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## Dairy Herd Monitoring - A Tool to Success (Part 2)

In the previous article, we reviewed the steps to evaluate your dairy operation and how to set goals for continuous improvements. One of the critical areas in evaluating any enterprise is the development of a system that allows you to evaluate different aspects of your farm against industry benchmarks or specific goals. Once you have decided on areas that require improvement and how to achieve those changes, the next step is to properly evaluate the decisions or strategies implemented. This allows you to assess the effectiveness of any management or capital changes that have been made. Remember - proper evaluation requires accurate INFORMATION.

Information that can be used to decide what should be improved on the operation, how to best accomplish your goals, and evaluating the changes that were adopted requires DATA. Data is collected through ROUTINE MONITORING and then converted to useful INFORMATION. It is important to understand what these terms mean and appreciate how they can assist you in managing your operation.

DATA are the individual events that happen on your operation. Data alone should not be used to make changes to current on-farm practices. Examples of data from a dairy herd are : cow # 24 calved today with a bull calf, heifer # 456 was bred to bull # HO 0200001 or AMY (calf) was treated for diarrhea.

INFORMATION is the accumulation and analysis of data so that it becomes a useful basis for evaluating current management practices on the farm, feeding programs, or cow environment issues. Information examples are : 12 cows calved in January '97 and 7 cows had retained placentas; 10 heifers were bred in February '97 of which 7 were confirmed pregnant after the first breeding; since buying 4 calf hutches in Sept. '96 the incidence of diarrhea in young calves has dropped by 75%. All of these statements allow us to evaluate what is occurring on the farm and to decide if the changes that were made have helped to reach a particular goal.

ROUTINE MONITORING is the regular collection of on-farm data events in a systematic, strategic basis. A proper monitoring program ensures that proper and current data are collected, converted to information and evaluated on a regular basis so that corrective actions can be taken before a problem becomes too serious.

The following diagram illustrates the 3 basic phases of the monitoring process: (Fetrow, 1991)

This diagram shows how the current status of a dairy operation is assessed and how a goal is set for an area of the operation. An action plan is developed which will adopt certain farm changes in order to attain the goals that were initially set. The affected area of the operation is then followed through routine collection of data, its analysis into useful information, and the resulting performance outcome is compared with the initial goal or standard that was set. This process is continually happening in any enterprise and is the basis for continuous improvement. One important point that should be emphasized from the diagram is the role of outside factors which influence the initial goal and can affect the performance outcomes.

These external factors play a vital role in herd performance. These factors could include : losing a good herdsman, poor forage growing conditions, or higher grain prices which result in increased annual purchased feed costs. Any of these factors could reduce the operation's cash flow and delay improvements to facilities or prevent reducing the debt load during the next year. These external factors can also reduce herd performance when compared with the previous year and unfortunately we can rarely predict or control these factors. It is only when we have information that we can evaluate these external factors and see how they impact the various aspects of the operation. Monitoring is a dynamic process which must constantly adapt to these external factors called "real life", along with the new goals and priorities that are set as a result.

Routine monitoring is a beneficial tool that can help ensure success into the future for any enterprise . Most producers already use at least portions of the above system for different aspects of their farm, although fewer apply its principles to the entire operation. There are several reasons for this :

The key element of any routine monitoring program is the ROUTINE COLLECTION OF DATA. This requires discipline and an organized system that ensures data is collected effectively and analyzed into information. Few of us like to write things down in our day. There are always other things to do and the " I'll remember it" phrase comes up often. With the increasing daily demands of managing a dairy operation, no one person can collect and analyze all of the data that occurs daily on a dairy operation. Carrying a small notepad and pen in your pocket throughout the day can help to collect data that are important to achieving your goals. In the early stages, it requires discipline to record daily events but when you see the results of the analyzed data; it becomes much easier.

Another common challenge with routine monitoring is that during the initial stages of the program people collect all of the daily events on the farm for the first few weeks but then tire of all the writing and pile of paper around the office. It is important to collect only the data that will be used to evaluate, change or monitor the particular aspect of the operation you would like to improve upon.

### **COLLECT ONLY THE DATA YOU WILL USE AND USE ONLY THE DATA YOU COLLECT**

is an excellent saying when evaluating your note taking. An example would be : You want to decrease the age at first calving to 24 months for heifers. Collecting data on sick calves, recording average growth rates and evaluating the nutrition programs for the replacement herd are all important in determining your progress to achieving your goals. However ,

collecting data on fresh cow diseases, sex of calves born, and dry off dates are not applicable to improving the heifer raising program.

Be critical of the data as well. Take into account exceptional events in your data collection as well and possibly discount it from analysis if it is not representative. For example, if one heifer was very sick when younger and developed a chronic lung problem which impaired her growth and development, her individual data might be excluded when analyzing the replacement herd's performance. On the contrary, if you have several chronic lungers in the herd which is reducing the overall replacement herd averages, then it is important to record these heifers and evaluate what can be done to prevent further cases of pneumonia in the younger animals and its impact on performance.

