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Management Concepts for the Expanding Dairy Farm

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As dairy herds get larger, there are more challenges for owners or managers to manage people as well as more cows. How well each farm staff worker performs his or her job is crucial to the success of the dairy. This is because there are literally hundreds of decisions made daily by farm workers which impact both animal productivity and dairy farm profitability but which owners or managers never know about. For example: Is the cow in heat or not? If yes, when should I breed her? What bull should I use? Does she need to be treated after breeding? Farm staffs on expanding dairy herds are not only asked to perform technical tasks, they become responsible for knowing principles, accumulating observations and facts and then making decisions.

Dairy owners need systems to manage their employees to ensure that correct decisions are made consistently. Correct decisions are not only best for productivity of animals, but also for maximum profitability of the dairy. Occasionally, the decision regarding what's best for the animal versus what's better for the dairy profitability are in conflict. For example, conscientious dairy workers may persist in treating a calf with chronic pneumonia when the better economic decision is eliminating that animal from the herd.

DairyWorks is a system of management and learning: owner and workers communicate and work together so that decisions and work are done correctly and precisely. It is management distinctly different than the historical, conventional dairy owner-worker relationship. It's a different management philosophy, the basis for which has been successfully applied to manufacturing and service industries; its application to growing progressive agribusiness enterprises is imminent.

WHAT IS MANAGEMENT

The term "management" needs to be defined. Very simply, it can be thought of as *somebody* overseeing *something*. The *something* is work. It's crucial to understand work so that it can be manipulated for productivity and profitability. Work will be explained in a following section, "Organize Work" on page 7. The *somebody* is the person responsible for manipulating the system for maximum productivity and profitability. This person, the manager, performs the following:

- construct the system of work
- teach and train people to do the system
- monitor the workers' activities and results the system produces
- apply discipline when workers fail to implement the system properly

The manager of any work system may be a single person who does all the work, or the head of a team of people that must be coordinated to implement the system of work.

THE NEED TO CHANGE

“Things are the way they are because they got that way”. And “unless things change, they are going to remain the same”. Economic pressures stimulate, then drive change. The dairy farmer who increases profitability by improving the quality of his calf-raising program illustrates this point. To increase income, the dairy farmer makes strategic changes in the way bull calves are managed to:

- reduce death loss resulting in more live calves to sell
- improve weight gain to produce a heavier calf to sell
- reduce health problems to sell a healthier, thriftier calf
- change the sick animal treatment program to eliminate antibiotic residues

The result is more income from increased calf sales to a much more satisfied calf buyer.

At the same time a dairy farmer can make strategic changes to reduce expenses by:

- reorganizing the colostrum program to guarantee a high percent of calves receive protective antibodies through a system which is more efficient for workers to accomplish
- improving feeding programs to increase rate-of-gain with least-cost rations
- changing the vaccination program to improve calf health with cost-effective vaccines
- modifying antibiotic use to reduce treatment costs and eliminate antibiotic residues

Income increases through sales of a higher quality product; expenses decrease through improved efficiency...profit is greater through change.

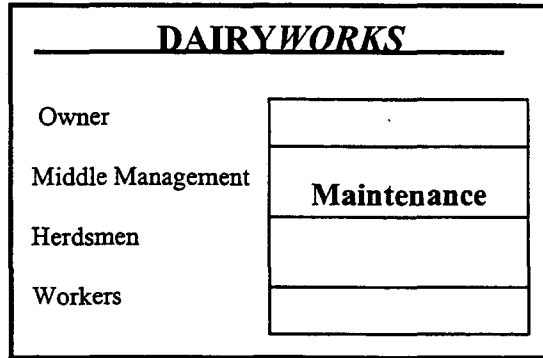
Whether they recognize it or not, dairy owners manage their operations to accomplish two objectives, namely to maintain performance, or to improve performance.

