

Scientific record keeping for profitable livestock farming

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Abstract

Scientific record keeping is one of the most important yet often overlooked aspects of successful livestock farming. Accurate and systematic records enable farmers to monitor animal performance, evaluate production efficiency, improve breeding decisions, manage health programs, and increase farm profitability. Proper documentation of milk yield, growth rate, feed consumption, reproductive performance, vaccination schedules, disease history, and financial transactions provides valuable information for effective farm planning and management. In modern livestock enterprises, record keeping has evolved from traditional notebooks to digital platforms and mobile applications, making farm management more efficient and data-driven. Well-maintained records help identify high-performing animals, monitor production trends, reduce unnecessary expenditures, and facilitate timely veterinary interventions. They also support compliance with quality assurance programs, livestock insurance, traceability, and government schemes. Scientific record keeping improves decision-making by enabling farmers to analyze production costs, evaluate economic returns, and identify areas requiring management improvement. This article highlights the importance of systematic record keeping, different types of farm records, modern digital tools, and best management practices that contribute to sustainable and profitable livestock farming.

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Introduction

Livestock farming has transformed from a traditional occupation into a scientific and commercial enterprise where informed decision-making determines success. While nutrition, breeding, and disease control are fundamental components of livestock production, maintaining accurate farm records is equally important for improving productivity and profitability. Scientific record keeping provides farmers with reliable information about every aspect of farm operation, enabling them to evaluate animal performance, monitor health status, plan breeding programs, and manage finances efficiently. Many livestock farmers rely on memory or incomplete records, making it difficult to assess farm performance or identify production losses. Proper documentation helps farmers compare current performance with previous years, identify management deficiencies, and adopt corrective measures. Today, digital record-keeping systems, mobile applications, and cloud-based farm management software have made record maintenance easier, faster, and more accurate.

Importance of record keeping

Accurate records form the foundation of successful livestock management. They provide reliable information for planning breeding schedules, monitoring milk production, evaluating growth performance, controlling diseases, and estimating production costs. Farmers can identify productive animals, cull poor performers, monitor feed efficiency, and improve reproductive performance through systematic record analysis. Record keeping also assists veterinarians in understanding disease history, vaccination status, treatment protocols, and reproductive disorders, leading to more effective healthcare management. Furthermore, proper documentation is often required for livestock insurance, bank loans, quality certification, government subsidy schemes, and traceability programs.

Types of livestock records

Every livestock farm should maintain records related to production, reproduction, health, nutrition, finance, and inventory. Individual animal identification using ear tags, RFID tags,

tattoos, or electronic identification systems further improves record accuracy.

Table 1. Essential Records Maintained on Livestock Farms

Record Type	Information Recorded	Purpose
Animal Identification Record	Tag number, breed, age, sex	Individual animal tracking
Production Record	Milk yield, egg production, weight gain	Performance evaluation
Breeding Record	Heat, insemination, pregnancy, calving	Reproductive management
Health Record	Vaccination, deworming, disease, treatment	Disease prevention and healthcare
Feed Record	Feed consumption and ration details	Nutritional management
Financial Record	Income, expenditure, profit	Economic analysis
Inventory Record	Equipment, medicines, feed stock	Resource management
Mortality Record	Deaths and causes	Disease surveillance

Digital record keeping in livestock farming

Technological advancements have revolutionized farm record management. Mobile applications, farm management software, cloud-based databases, RFID systems, and artificial intelligence now enable farmers to maintain accurate records with minimal effort. Digital systems reduce human error, facilitate instant data retrieval, and allow remote monitoring of farm operations. Several livestock management applications provide reminders for vaccination, breeding, pregnancy diagnosis, deworming, and health monitoring. Integration of digital records with wearable sensors and precision livestock farming technologies enables real-time monitoring of animal activity, feed intake, body temperature, and milk production. These technologies improve decision-making while reducing labour requirements.

Benefits of scientific record keeping

Scientific record keeping provides numerous benefits to livestock farmers:

- Facilitates evidence-based decision-making.
- Improves breeding efficiency and genetic improvement.
- Enhances disease prevention and health management.
- Helps identify high-producing and low-performing animals.
- Reduces production costs through efficient resource utilization.
- Supports financial planning and profitability analysis.

- Improves compliance with quality assurance and traceability programs.
- Simplifies insurance claims, audits, and government documentation.
- Assists in evaluating farm performance over time.
- Increases overall farm productivity and sustainability.

Best practices for maintaining farm records

Farm records should be updated regularly and accurately. Every animal should have a unique identification number, and all production, breeding, health, and financial information should be entered immediately after each event. Digital backup of important records should be maintained to prevent data loss. Farmers should periodically review records to identify production trends and management gaps. Training farm workers in proper record maintenance also improves data quality and overall farm management.

Conclusion

Scientific record keeping is an indispensable component of profitable livestock farming. Accurate records enable farmers to monitor production, improve breeding efficiency, strengthen disease control, optimize resource utilization, and make informed management decisions. Modern digital technologies have simplified record maintenance while improving data accuracy and accessibility. By adopting systematic record-keeping practices, livestock farmers can increase productivity, reduce operational costs, enhance profitability, and ensure

sustainable farm development. Effective records provide a strong foundation for long-term not only support day-to-day management but also planning and successful livestock enterprises.

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