

Records and Record Systems—The Backbone of Good Management

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A record is an accounting of events or data. Actually, records do very little except to remind one of an event. Records must be processed or summarized in order to provide information. Information is required to make sound management decisions, yet poor record systems are common and costly. Dairy producers often try to commit too much to memory. Very few individuals have total recall and decisions made with limited or inaccurate information can be very costly.

Purpose

The information that records provide serve many purposes. A few are as follows:

- Day to day management decisions
- Financial accounting and taxes
- Measure progress
- Troubleshoot problems
- Genetic evaluation
- Enterprise evaluation
- Aid recovery of stolen property
- Planning future actions
- Research

Some records are a requirement for tax purposes, some are vital for management, some are just useful and some may never be used except in an emergency.

The method by which records are kept are as varied as farms and the individuals who keep them. There are many good systems which include card systems, tags, color coding, wheels and computers. Each has its own merits and inadequacies. No matter what the system, it must be suited to and be modified by those who use it. Most importantly—it must be kept up-to-date. Incomplete or incorrect records can be as useless as no records and often more frustrating.

This fact sheet will discuss the minimum records that should be kept. Management records will be stressed because financial records are often dictated by tax laws. Various record retrieval systems exist and are a matter of personal taste.



IRM-4

Dairy Integrated Reproductive Management

Because it would take several pages to describe each system, specifics about them will be kept to a minimum. Instead, record systems in general will be discussed in terms of their functions as they apply to the dairy enterprise. Functions and principles discussed apply to computerized as well as hand-kept records.

Characteristics

Every good record system should have the following characteristics:

- Easily updated
- Easily understood
- Easily summarized
- Current

These characteristics are vital if the records are to provide useful information. There are three steps in record keeping and information dissemination.

1. Recording of temporary record
2. Transferring to a permanent individual record
3. Processing or summarization

Temporary Records

Temporary records are usually in the form of a diary or daybook. Events of importance should be recorded in the daybook immediately with all pertinent information. For this reason, a pocket notebook and pen should be carried at all times by all farm personnel.

Occurrences which should be noted in a daybook include estrous (heat) observation, injuries, disease symptoms, calvings, breedings, treatments and other miscellaneous information. All notes should be dated, with time, correct animal identification and other data pertinent to the situation. Situations noted may or may not require immediate attention but in either case, the note should be made immediately. Events committed to memory more often than not fail to get recorded or are recorded incorrectly.

Transfer temporary records to permanent records as soon as possible. Information that is only recorded on a sheet of paper in somebody's pocket is of little value. After transfer of data, file the temporary record by date in order to verify permanent records at a later date if needed.

Permanent Record

Each animal in the herd should have an individual permanent record that is initiated at birth or when purchased. This permanent record can be broken down into several basic parts as will be described. Format of sections may vary from farm to farm, but the data recorded remains the same no matter what the form. Figures shown in the following sections should be viewed as a suggested format only. The content of the form is what is important.

Calf Record

Initiate a permanent calf record (Fig. 1) the day the calf is born or purchased. The key to the whole system is identification and the best time to identify an animal is at birth, before details are forgotten. Since management decisions, as applied to an individual animal, ultimately rely on proper identification, its importance cannot be overemphasized.

Identification is of two types, permanent and temporary. Permanent identification includes pictures, tattoos and freeze branding. Every animal should have at least one form of permanent identification. Examples of temporary identification include neck chains, ear tags and ankle straps.

The next most important piece of information is the birth date. Nutritional requirements, breeding, show classes and genetic evaluations are all dependent on the age of an animal which is a function of birth date.

Sire and dam information is needed for genetic evaluation and for planning future breedings. The sex, birth weight and calving difficulty all have a bearing on genetic evaluation of the sire for calving ease. Vaccination dates are important when shipping animals across state lines. The genetic values are useful criteria for culling purposes and also indicate resale value.

Calf ID:		Registration, Vaccination or Tattoo No.:		Date of Birth:
Sire:		Sex:	Birth Wt.:	Difficulty:
Dam:		Genetic Value—Milk:		Genetic Value—Fat %:
Vaccination:	Date:	Dehorned:		Disposed:
		Comments:		
Picture				

Fig. 1. Permanent calf record.