Maintaining a herd somatic cell count of 300,000 is one example of managing to maintain performance. To accomplish this requires:

1. Maintaining existing standards and systems such as continuing the same milking routine, using the same equipment and teat dip, treating clinical mastitis and dry cows the same way.
2. Monitoring performance to assure that the standards are maintained by reviewing weekly SCC and bacteria count test results, watching milking routine and assuring that treatments are being done exactly as in the past.
3. Applying principles of discipline when these standards are not met as for example, correcting milkers when they deviate from their milking routine, maintaining equipment to acceptable functional standards and reviewing treatment procedures if these have changed.

A view of management for maintenance on a dairy is depicted on Figure 1. Management and workers participate together to maintain performance.

Figure 1

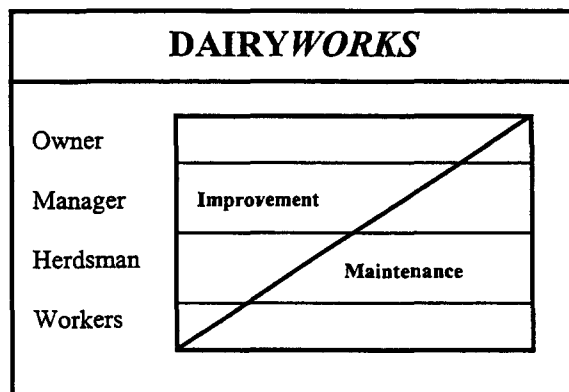


Managing to improve requires change. Improving the herd somatic cell count from 300,000 to 150,000 requires:

1. Changing the owner's and worker's attitudes to want a lower SCC...the motivation may be pride, increased profit, taking advantage of premiums from a milk quality program, or demands from a customer.
2. Changing work routines or technology that results in accomplishing the new standards.
3. Monitoring to assure the changes are implemented and the results are accomplishing the new standards.

The classical view of management for improvement within a dairy business is illustrated in Figure 2.

Figure 2



Change for improvement can be accomplished in two ways: through *innovation* or through *constant work improvement*. Change through innovation is generally:

- dramatic
- short-term
- expensive
- demands a high rate of return on investment

Constant improvement, by contrast, is:

- common sense
- not sophisticated
- relies on basic quality control and everyone's personal effort
- better "management".

The contrast between the two philosophies of change can be seen in Figures 3 and 4.

Figure 3

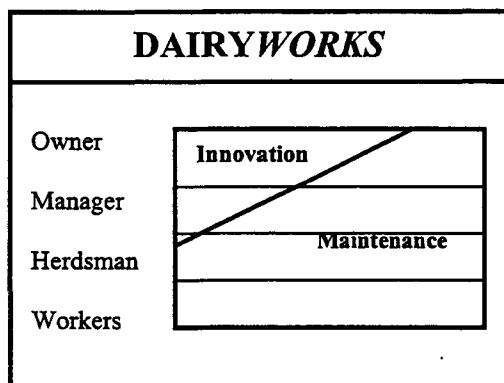
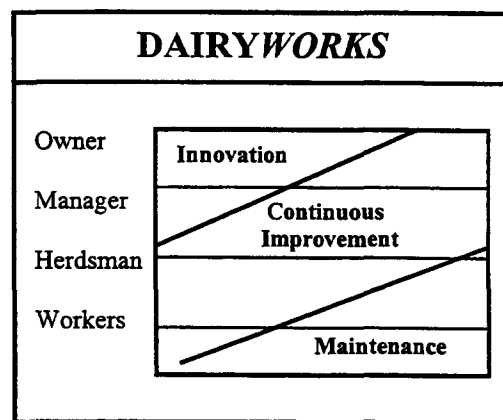


Figure 4



So, to improve herd SCC, a dairy owner may purchase new milking equipment, install backflush, purchase a new teat dip or use a new drug. Or, the dairy owner may decide to work with milkers, its veterinarian, cooperative fieldperson or others to improve milking routine, change equipment and facility maintenance schedules and improve clinical and dry cow treatment procedures to attain long-term, low-cost, but constant improvement. Successful dairy businesses incorporate both purchasing innovation (technology) and improving their management to become more productive and profitable. DairyWorks focuses on improvement through management.

