

DAIRY RECORD EVALUATION



BASICS

OVERVIEW

- Dairy farms constantly generate significant amounts of data. When timely used, this information can substantially improve the daily operation of the system.
- To be successful, dairy operations must be run by a competent management team, which may consist of the owner, herdsman, veterinarian, nutritionist, banker or loan officer, extension agents, outside consultants, and others.
- The dairy management team uses a variety of tools for making decisions, controlling risk, and allocating resources. Farm records are one source of information that management may use for evaluating production performance, labor efficiency, manure management, cow comfort and welfare, as well as feed quality, inventory and feeding practices. This chapter focuses on the use of dairy production performance records.
- Dairy production records include individual animal disease events, medical treatments, withdrawal times, disease incidence risks, and production or performance data.

Record keeping is an extremely important part of the management process, but managers differ in their ability and desire to keep and analyze records.
- Veterinarians are key individuals in helping to motivate, coach, and lead producers to collect key herd health, production, and reproduction values for the herd that impact the economic well-being. Veterinarians can also make important contributions via routine herd visits and by careful analyses of both the on-farm records as well as more in depth secondary calculations, projections, or temporal comparisons.
- With adequate and accurate records and proper interpretation, the current level of performance can be estimated as well as any improvement or decline in performance over time.

INCIDENCE/PREVALENCE

N/A

GEOGRAPHIC DISTRIBUTION

Worldwide

SYSTEMS AFFECTED

Multiple systems

HISTORICAL FINDINGS

- Production, reproduction and health records are evaluated routinely during herd health visits
- Record evaluation is key to any investigation on health, production or reproduction problem
- Herd record should be evaluated following any action or modification in herd management

SIGNALMENT

- All breeds of dairy cattle. Mostly adult cows

PHYSICAL EXAMINATION FINDINGS

N/A

CAUSES AND RISK FACTORS

N/A



DIAGNOSIS

DIFFERENTIAL DIAGNOSIS

- Analysis of production, reproduction and health record may help in refining a diagnosis on herd level regarding causes of poor productivity

CBC/BIOCHEMISTRY/URIANALYSIS

N/A

OTHER LABORATORY TESTS

- Some laboratory tests may be implemented based on the data analysis for further evaluation nutritional, health or reproductive disorders

IMAGING

N/A

OTHER DIAGNOSTIC PROCEDURES

- Depends of record analysis results

PATHOLOGIC FINDINGS

N/A



TREATMENT

THERAPEUTIC APPROACH

N/A

SURGICAL CONSIDERATIONS AND TECHNIQUES

N/A



MEDICATIONS

DRUGS OF CHOICE

N/A

CONTRAINDICATIONS

N/A

PRECAUTIONS

N/A

POSSIBLE INTERACTIONS

N/A



FOLLOW-UP

EXPECTED COURSE AND PROGNOSIS

- Good records can vary from something as simple as individual cow index cards (very common in small dairies) to fully computerized on-farm record systems that interface with milking, activity/behavior recording, or feeding systems.

As operations increase in size or production intensity, the need for reliable records and information management systems increases. An ideal record keeping system, regardless of size, includes:

- Individual animal identification, disease and production information

- Ease of use in data entry and interface platforms allowing intercommunication among all the data sources.

- Common and consistent nomenclature that facilitates accurate interpretation of data

- A logical structure that facilitates retrieval of data on both an individual animal as well as on a group of individuals

- The ability to output action lists for management purposes

- The ability to interact with national or regional testing organizations

- Flexibility to allow for the development of custom reports/graphs

- Rapid analyses of data for prompt reporting

- Tools to make correct economic decisions for the producer

- The ability to store data for portability and archival purposes
- General principles of record keeping include:
 - “If you can’t measure it, you can’t manage it.” It is impossible to measure change if you don’t have a good idea of the current baseline level of production or performance.
 - Record information that is currently useful for making management decisions or that will aid in future decision making (if it is not going to be used, don’t bother recording it).

- Quality records start with clear definitions: who will collect the data; when, where, what and how data is to be collected and recorded; and how data will be used (without clearly defined roles and data forms, nobody does it well).
- Typically, failures in the record keeping system involve failures to correctly record an event when it occurs, losing the form used to collect the data, or incorrectly inputting the data.
- Feedback is critical to reinforce quality record keeping. Regularly review the farm management goals and performance to make sure that the business is on the right track, add new items for monitoring, delete unnecessary items for monitoring, and provide feedback to the data recorders.

Potential areas for monitoring on dairies

Youngstock health

Prewaning morbidity/mortality risks

Age at first breeding

Heat detection rate

Pregnancy rate

Age at first calving

Herd/age-based vaccinations and dewormings

Dry cow period

Days dry

Somatic cell count at dry-off

Move date to close-up pen

- Days in close-up pen

Dry matter intake

Preparturient disease incidence

Herd-based vaccinations and dewormings

Lactating cows

- Dry matter intake by stage of lactation/production

Days in fresh pen

Morbidity/mortality information (mastitis, lameness, etc.)