Health Record

The health record (Fig. 2) may or may not be an integral part of the calf record. If it is, the identification and birth date need not be repeated. This record should contain information about any disease or injury the animal contracts or sustains and any special health tests it has undergone. The date should be noted along with pertinent facts regarding the disease, injury or nature of the test. The treatment, if any, should be recorded as well as the results and cost of treatment including any lost income such as for milk withheld.

Health records can be used as a criteria for culling. They also contain information useful for tracking health problems in a herd and may provide clues regarding future ailments.

Estrous Detection History

Like health records, records of estrus (Fig. 3) can be incorporated into the calf record. Additional records of estrus for each individual lactation should be recorded as well. This record requires only identification, birth date, lactation number and dates in estrus which should be recorded, even if breeding is not intended.

Poor estrous detection is recognized as the primary factor affecting poor breeding efficiency. The estrous detection chart is primarily intended to aid and improve estrous detection. Cows average 21 days per estrous cycle. Knowledge of the last day a cow was in estrus can be used to predict the next estrus simply by adding 21 days. If the cycle varies from 21 days, then by observing several cycles, an individual cow's own cycle length can be determined which further aids the prediction of the next estrus.

By knowing when to anticipate the next estrus, the person in charge of estrous detection will know which cows to watch, thereby improving chances of spotting cows in estrus. This is also true for animals that have already been bred. Many herd personnel assume a cow is settled the first time and do not look for that cow to come into estrus 21 days later. An estrous detection chart will help overcome the problem by making personnel aware that the cow may come back into estrus.

An estrous detection history is also useful in diagnosing breeding problems. Cows that deviate significantly from a normal cycle may be suffering from cystic ovaries (Fact Sheet IRM-25) or other ailments. Other cows may not exhibit any outward signs of estrus (Fact Sheet IRM-7). Still others may be cycling normally and the problem may be with the breeding technique (Fact Sheet IRM-12), especially if many cows are involved.

Many dairy producers record estrus or breedings for all cows on a single chart. That method will not substitute for an individual cow's estrous detection record, especially when trying to troubleshoot a breeding problem. For example, it is difficult to establish estrous cycle lengths on individual cows when information on all the cows is on a single chart.

Cow ID:		Date of Birth:		
Date	Symptom, Injury or Test	Treatment	Result	Cost

Fig. 2. Cow health record.

Cow ID:		Date of Birth:			Lactation:			
Date	Estrus (heat)							
	1st	2nd	3rd	4th	5th	6th	7th	8th
Service Sire								

Fig. 3. Estrous detection and breeding records.

Breeding and Calving Record

Once a cow is bred or confirmed pregnant, record the date on the breeding and calving record (Fig. 4). There should be one breeding and calving record for each lactation. It can be combined with the production information to form a lactation record.

The breeding-calving record provides information regarding drying off, when to prepare for calving and information with which to initiate a new calf record. Previous calving records on an individual cow may give information on what to expect in an upcoming freshening with regards to calving difficulty for instance. Following calving, record the results of a reproductive tract exam. This information may be recorded in the health record as well.

Feeding and Production Record

The purpose of keeping a record of feed consumed and milk produced is to assess the profitability of a cow, ascertain nutritional requirements and genetic evaluation. A record need not be kept for every production day; however, a record should be made at least once a month during lactation. An example of a method for recording feed and production records is given in Fig. 5. Provisions are made to record lactation number, which is an important consideration for animal evaluation, and weight, which needs to be considered for ration formulation.

A single day's ration can be reported in either its component parts or as a total mixed ration. Milk can be easily weighed, but fat and protein percents must be obtained by laboratory measurement. Income over feed costs is dependent on the current feed and milk prices.

Somatic cell counts are extremely useful as an indication of mastitis levels. Like fat and protein, somatic cells must be obtained by laboratory measurement.

Examples in Figs. 1-5 do not specify every piece of information which could be used, but should be considered a minimum of what should be recorded. Again the form may vary, but the content should not.