DAIRYWORKS: THE SYSTEM TO IMPLEMENT CHANGE THROUGH FIVE PRINCIPLES

Implementing change is difficult without structure, without a map or a plan to accomplish it. DairyWorks is a management process that clarifies how to change. It is best described for dairy owners/managers through five principles: 1. organize the dairy into units of specialization; 2. establish unit objectives; 3. organize work; 4. build teamwork; and 5. monitor results.

ORGANIZE THE DAIRY

Large dairies can be organized into units based on animal productivity and farm staff responsibilities. Figures 5 and 6 depict practical management diagrams of a 300 cow and a 1,000 cow dairy.

Figure 5

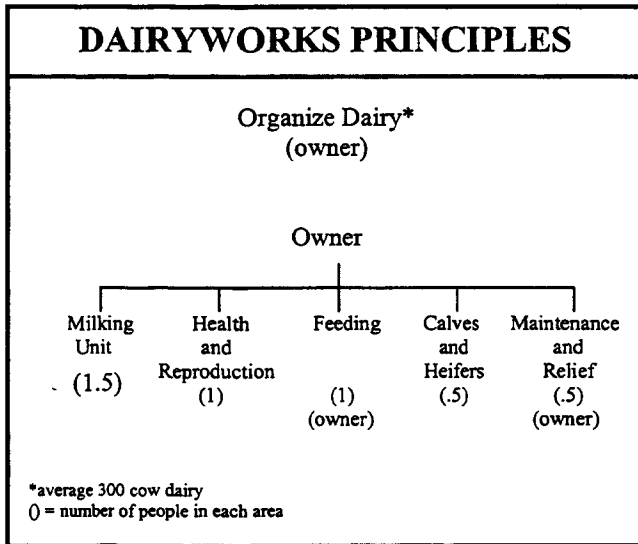
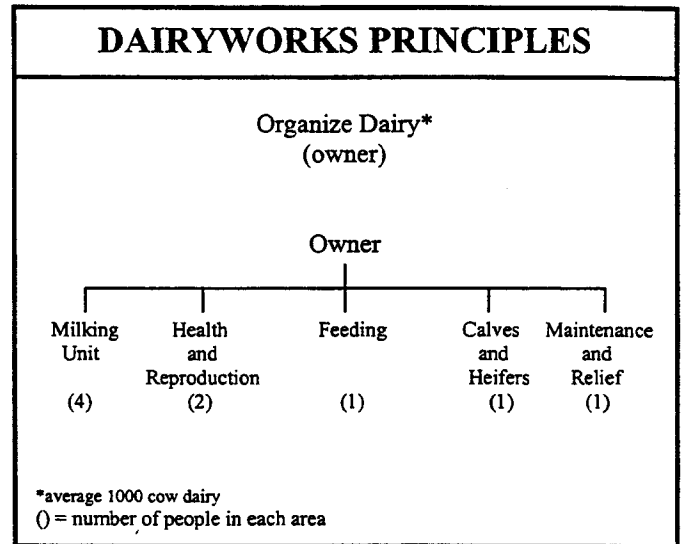


Figure 6



Such management schemes provide for:

- **specialization:** The calf-raising person (or team) concentrates all their efforts on maximizing productivity (e.g. low death rate, high weaning weights, etc.) of the animals in their area.
- **accountability:** If pre-weaning calf death rates exceed target levels or weaning weights are not as high as the goals, one person (or team) is responsible and identified as needing assistance to change work or technology to attain goals.

- **establishing specific goals and monitoring systems:** Establishing goals for calf growth and performance are independent of milkers, the person(s) feeding, etc. Similarly the records which workers maintain to monitor if goals are met are unique to each unit of the dairy.

ESTABLISH UNIT OBJECTIVES

Objectives establish *what* needs to be accomplished in general terms, not *how* to accomplish it. Objectives are goals. Objectives are both qualitative and quantitative. Examples of qualitative objectives for the owner and the head of the calf-raising team are presented in Figures 7 and 8.

