Bio Vet Innovator Magazine

Volume 1 (Issue 1) JULY 2024

OPEN ACCESS
Popular Article

Herd Health in Indian Dairy Farming

Dr. Garima Kalra[1], Dr. Rohish Kaura[2*]

[1]Department of Animal Genetics and Breeding, College of Veterinary Science, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, Punjab, India

[2]Institute of Veterinary Medicine and Animal Sciences, Estonian University of Life Sciences, Tartu, Estonia*

***Corresponding Author:** rohish.kaura@emu.ee

DOI - https://doi.org/10.5281/zenodo.13195345

Received: July 24, 2024

Published: July 29, 2024

Introduction

Livestock farming is a key segment of India's agricultural economy, significantly impacting the socio-economic well-being of rural communities. India possesses a vast and diverse livestock resource base, consisting of 303.76 million bovines, 74.26 million sheep, 148.88 million goats, 9.06 million pigs, and 851.81 million poultry, according to the 20th livestock census. The dairy and animal husbandry sector holds particular significance, contributing 4.90% of the total gross value added (GVA) in 2020-21 to the Indian economy, with dairy alone accounting for 24% of the agriculture sector, the highest globally (DAHD Annual Report 2022-2023).

India is the world leader in milk production, accounting for an impressive 23% of global output, with 221.06 million tonnes produced in 2021-2022, with per capita milk availability in India stands at 444 grams per day (20th livestock census). Furthermore, India not only boasts the world's largest dairy herd but also plays a prominent role in other livestock products, ranking third globally in egg production and eighth in meat production.

Livestock production is a profit-driven sector which strongly depends on good farm management practices, including nutrition, housing, health, and other factors. The success of dairy farming relies on producing high-quality milk. It is crucial for dairy operation to prioritize the generation of premium milk by maintaining a healthy herd, offering a well-balanced diet, and implementing effective housing management practices (Noordhuizen and Cannas da Silva, 2009). These factors reflect the understanding that farmer profitability hinges on maintaining a healthy herd, as diseased animals incur economic losses (Breen et al., 2013).

Herd health management involves a strategic approach which aimed to improve the health, welfare, and productivity of a dairy herd by carefully analysing farm relevant data and consistently observing the cows and their environment. This allows for a well-informed and timely decisions that refine herd management practices. The continuous nature of this method requires regular communication with dairy farm owner, personnel and systematic data analysis to ensure that all aspects of the cattle's health and welfare are regularly evaluated.

Globally, the dairy sector is seeing rising demand and milk prices due to population growth, increased health awareness, and stricter quality control regulations (Barkema et al., 2015). Improvements in milk production are linked to various factors such as housing management, nutritional management, and reproductive health management in cows. Herd health programs are designed with the purpose of evaluating and increasing the overall health of herds through regular monitoring, analysis of issues, and implementation of preventive measures (Duval et al., 2018; Svensson et al., 2018). This cumulative approach is essential for tackling the complex challenges in dairy farming and ensuring sustainable practices in the industry.

Why Herd Health Matters?

Herd health programs are dynamic and continuously evolving programs that goes beyond basic veterinary care, evolving into a complete plan of action that combines routine veterinary treatments with effective farm management practices. Implementation, maintenance, and evaluation are all important parts of these programs. Performance targets for health and production are set using data from individual farms. These targets act as benchmarks for ongoing improvement. Regular evaluations and updates help adjust the program based on new information and changing conditions.

The Herd Health approach focuses on maintaining optimal animal health and productivity. Key to these programs are biosecurity measures, which prevent diseases by stopping pathogens from entering the farm. Vaccination strategies that enhance biosecurity by protecting animals from common endemic diseases. Diagnostic tools are crucial for monitoring the herd's health, allowing early detection and intervention. Diagnostic tools like PCR, ELISA, and rapid antigen tests are essential for quickly and accurately identifying infectious agents, allowing for prompt treatment and containment of diseases for example, bulk milk tank (BMT) testing is crucial for monitoring herd diseases like Bovine Viral Diarrhoea (BVD).

Veterinarians serve as the cornerstone of herd health management. Their expertise extends far beyond treatment of animal diseases. They champion in application of disease prevention measures through vaccinations and proper biosecurity implementation. Additionally, they offer invaluable advice on nutrition, housing, and breeding practices, all contributing to improved animal welfare and production. They play an important role in vigilance towards zoonotic diseases and proper use of antibiotics for disease treatments. Through proactive measures, herd health programs aim to minimize the risk of zoonotic disease outbreaks, safeguarding both animal and human health.

Evolution of Herd Health Management:

Globally, Herd Health management programs have advanced significantly with the growth of the dairy sector and increasing demand for milk and its by-products. The inception of these programs originated in the Netherlands in the 1970s and have since expanded to offer a variety of services, including farm visits, reproductive consultations, disease management, biosafety protocols, nutritional guidance, milk production optimization, and animal welfare practices (Ifende et al., 2014). The main goals are to increase milk output, improve health standards, manage diseases effectively, ensure food safety, and promote environmental sustainability.