Summary Sheets

Permanent records are a good source of information for individual cows, but do not provide adequate information for the herd. Several lists, summaries and herd statistics are needed to make full use of records. For example, lists should include rankings of cows by production for grouping purposes, cows due for health checks and cows due to freshen. Useful statistics include the average herd production, average calving interval, somatic cell counts and other management information. The card systems, tape systems, color codings and wheels are methods by which summarizations can be facilitated.

Cow ID:		Date of Birth:			Sire:		
Lactation No:		Date Bred:	Service Sire:		Confirmed Pregnant:		Date Due:
Calving Date:	Age:	Cow Weight:	Postpartum Exam			Rebreed Date:	
			Date:		Result:		
Calf ID:	Sex:	Calf Weight	Difficulty at Birth		Condition		Disposal Date:
Comments:							

Fig. 4. Breeding and calving record.

Dairy Herd Improvement (DHI)

DHI records are an excellent method for keeping many of the records discussed. DHI is supervised by managers and state boards. Each state association must conform to uniform national rules.

There are many options for recording data including traditional DHI, where a supervisor visits the herd for a morning and evening milking to weigh and take samples of the milk approximately once per month. DHIR is a similar program, but records are forwarded to breed associations for official registry. Other variations include AM-PM where the supervisor visits for only one milking, owner-sampler (OS) in which the owner takes the samples and milk only records (MOR).

Supervisors collect data on all calvings, breeding dates, dry dates and identification. They may also record data for extra options such as calf data, nutritional records, pregnancy checks and other items. A complete DHI program will include many of the records discussed previously.

DHI is an improvement over manual on farm systems because summary sheets and herd statistics are produced monthly. Many of the summary sheets are part of the basic program. Others are available as options such as genetic herd summaries, somatic cell testing, ration balancing and action sheets such as lists of cows to dry off or heifers to breed and cull candidates.

Most Dairy Record Processing Centers (DRPC'S) now offer on-line service so that records may be accessed anytime and customized reports may be obtained using an on-farm terminal and telephone lines. Shortly, some DRPC'S will offer options allowing dairy producers to enter data directly for such records as herd health.

The value of DHI is obvious. In 1982, 40,933 herds were enrolled in DHI in the U.S. The average production per cow for herds on DHI was 15,274 pounds versus 12,316 pounds for those not on DHI. Being on DHI won't make a better dairy producer, but better dairy producers use DHI.

Date	Cow ID				Date of Birth:						Lactation No.:			Body Weight	
	Grain Fed		Forage		Pasture		Minerals		Total Feed		Production			Income Over Feed Cost	Somatic Cell Count
	lbs.	\$\$	lbs.	\$\$	days	\$\$	lbs.	\$\$	lbs.	\$\$	Milk lbs.	Fat %	Protein %		

Fig. 5. Feed and production record.

Semen Inventory

Many dairy producers currently do their own artificial insemination and consequently own large inventories of semen. A semen tank for a herd of 100 cows may contain \$25,000 worth of frozen semen. Such a delicate valuable resource should be inventoried carefully.

Fig. 6 illustrates a simple method for recording semen inventories. The wheel is made of wood or plastic and hangs on the wall near the tank. The wheel is divided into as many sections as the tank (in this case 6) and numbered accordingly.

Each small circle represents a piece of tape or removable tag which represents one cane of semen. Contents are identified by NAAB code as the cane would be, the bull's name and the date the semen was received (see blow-up). Each stick represents one unit of semen and is crossed out as the semen is used. In the center of the wheel is a place for recording nitrogen levels, filling dates and notes.

On Farm Computers

Computers are the latest technology to be adopted by farmers and their use will continue to increase. The power of the computer lies in its speed of computation and storage capabilities. It can store information more efficiently than paper files, and data is only entered once. The computer's computational power allows one to write reports, make lists and calculate statistics. Otherwise, no dairy producer would have time to summarize this extremely useful information. The computer is also a useful tool in planning for future changes and enterprise evaluation since "what if" questions are easily answered.

Like DHI, computers will not improve an inaccurate record system. The computer is a powerful tool for processing data into information but time must still be spent recording the data before the tool becomes useful.

Summary

As more milk is produced by fewer cows on larger farms with narrow profit margins, records become ever more important for the survival of a single operation. The science of dairy farming has become too complex for farmers to make decisions relying strictly on memory and intuition. The informed dairy producer will make the correct decision more consistently than the uninformed one. The successful dairy producer will depend on records.