Figure 7

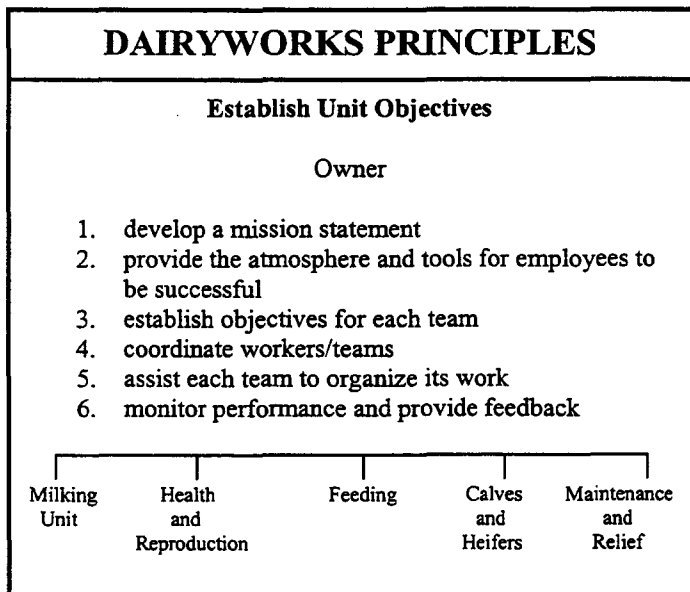
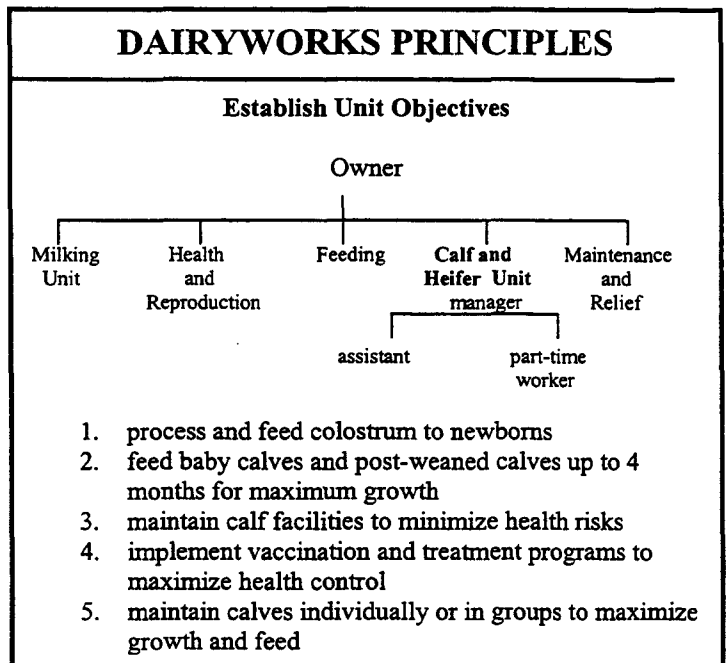


Figure 8



Examples of quantitative objectives describing “level of performance” for the calf-raising team and for the milkers are presented in Figures 9 and 10. Objectives are established by the owner with “buy in” from each group of workers. Once the objectives are clearly written and understood, the specific goals and work routines are determined by workers with the owner.

ORGANIZE WORK

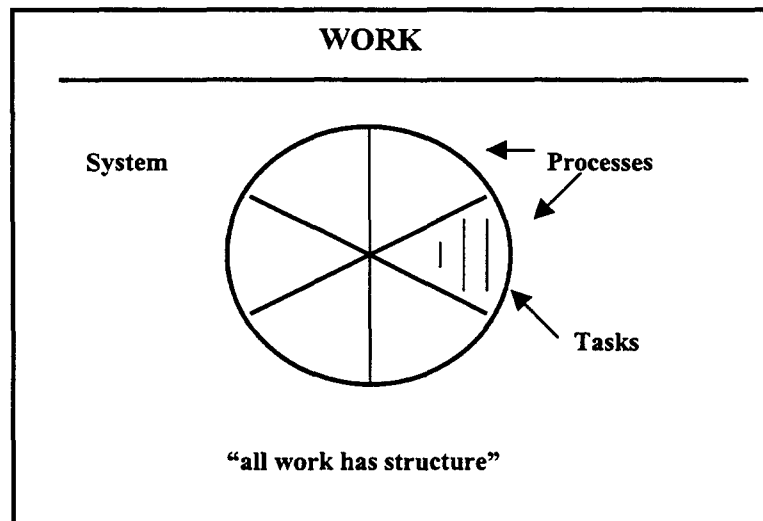
DairyWorks is all about *organizing work*. When managers and workers plan together for efficiency and improved results, increased profit is the outcome. It is crucial to understand work and how to manipulate it for improvement.