Days in milk at first breeding

Pregnancy rate

Percent of herd pregnant

Days in milk distribution for herd

Risk of abortion

○ Height and weight changes over time

○ Conception rate

○ Days pregnant at dry-off

○ Body condition

○ Postparturient disease incidence

○ Body condition by stage of lactation

○ Physiological and activity parameters (rumination time, standing time, step count, etc.)

○ Conception and heat detection rates

- Total cows milking and dry
- Test date information: milk production, percent fat, percent protein, somatic cell count
 - First test milk production as well as days in lactation at first test
 - Peak milk production and days in lactation at peak
 - Projected calving patterns for the next 6 months
 - Herd-based vaccinations and dewormings

POSSIBLE COMPLICATIONS

N/A

CLIENT EDUCATION

- Importance of dairy recording systems, data reliability and regular analysis of data

PATIENT CARE

N/A

PREVENTION

N/A



MISCELLANEOUS

ASSOCIATED CONDITIONS

N/A

AGE-RELATED FACTORS

- Specific data gathering and targets should be set of different age groups, especially for heifer growing operations

ZOONOTIC POTENTIAL

N/A

PREGNANCY

N/A

BIOSECURITY

N/A

PRODUCTION MANAGEMENT

Dairy production records are useful for recording individual animal disease events, medical treatments and necessary withdrawal times, disease incidence risks, and production or performance data.

Record keeping is an extremely important part of the management process, but managers differ in their ability and desire to keep and analyze records.

Specific Record Keeping Systems

- **DHIA** (Dairy Herd Improvement Association): An organization of producer members whose purpose is to provide the framework on a national or regional level for a uniform and accurate record system that will promote improved accuracy, credibility, and uniformity of dairy records. These standardized records are used for making farm decisions, genetic evaluation of both cows and sires, and the promotion and sale of animals for dairy purposes.
- **Dairy Comp 305™**: A commercial software package marketed and supported by Valley Agricultural Software. It is an on-farm microcomputer program known for its flexibility. It can be customized to a variety of dairy management styles, connects with all cooperating DHIA centers, and can calculate its own production information. In addition, it is capable of connecting with on-farm milking systems. For more information, visit <http://www.vas.com>

DHI-Plus™ for Windows™ Herd Management Software: Another microcomputer-based program that has many unique menu-driven features. It is distributed by DHI Computing Service, Inc., and has the ability to benchmark one herd's performance against other herds. It uses drag and drop tools to allow users to build dairy-specific reports and is also capable of integrating with many parlor automation programs. For more information, see <http://www.dhiprovo.com>

PCDART™: Another herd management software program that comes with many pre-loaded management reports as well as report creation and printing features. It is supported by Dairy Records Management Systems. PCDART™ generates inventories, projections, and summaries just as the other programs, and also interfaces with most automated milk weighing systems. For more information, see <http://www.drms.org>

The 3 software programs mentioned above are the most commonly used dairy management programs in the U.S. A partial listing of some of the other agricultural software programs not listed here may be found at <http://www.agrilaunch.com/index.htm>

Emerging technologies generating individual cow data

The combination of increasing sizes of dairy operations and the availability of precision technologies at lower cost has resulted in the implementation of automated monitoring systems for milk yield, cow fertility, health, and welfare. Areas of special interest are reproduction and the continuous monitoring of animals at risk of disease. In addition to activity measurements, rumination activity has been suggested as an indicator of cow overall health and wellbeing. Recently developed accelerometers have facilitated the development of behavioral models that can be combined with rumination activity to detect disease, estrus, and disturbances in baseline cow patterns. Sensors incorporated to the milking line can also detect markers for ovulation, pregnancy, mastitis, and metabolic status. Other new resources include boluses monitoring rumen pH and temperature, weigh sensors for lameness detection, and video image analyzers that can provide estimations of body condition and locomotor disorders. Significant research efforts are currently focused on establishing clear cutoff values to set alarms for decision making, based on these newly available data.

SYNONYMS

N/A

ABBREVIATIONS

DHIA = Dairy Herd Improvement Association

DHI-Plus™ = herd management software program distributed by DHI Computing Service, Inc
PCDART™ = herd management software program supported by Dairy Records Management Systems

SEE ALSO

- Body Condition Scoring: Dairy Cattle (www.fiveminutevet.com/ruminant)
- Dairy Reproduction (www.fiveminutevet.com/ruminant)
- Lameness: Bovine
- Mastitis: Bulk Tank Monitoring and Somatic Cell Counts (www.fiveminutevet.com/ruminant)
- Parasite Control Programs: Dairy
- Total Mixed Ration: Dairy(www.fiveminutevet.com/ruminant)

Suggested Reading

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