As farming becomes more complex, so will records and the information from those records will need to be more detailed and precise but the characteristics of a good record system will remain basically the same. They must be accurate, current and complete to be of value.

References

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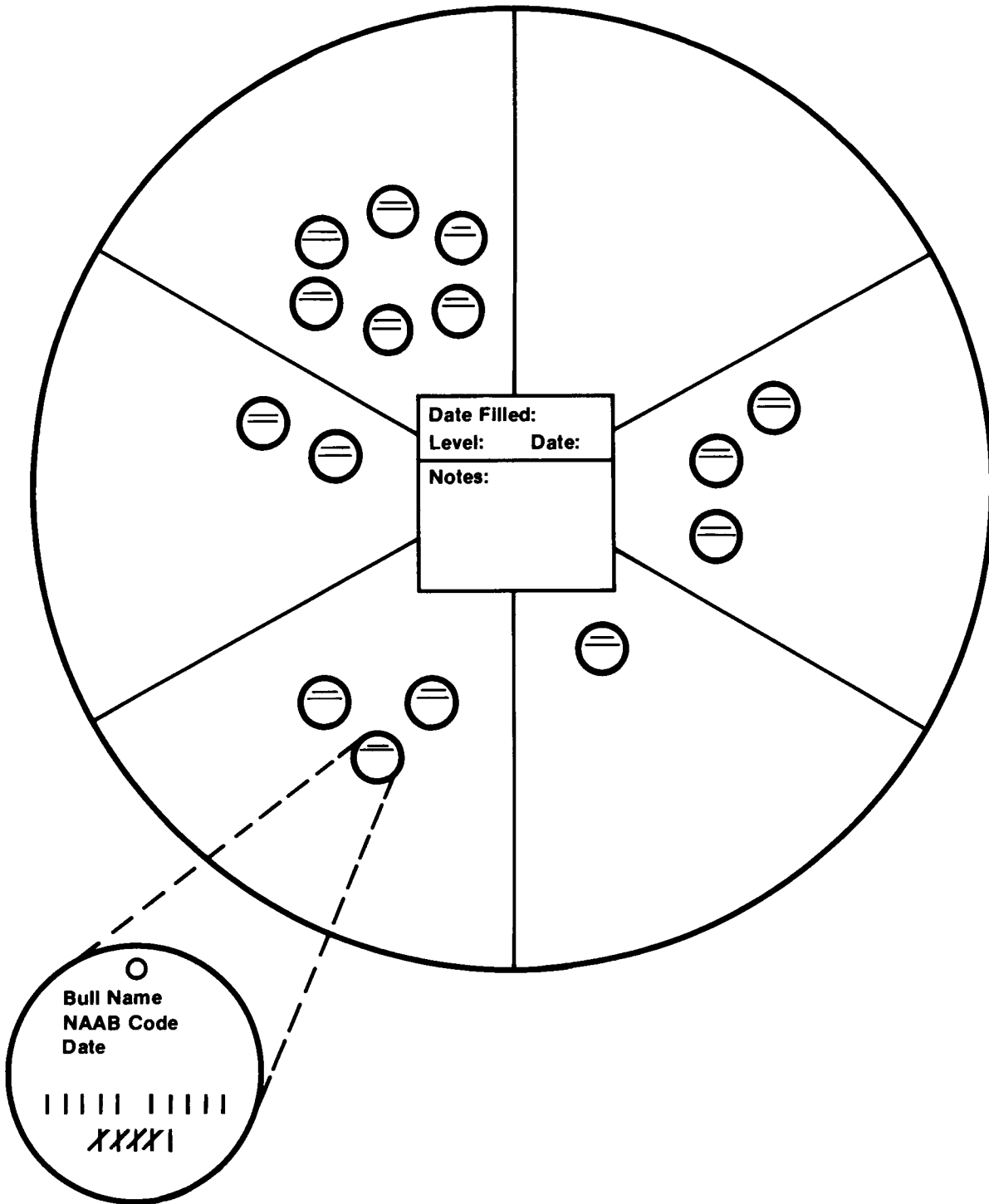


Fig. 6. Semen inventory wheel.