All work has structure; how its structure is organized is crucial to its results. Organizing work is described as:

- a series of related tasks is a process
- a group of processes is a system
- the system generates results

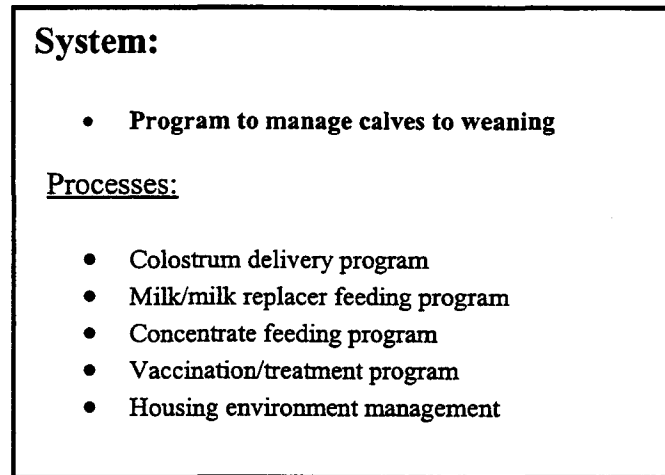
This concept of work is depicted in Figure 11.

Figure 11



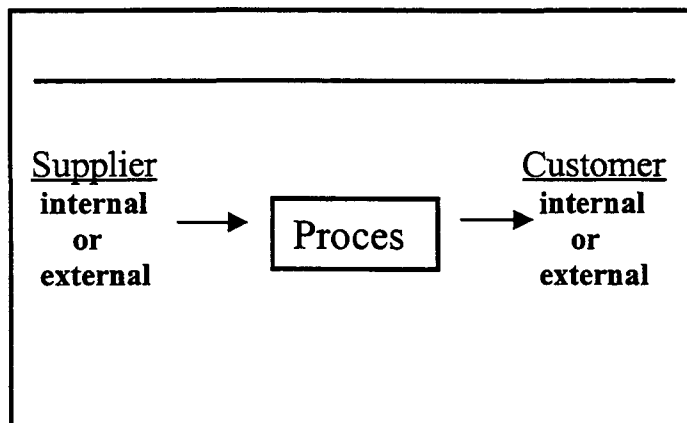
The key word is *processes*. A process is grouping in sequence all the tasks directed at accomplishing one particular outcome. Better processes mean better quality, which means better productivity. A “system” is integrating a group of related processes to accomplish a larger outcome. Figure 12 illustrates the work of raising calves.

Figure 12



While a process is a series of related tasks, every process has a supplier and a customer. The supplier is the provider of process input. This person may be internal (e.g. the milker who supplies colostrum from milking fresh cows) or external (e.g. the salesperson who sells a colostrum substitute). The customer is the user of the process or the activity output and also may be internal (e.g. calf raiser) or external (e.g. calf buyer). The supplier/process/customer/ relationship may be clarified in Figure 13.

