# DAIRY FARM APPLICATIONS FOR MICROCOMPUTERS

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There was a time when farmers operated without tractors. This, of course, is almost unheard of today because we have recognized the tractor as an effective tool. The tractor is classified as a tool because it helps farmers perform a task, making that task easier, faster or more complete. In the past, most farmers have managed their businesses without using a computer. Those times may be coming to an end.

The microcomputer is a part of today's agricultural technology. These electronic devices are information management tools. They can be used to make the task of handling information easier, faster or more complete. Information is a valuable resource for management and decision-making. However, it must be utilized in order to demonstrate its value. A computer can make it possible to get the most from our information.

Farm management is making, implementing, and accepting responsibility for decisions to maximize net returns to the resources a farmer owns or controls. A careful distinction between goals and strategies is helpful. Goals are ends and strategies are means to those ends. The permanence of goals contrasts to the timely adjustment of strategies to changing conditions both inside and outside the firm. Goals and performance standards are needed in every area where the decisions of the farm manager can potentially affect progress and survival of the business. Strategies focus on the accomplishment of these goals and performance standards.

There are four fundamental functions of managers: Planning, organizing, directing and controlling. These functions describe what managers do.

The fourth function of management is control. The farm manager's job is to get things done. Decisions in the control function concentrate on how well things are getting done. Is the farm performing as planned? Are the goals and objectives realistic? What changes need to be made to improve performance? These kinds of questions are addressed in the control function.

The three steps in control are: 1) establish standards; 2) measure performance and compare with standards; and 3) take corrective action, if necessary. Explicit standards are essential to the evaluation of performance and thus basic to corrective action. Standards are directly related to the objectives, policies and strategies from the planning process. Standards are models or criteria which can be quantified. These standards are acceptable rather than maximum levels of performance. These standards also provide the guidelines for determining which performance data to collect and analyze.

Measuring performance involves collecting the information necesary to determine if the standards are being met. Information begins with collecting data about performance. The effectiveness of data in supplying information may be determined by asking the following kinds of questions:

applications, including agriculture. A partial list of uses includes:

1. budgets,
2. cash flows,
3. projections,
4. balance sheets,
5. income statements,
6. break-even analysis,
7. formulations,
8. payroll calculations,
9. inventories,
10. travel vouchers,
11. classroom gradebook,
12. invoices,
13. purchase orders.

The VisiCalc program was born out of the observation that many problems are commonly solved with a calculator, a pencil, and a sheet of paper - three nearly universal tools. Calculating projections, income taxes, financial ratios, budgets, engineering changes, cost estimates, and balancing your checkbook are done with these tools.

The VisiCalc program combines the convenience and familiarity of a pocket calculator with the powerful memory and electronic screen capabilities of the personal computer. With the VisiCalc program, the computer's screen becomes a "window" that looks upon a much larger "electronic worksheet". You can move or "scroll" this window in four directions to look at any part of the worksheet, or you can split the computer screen into two "windows" to see any two parts of the worksheet at the same time.

The worksheet is organized as a grid of columns and rows. The intersecting lines of the columns and rows define thousands of entry positions. At each position you can enter an alphabetic title, a number, or a formula to be calculated. Just by "writing" on the worksheet, you can set up your own charts, tables, and records.

The formatting commands let you individualize the appearance of each entry, row, or column. If you wish, for example, you can make your VisiCalc checkbook record look just like your bank statement.

But the power of the VisiCalc program lies in the fact that the computer **remembers** the formulas and calculations you use in solving a problem. If you change a number you had previously written on the electronic worksheet, all other related numbers on the worksheet change before your eyes as the VisiCalc program automatically recalculates all of the relevant formulas.

Recalculation makes the VisiCalc program a powerful planning and forecasting tool. You can correct mistakes and omissions, and examine various alternatives - effortlessly.

The minimum requirements to use a spreadsheet such as VisiCalc include:

1. computer 48K,
2. video monitor,
3. 1 disk drive,
4. blank disks, and
5. spreadsheet program disk for the specific computer you have.

Keeping herd records is a major application of interest to most dairymen. Options for computerization of livestock records include:

1. Buy a commercial program package,
2. Utilize a data base manager
3. Participate in organized program such as DHIA,
4. Hire custom programmer, or
5. Combination.

Some available commercial herd record packages include:

1. Farm plan
2. Dairy Herd Management Services, Inc.
3. Marshall's Dairy Programs
4. AgDisk
5. Agri-Management Serv
6. Farm Management Systems
7. Others

Whichever option is selected, a good herd record keeping system should handle all of the following functions:

1. data entry,
2. data editing,
3. sorting,
4. locate specific animals,
5. print reports,
6. delete animals, and
7. perform calculations.

Other considerations which should be remembered when selecting any computerized record keeping program include: capacity, ease of operation, flexibility, support and cost. Most dairymen and other farmers we have talked to are pleased with their computers and the performance of the system. A general recommendation for selecting a system is to first list the tasks you wish to computerize. Next, locate software (computer programs) which perform the operations needed for your situation. Then last, select the hardware which will run those programs. Of course, due consideration should be given to service and support as well as price. Remember, software is the key!

Yes, computers can be effective tools and contribute significantly to sound management decision-making. We should remember however, that computers do not <u>generate</u> information. They <u>process</u> it. Data entry is of primary importance. Many have found it much easier to write data on cards and in books than to type it into a computer. Without routine, consistent and complete data entry, a computer system will fail!

The following is offered as a suggestion in setting up a computer system:

## Requirements for Success

1. Have detailed knowledge of tasks to be computerized.
2. Select software for each specific task.
3. Obtain hardware appropriate for the software selected.
4. Make committment to data entry.
5. Avoid duplication of effort.
6. Become thoroughly informed on operational procedures before placing total dependence on new system.
7. Have lots of time and patience for the introductory period.

Dairymen should give serious consideration to the adoption of computers in their operations. The computer is a powerful tool with many possible uses. It is a machine that is fast, accurate and versatile. With proper software a farm computer system can improve decision making capability and make information management more efficient. On the other hand, you wouldn't buy hay machinery if you have no hay to cut! Don't buy a computer and then decide how to use it! Determine what your use will be and decide whether or not you can justify it on that basis. A computer should be able to help you accomplish tasks BETTER, EASIER or CHEAPER in order to pay its way.