CHALLENGES AND POTENTIAL OF ORGANIC LIVESTOCK FARMING IN DEVELOPING INDIA

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Abstract

Organic livestock farming is gaining increasing attention in India due to rising awareness regarding food safety, environmental sustainability and animal welfare. The system emphasizes the use of natural feed resources, eco-friendly management practices and the avoidance of synthetic chemicals, antibiotics, hormones and growth promoters. Organic livestock production aims to ensure animal health and welfare while producing residue-free and high-quality livestock products. Organic livestock farming also contributes to environmental conservation through reduced greenhouse gas emissions, improved biodiversity and sustainable resource utilization. Despite its potential, organic livestock farming in India faces several constraints. Major challenges include a lack of awareness among farmers, a shortage of certified organic feed and fodder, high certification costs, poor marketing and processing infrastructure and limited research support. Disease management without the use of synthetic drugs and maintaining balanced organic nutrition are also significant concerns, particularly in intensive livestock systems. Furthermore, inadequate veterinary services and limited training facilities hinder large-scale adoption. With growing domestic and international demand for organic livestock products, organic livestock farming has promising prospects in India. Strengthening research, policy support, market linkages and farmer awareness will be essential for the sustainable development of the organic livestock sector.

Keywords: Animal welfare, environmental sustainability, health, organic livestock farming

Introduction

Livestock production systems have both beneficial and harmful effects on the environment, influencing factors such as land and water utilization, biodiversity and greenhouse gas (GHG) emissions (Willett et al., 2019). To improve the beneficial effects, organic livestock farming is the best alternative. Farming systems contribute to food security, generation of income, cultural identity and gender empowerment (FAO, 2021). Organic livestock farming has set itself the goal of establishing environmentally friendly production, sustaining animals' good health, realising high animal welfare standards and producing products of high quality (Sundrum, 2001). Organic livestock farming is not a production method meant to solve all problems in livestock production. The organic livestock production means of food production with a large number of rules directed towards a high status of animal welfare, care for the environment, restricted use of medicine and produce a healthy product without residues. The main aspect of organic livestock farming is to reduce the use of chemicals, pesticides, fertilizers and fungicides in the production process.

Despite its promising future, organic livestock farming in developing India faces several challenges. Limited awareness among farmers, shortage of certified organic feed, high certification costs, poor marketing infrastructure and inadequate policy support

remain major obstacles in its large-scale adoption.

Concept of organic farming

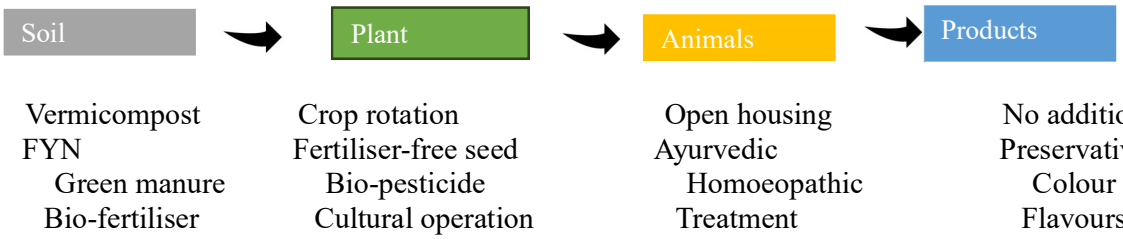

Fig. 1 Concept of organic farming (Source: Meena *et al*., 2020 **)**

Definition of organic livestock farming

Organic animal husbandry is defined as a system that promotes the use of organic and biodegradable inputs from the ecosystem in terms of animal nutrition, treatment, housing and breeding. This system avoids synthetic inputs such as drugs, feed additives and genetically engineered breeding inputs (ICAR-Handbook).

Key considerations in organic livestock production

1. **Organic livestock**: All the livestock products that are sold, labelled, must be raised under continuous organic management.
2. **Livestock feeding:** All the feed and fodder resources should be cultivated under organic agriculture
3. **Livestock feeding:** Throughout the organic process, provide organic health and natural accommodation.
4. **Waste management:** Organic livestock producers are mandated to manage manure so that it does not contaminate crops, soil and water.
5. **Health care:** Organic livestock production requires producers to establish preventive health care practices.
6. **Record keeping:** The organic production system needs to maintain the animal as well as the feed record so that the animal can produce organic products

Organic livestock production system

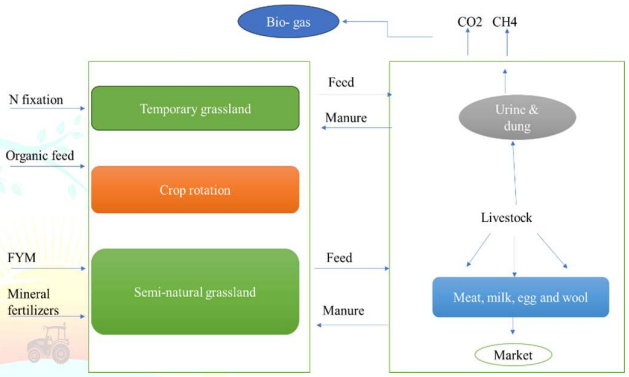

Fig. 2 Real organic livestock production system(Torres *et al*., 2022)