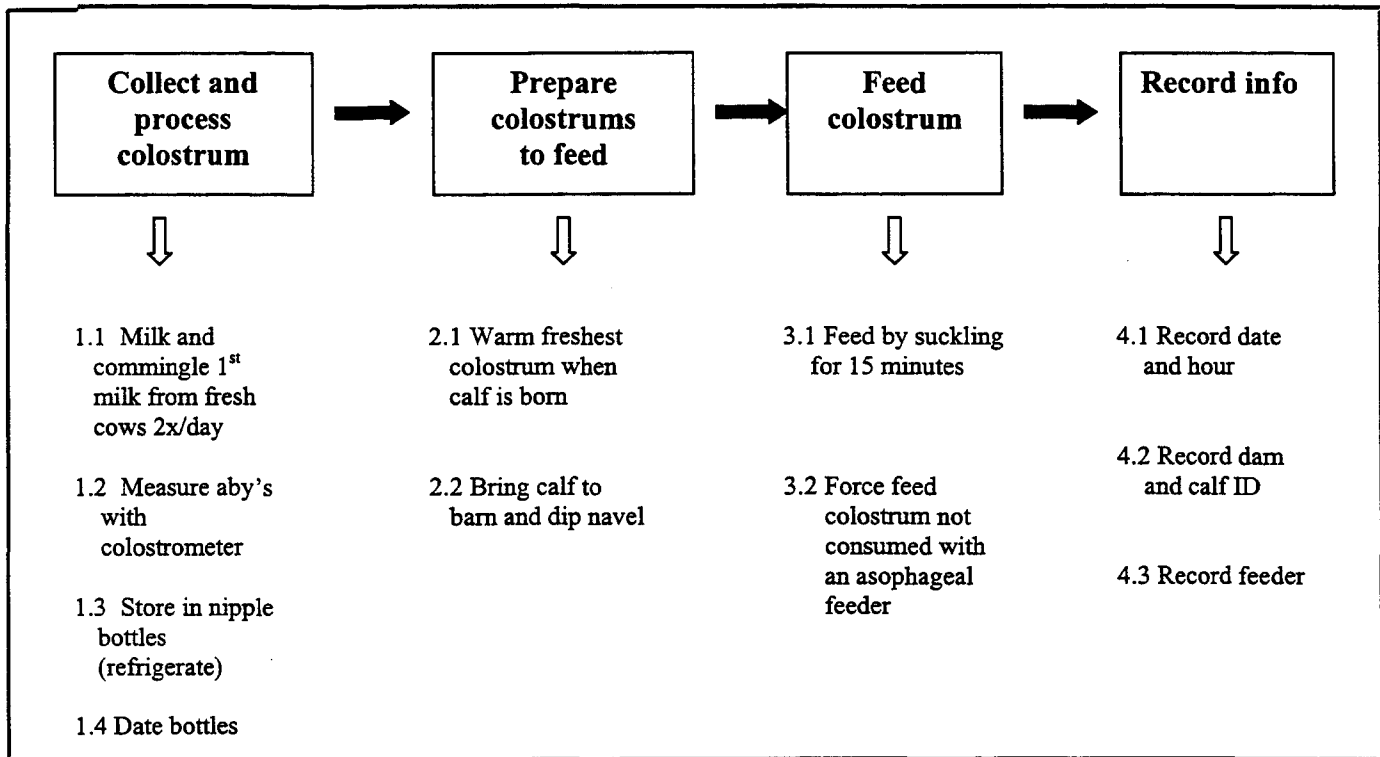
Figure 13



Processes have distinct beginnings and endings; this is crucial to defining the limits of processes. An example is the process of aviation flight time. Flight time in commercial airline travel is defined as the pilot's activities occurring between the beginning of wheel movement away from the gate of one terminal to the end of wheel movement at the arriving terminal gate. By contrast, flight time by military standards is what the pilot does beginning from the time the airplane wheel leaves the ground to the time when the wheel again touches the ground. One definition is not "more correct" than another. Rather, the tasks defined within each process are slightly different and are defined by different beginning and end points.

Systems can be communicated by *flow charts*. Flow charts are an orderly description of the tasks comprising a process; and the orderly arrangements of processes defining the system. They are diagrams of structured work. Two flow charts are provided in Figures 14 and 15. They illustrate how flow charts can be customized to describe virtually any work activity when it is thought out thoroughly. They clearly define work and become "tools" for the owner to describe "colostrum delivery" to the calf-raising team or for a veterinarian to explain a fresh cow program to a herdsman.