Let's review a real world example :

John operates a 50 cow farm and raises his own replacements. He is satisfied with the current production, mastitis and reproduction in the herd but is concerned about the early lactation cow program. He has too many milk fevers and retained placenta cases. John's daughter Linda helps with the milking and is responsible for herd's feeding program.

During September , John had no milk fevers and only 1 retained placenta case. In October, John had 1 milk fever and 4 retained placentas in the fresh cows. In November, there were 2 milk fever and 3 cows with retained placenta.

Based on the above information, what are your conclusions ? Should John be concerned about his dry cow program ? Should he change how the dry cows are managed and fed? What would you do under similar circumstances ?

Let's look a little deeper into the problem. Since last July, Linda has been keeping track of all calvings and writing down any problems the fresh cows experience. She keeps track of the heifer growth charts and routinely checks the monthly Ontario DHI sheets for trends in herd performance.

John talks to Linda about his concerns about the herd's dry cow program with all of the problems they have been having recently, the higher veterinary bill and increased monthly feed costs compared with the milk cheque. John thinks that the present dry cow program should be changed and a more expensive mineral supplement used by his neighbor will surely help. He also wants to put the dry cows back in with the milking cows which is what they used to do and had fewer problems. Linda responds that there is no problem with the dry cows, but rather the herd's heifer program needs more attention.

Linda explains the following points, which John neglected to realize because he was focusing only on the number of sick fresh cows lately :

- 1) There were 2 calvings in September '96, 12 calvings in October and 14 calvings in November. Of the 12 calvings in October, 7 were heifers and 4 had large bulls calves, with one requiring a c-section. The 14 calvings in November were mostly older cows, including the 5 oldest cows in the herd.

2) Since last year the overall, herd incidence of retained placenta has decreased from 20% to 5% and milk fevers are down to 7%. The average age in the milking herd has increased by 0.75 lactations over the same period.

3) The dry cow program that was implemented last March, along with the addition of 2 new box stalls and a close up dry cow program appears to have improved the dry cow problems from last year.

4) The heifers have consistently charted below the normal height chart and are overweight. The average age at first calving is 28 months and 30 % of heifers are treated for either diarrhea, pneumonia or both.

Now what are your suggestions ? Based on the initial DATA that John reported, his concerns about the dry cow program were justified, but when the data are included with past performance and turned into INFORMATION, the conclusions are much different. Routine collection of data which is translated into information and used on a regular basis for comparison is an important tool for successfully managing your operation. It becomes easier to evaluate proposed changes to an area of the operation and to predict their economic impact. In this example, John's new mineral program would cost an additional \$400 per year. Assuming that the incidence of calving diseases would increase back to last year's levels if the dry cows were grouped with the milking cows, this could account for losses of at least \$2500 - \$ 4000 per year in reduced fresh cow performance, higher culling, and higher treatment costs. On the other hand, improving the heifer program with a properly balanced feeding program would potentially cost about \$ 500 more per year but the benefits of earlier age at 1<sup>st</sup> calving for the heifers and producing milk sooner with more efficient use of facilities has been estimated to give a net improvement of at least \$ 250 per heifer raised. That means in John and Linda's herd, raising 25 heifers per year, would yield about \$6000 per year. Using data that is converted to information can influence which corrective action to implement and ultimately influence herd performance and profitability.

Let's assume that John agrees that the heifer program needs more attention than the dry cow program - what is the next step ? They need to establish a routine monitoring system to evaluate any new changes to the existing heifer program. They should plot the heifer's growth rates (height and weight) prior to beginning the new program in order to identify what stages during the heifer growth program need improvement and to develop a strategy that can correct the identified challenges. The next step is to implement an action plan to re-measure the heifers in 6 months to evaluate the new changes. Their goal is to focus on getting heifers big enough to be bred by 14 months of age in order to achieve their goal of first calving at 24 months. To monitor age at first calving, we will have to wait at least 9 -12 months before we see any improvement because the heifers must be bred first. This parameter can be collected from the milk recording summary sheets and its progression monitored for all new heifers entering the herd. Ontario DHI does an excellent job of collecting production information and somatic cell counts. The recent introduction of the Dairy Comp 305 system will allow DHI to record any data that their customers require in order for it to be converted to information to assist with achieving your herd's goals.

Managing a dairy operation is a complex job, but timely management is critical to its success. It is too easy to get caught up in the daily activities of the farm and lose sight of what you would like to accomplish in your herd. Goal setting is an individual process - one producer's goals will not match his neighbors, but it requires accurate and current information from all aspects of the operation in order to effectively prioritize an action plan to achieve those goals. The information that is used must be based on an effective system of data collection on the farm, involves routine analysis and monitoring for progress. When we have access to accurate information on a routine basis, we are better able to manage the operation - and not let our daily activities manage us.