pounds of milk per cow, and yet returned a minus \$1,888 labor income! Another Holstein farm with 9,066 pounds sold per cow returned a labor income of \$11,767! These examples and the range in labor income show the futility of basing an analysis on this one factor. The same applies to any single factor that might be selected.

FIGURE 1. General relationship between milk sold per cow and labor income. ^{1/}

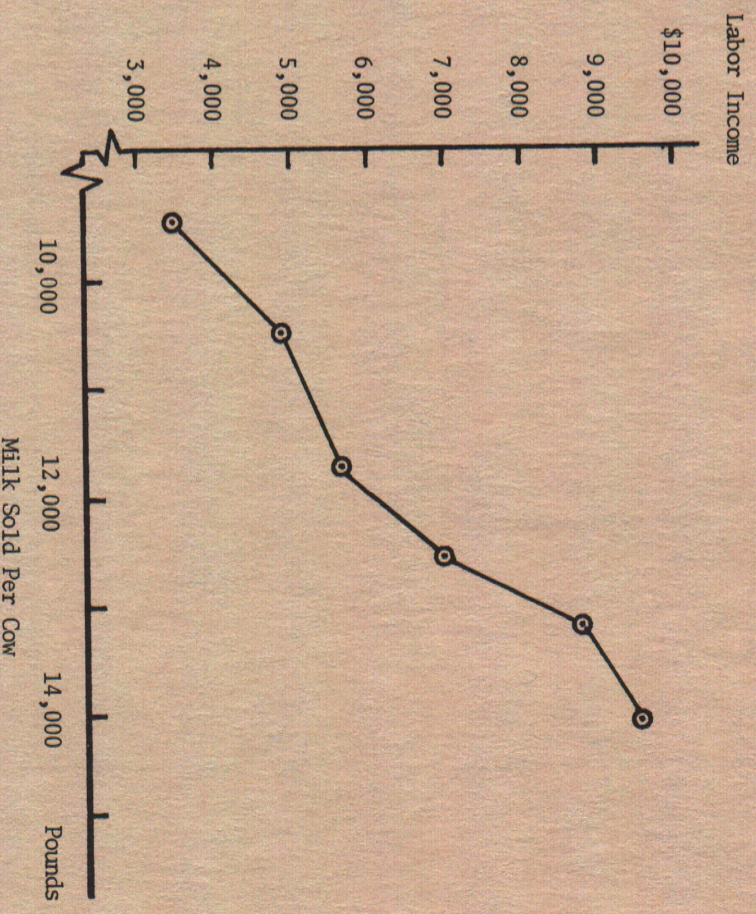


TABLE 1. Relationship between milk sold per cow and labor income. ^{1/}

Milk sold per cow lbs.	Number of farms	Average milk sold per cow lbs.	Labor Income	
			Average	Range
Less than 10,000	17	9,435	\$ 3,439	-4,311 to 11,767
10,000 to 10,999	35	10,554	4,768	-3,448 to 14,911
11,000 to 11,999	46	11,561	5,393	-7,925 to 29,609
12,000 to 12,999	68	12,537	6,902	-9,474 to 22,742
13,000 to 13,999	64	13,248	8,985	-4,081 to 41,683
14,000 and over	36	14,602	9,427	-1,888 to 33,417

^{1/} Summary of 266 Southern Michigan dairy farms using Telfarm records.