Figure 14



1 – 4 Day Fresh Cow Process

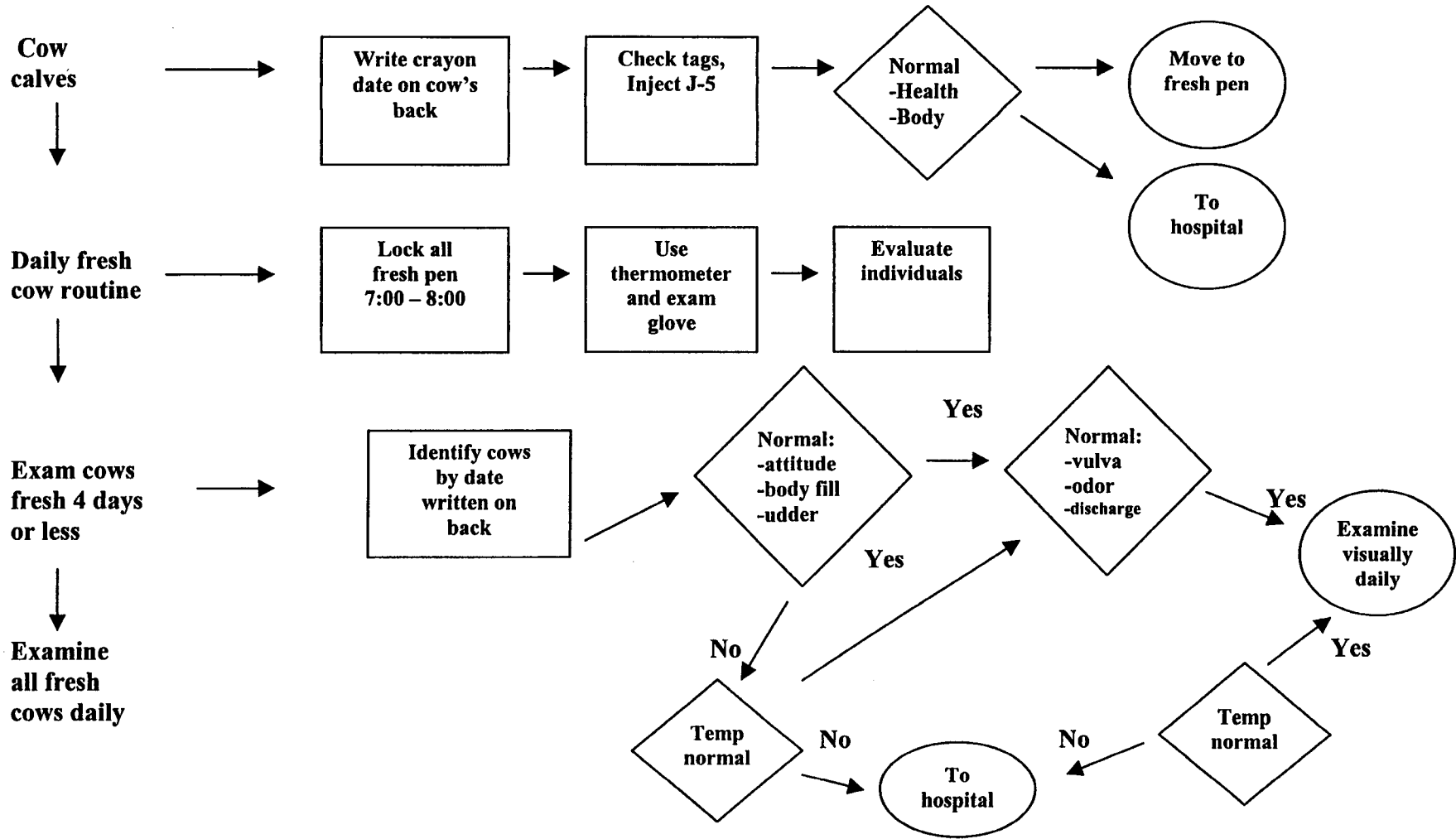


Figure 15

BUILD TEAMWORK

Each worker plays an integral role in executing structured work to accomplish the quality objective. The larger the dairy the more important is the need to encourage teamwork.

Building teamwork starts at the time of restructuring work. Soliciting input from each worker when redesigning work generates more and better ideas than when only management or a few employees study work processes. Employees feel part of the process change and take ownership of the modified or new process or system they've helped to create. They don't want their ideas to fail. The result is an attitude change in the minds of workers who start working for "results" rather than simply for "activity".