Following the "White Revolution" and Operation Flood of 1970, which made India self-sufficient and the global leader in milk production, the next revolution could be the adoption of Herd Health principles at the individual farm level. It is now time for India's Herd Health programs, which currently operate primarily at the national level addressing areas like nutrition, breeding, reproduction, disease management, and record keeping, to be implemented at the individual farm level. This shift, given the context of India's dairy structure, has the potential to transform the sector into a model for herd health management. It could connect smaller herds and have a significant regional impact through a bottom-up approach.

Although dairy farming in India has traditionally been dominated by smallholders, there is a noticeable trend towards maintaining larger herds in the Indian dairy sector. Increasing herd sizes not only improves farmer's economic prospects but also creates new job opportunities. The Indian dairy cooperative system provides an excellent opportunity for cooperatives to collaborate with farmers and introduce herd health programs. The evolution of large-scale dairy farming and the integration of technological innovations, whether by private dairy operators or cooperatives, can shift the focus from traditional individual animal treatments by veterinarians and animal health workers to a holistic approach aimed at herd-level disease control.

The objectives of Herd Health programs align with the goals of farmers, with some aiming to boost productivity levels while others prioritize maintaining a healthy herd. Implementing Herd Health Management at the individual farm level can uplift the lives of small and marginal Indian farmers and help improve their income. In the context of herd health management, it is crucial to recognize that this process is a gradual and continual endeavour, rather than a quick-fix solution to address immediate herd issues (Green et al., 2012). At the national level, a well-designed herd health program can provide valuable data on key infectious diseases such as Foot and Mouth Disease (FMD), Brucellosis, and Lumpy skin disease (DAHD Annual Report 2022-2023), as well as other endemic farm illnesses. Extending these programs to the individual farm level would improve data collection, leading to more robust and extensive monitoring.

In conclusion, the primary objective of a herd health program is multifaceted. It aims to control or eliminate infectious diseases that affect dairy animal productivity and milk quality at the individual farm level. This not only protects animal health but also safeguards human health, as some diseases can be transmitted from animals to humans. The program takes a holistic approach, focusing on the entire herd rather than isolated cases but at individual farm level. By implementing preventive measures and disease surveillance protocols, it can optimize herd health, improve reproductive performance, and boost overall productivity. Importance of veterinary care, educating farmers, and implementing herd health approaches can further boost the agricultural economy and improve rural socio-economic conditions.

References:

20th Livestock Census. Department of Animal Husbandry & Dairying. Ministry of Fisheries, Animal Husbandry & Dairying, New Delhi, India.

Annual Report 2022-2023. Department of Animal Husbandry & Dairying. Ministry of Fisheries, Animal Husbandry & Dairying, New Delhi, India.

Barkema, H. W., von Keyserlingk, M. A., Kastelic, J. P., Lam, T. J., Luby, C., Roy, J. P., LeBlanc S.J., Keefe G.P., & Kelton, D. F. (2015). Invited review: Changes in the dairy industry affecting dairy cattle health and welfare. *Journal of dairy science*, *98*(11), 7426-7445.

Breen, J., Down, P., Hudson, C., Huxley, J., Maxwell, O., Remnant, J., & Green, M. (2013). *Dairy herd health in practice,* 1-11.

Brief note on 9 Years' achievement of Department of Animal Husbandry & Dairying. Ministry of Fisheries, Animal Husbandry & Dairying, New Delhi, India.

Duval, J. E., Bareille, N., Madouasse, A., De Joybert, M., Sjöström, K., Emanuelson, U., Beaugraand-Bonnet F. & Fourichon, C. (2018). Evaluation of the impact of a Herd Health and Production Management programme in organic dairy cattle farms: a process evaluation approach. *animal*, *12*(7), 1475-1483.

Green, M., Green, L., Huxley, J., Statham, J., & Statham, S. (2012). Concepts in dairy herd health. *Dairy herd health* (pp. 1-9). Wallingford UK: CABI.

Ifende, V. I., Derks, M., Hooijer, G. A., & Hogeveen, H. (2014). Financial aspects of veterinary herd health management programmes. *Veterinary Record*, *175*(9), 224-224.

Noordhuizen, J. P., & Silva, J. C. D. (2009). Animal hygiene and animal health in dairy cattle operations. *The open veterinary science journal*, *3*(1), 17-21.

Svensson, C., Alvåsen, K., Eldh, A. C., Frössling, J., & Lomander, H. (2018). Veterinary herd health management–Experience among farmers and farm managers in Swedish dairy production. *Preventive Veterinary Medicine*, *155*, 45-52.

Citation: Dr. Garima Kalra, Dr. Rohish Kaura. (2024). Herd Health in Indian Dairy Farming. In Bio vet innovator magazine (Vol. 1, Issue 1, pp. 16–17). Bio vet innovator magazine. https://doi.org/10.5281/zenodo.13195345