Table 1 Benefits of organic milk

Benefits of organic milk	Reference
Higher Conjugated Linoleic Acid (CLA) levels	(McBride and Greene, 2009)
More beneficial Omega-3 fatty acids	(Lairon and Huber, 2014)
The relative presence of pesticides is lower	(Kamboj et al., 2013)
Free from the presence of antibiotic residues	(Patel, S. J. 2017)
Higher concentration of vitamins (Vitamin A 75% and Vitamin E 50% more)	(Nielsen and Nielsen, 2004)
Presence of cadmium and lead residues is relatively lower	(Kamboj et al., 2013)

Potential of organic livestock farming

1. Better health and body conditioning of the animal.
2. Enhance animal welfare measures.
3. Environmental sustainability in farming.

4. Empowerment of small farmers and income generation.
5. Improvement of indigenous breeds.
6. The product of livestock will be more consumable.
7. Recognising animal comfort and animal behaviour.
8. Boost traditional technology.
9. Better in nutritive value.
10. Veterinary cost generally lower than the conventional system.

Quality control standards in organic livestock farming

1. IFOAM (International Federation of Organic Agriculture Movement): 1970
2. National Standards for Organic Production (NSOP): 2001
3. New Standards introduced in NPOP: 2001
4. Codex Alimentarius guidelines: 1991 (Dutta et al., 2025)

Certification bodies in the world

1. EU regulation (1804/1999)
2. Organic Food Products Act (OFPA) of the USA
3. Draft Guidelines of Codex / WHO/ FAO
4. UK Register of Organic Food Standards (UKROFS)
5. International Federation of Organic Agricultural Movements (IFOAM) (Singh, S.P. 2014)

Challenges of organic livestock farming

Organic livestock farming is still developing and requires further advancement to become fully sustainable without relying on synthetic inputs commonly used in conventional systems. This highlights the importance of research on organic alternatives such as natural medicines, improved feed resources and sustainable feeding practices that comply with organic standards. In poultry and pig production, for example, replacing synthetic amino acids remains a major challenge. Natural sources of nutrients, better pasture management, balanced organic rations and innovative feed resources can help maintain animal health and productivity. Continued research and development of organic supplements and management strategies are essential for the long-term success of organic livestock production.

The main challenges are given below

1. Lack of knowledge among farmers about organic production, animal health, organic feed knowledge and animal welfare. Lack of in-depth understanding of organic production.
2. Most of the farmers are small and landless farmers. They have production and processing infrastructure.
3. Livestock feed is one of the important components in organic livestock farming. The farmers are unable to maintain the NPOP guidelines at times. They are also not aware of the standard of organic production.
4. In our country, till now, few local training and certification facilities are available for organic production.
5. The cost of the organic product is very high and the production is low.
6. Process and preservation of organic products are difficult for small farmers.
7. Lack of market facilities for the sale and purchase of organic livestock products.
8. Organic farming is still hampered by a lack of clarity in production and processing.
9. Lack of research opportunity and research policy in the organic livestock production process.
10. High disease occurrence in livestock animals and weak veterinary care and service.

Futures of organic livestock farming

The future of organic livestock farming in India appears highly encouraging as consumers are becoming more conscious about food safety, animal welfare and environmental protection. The increasing preference for organic milk, meat, eggs and other animal products is opening new avenues for farmers, producers and agribusiness entrepreneurs. In addition, government

programmes such as Paramparagat Krishi Vikas Yojana and Mission Organic Value Chain Development for North Eastern Region are promoting organic agriculture through financial support, farmer training, certification facilities and better marketing opportunities. Organic livestock production also has considerable scope in India because many traditional rural farming systems already follow low-input and natural management practices that closely resemble organic methods. Moreover, the growing domestic and international demand for organic livestock products, along with higher market prices, is expected to enhance farmers' income and encourage wider adoption of organic livestock farming in the coming years.

Conclusion

Organic livestock farming represents a sustainable and environmentally friendly approach to animal production that focuses on animal welfare, ecological balance and the production of safe and healthy livestock products**.** It can improve animal health, conserve biodiversity, reduce environmental pollution and enhance the income of small and marginal farmers through premium market opportunities. However, several challenges such as lack of farmer awareness, inadequate organic feed resources, high certification costs, limited veterinary support and poor market infrastructure continue to restrict its widespread adoption. To ensure the successful growth of organic livestock farming in India, greater emphasis must be placed on research, training, policy development and strengthening marketing networks.

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