Simply asking employees "what do you think?" begins the process of participatory management. This can be done informally or during an employee meeting to brainstorm in which:

- all workers provide ideas
- there is no discussion during brainstorming
- there is no judgement concerning ideas brought out
- then after all ideas are written, discussion ensues to build upon the ideas presented.

The best of several brainstorming ideas generated by workers during the meeting are selected by the technique called multivoting:

- all similar ideas are combined
- everyone in the meeting chooses his/her best idea by voting for one, best solution
- tally these votes
- reduce this list to the most popular items
- repeat the process until a single favorite solution remains.

This process arrives at "consensus" which is finding a proposal that is acceptable enough that all workers and the owner can support and none oppose.

Creating teamwork requires qualified players, the workers, and a cooperative coach, the owner, who has the desire and capability to provide leadership to employees. Management with this level of participation is not a democracy...ideas and input are essential, but one person is still ultimately responsible for final decisions.

MONITORING RESULTS

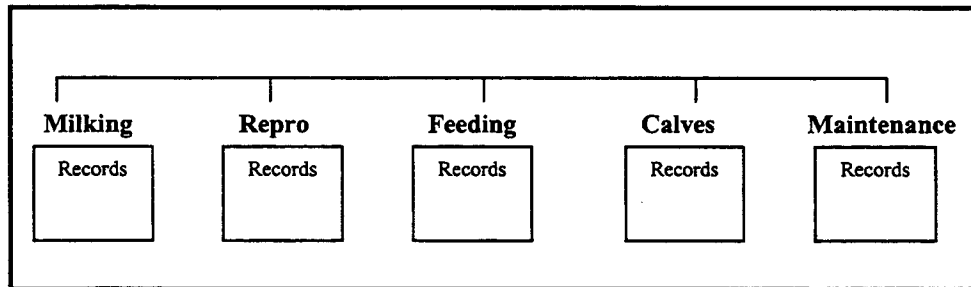
Records are an essential component of every successful business; they monitor results. When appropriate records indicate results meet goals (the qualitative objective), workers develop confidence that systems work and they are intrinsically motivated. When results are not to expectations, then the system of work is incorrect and needs adjustment or workers are not implementing the system of work correctly. Troubleshooting, retraining and discipline are required to get back on track.

Each unit or department of the dairy needs to be evaluated monthly. Specific records should contain:

- exact definitions of what data are to be collected
- goals, or quantitative units, objectives
- actual monthly performance

An example of the concept of how records can summarize performance of each department matched with the organizational diagram of a dairy is given in Figure 16.

Figure 16



The records to monitor each department are simulated and used in a four-step process:

- collected
- analyzed
- interpreted
- acted upon

Monthly meetings between owners and workers to review results are how the “collected data become the basis for action”.

SUMMARY

“Quality isn’t expensive, it’s priceless”. It takes as much time, money and effort to do something incorrectly as it does to do it correctly. Dairymen face the same challenges to demonstrate profit and respond to the demand for greater efficiency and improved quality as do manufacturing and service businesses. Economic pressures and the continuing growth in the size of dairies will ultimately force change to improve management systems. Implementing DairyWorks management principles can result in increased profit through quality for the owners and managers of today’s dairy herds.

REFERENCES

1. Crosby, Phillip B.: Quality is Free, McGraw-Hill Book Company, New York, 1984.
2. Garvin, David A.: Quality on the Line, Harvard Business Review, Sep.-Oct. 1983.
3. Imai, Masaaki: Kaizen, New York, Random House, 1986
4. Joiner, Brian and Peter Scholtes: The Quality Manager's New Job, Quality Progress, Oct. 1986.
5. Juan, J.M.: Quality Control Handbook, New York, McGraw-Hill Book Company, 1974.
6. Scholtes, Peter R.: The Team Handbook, Madison, WI, Joiner Associates, 1988.
7. Walton, Mry: The Demeaning Management Method, New York, Dodd Mead & Company, 1986.