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Organic Farming in Animal Husbandry Practices

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ABSTRACT

Organic animal husbandry deliberately avoids the use of synthetic inputs such as drugs, feed additives and genetically engineered breeding inputs. Organic livestock farming differs from conventional farming where, livestock essentially integrated with crop farming under subsistence farming operations with low input low output production systems. The standards for organic production are basic requirement. Organic livestock production requires producers to establish preventive health care practices. Management in organic system should be based on correct understanding of animal behavior. In developed countries, organic regulations are increasingly requiring that animals should be raised on pasture. Developing nations seek to export organic products or conventional products, they will still need to evolve acceptable traceability mechanisms. Better animal health conditions are needed, especially in the case of organic livestock production. If we are to harness the potential benefits of organic farming, then training in organic production practices for both organic trainers/advisers and farmers is essential. The 'organic' is more or less a symbol of purity and best quality of food products especially when it is certified by the recognized certification agencies. The ICAR has also recognized it as a system of agricultural production worth promotion in certain regions having potential for organic farming.

1. Introduction

The first “scientific” approach to organic farming can be quoted back to the Vedas of the “Later Vedic Period”, 1,000 BC to 600 BC. The essence is to live in partnership with, rather than exploit, nature. The “Vrikshayurveda” (Science of plants), the “Krishishastra” (Science of agriculture), and the “Mrigayurveda” (Animal science) are the main works. Animal Husbandry is an integral part of farming practice. However, within this system “livestock shall mean any domestic or domesticated animal including bovine (including buffalo and bison), ovine, porcine, caprine, equine, poultry and bees raised for food or in the production of food.” Organic animal husbandry is defined as a system of livestock production that promotes the use of organic and biodegradable inputs from the ecosystem in terms of animal nutrition, animal health, animal housing and breeding.

It deliberately avoids the use of synthetic inputs such as drugs, feed additives and genetically engineered breeding inputs (Chander *et al.*, 2011). Organic livestock farming differs from conventional farming in many aspects including pasture management, animal nutrition, housing, animal health maintenance and animal disease management (Rahmann, 2001). Small scale holdings, where livestock essentially integrated with crop farming under subsistence farming operations with low input low output production systems, are making the prospects for organic livestock farming bright, alongside organic crop production in India (Chander *et al.*, 2007). Integration of more than one livestock species and livestock with cropping can be the basis of a balanced and sustainable farming system, allowing nutrient recycling and effective resource use, where in the farmers of the study area were practicing. The use of well-adapted breeds and safeguarding the indigenous animal genetic resources along with maintenance of diversity is one of the major characteristics, given much emphasis in organic production systems.

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Animal production is an important part of organic farming that aims at achieving a balanced relationship between the soil, the plants and the animals in a farming system (Vaarst *et al.*, 2006). Consumers expect the food from organic production to be of a certain quality that makes it different from conventionally produced food. Acknowledged consumer interests cover a wide range of issues, from the nature of farming as a whole (environmentally friendly, socially just, animal welfare friendly) to the concern over own health (buying organic food based on a perception of organic food being more healthy). Production methods are based on criteria that meet all health regulations, work in harmony with the environment, build biological diversity and foster healthy soil and growing conditions. Animals are marketed as having been raised without the use of persistent toxic pesticides, antibiotics or parasiticides (Borell & Sorensen, 2004). Organic standard will not exempt producers and processors from compliance with general regularity requirements such as food safety regulations, pesticide registrations, general food and nutrition labelling rules, *etc.* (FAO, 2000). On an organic farming, animals are fed 100% organic feed. Organic crops, hay and pastures are prepared to feed animal. Organic milk far superior compared to conventional milk as it do not contain any non natural feed additives.

Points that must be considered when converting a unit into organic farming system

- 1) The farm shall be under organic management and certification.
- 2) Animals shall not be fed with feeds, which contain additives like growth hormones and other artificial substances which are not allowed in the standards.
- 3) Animal waste shall be avoided as feed for other animals.
- 4) Animal manures to be properly handled or to be composted before use in the farms.
- 5) The animals shall be selected for breeding based on health and resistance to diseases and pests.
- 6) Use only the herbal and natural treatment.
- 7) The farm should strive to produce most of the feeds from the farm to avoid contamination from external feeds.

The primary characteristics of organic livestock production systems are

- 1) Well-defined standards and practices which can be verified.
- 2) Greater attention to animal welfare.

- 3) No routine use of growth promoters, animal offal, prophylactic antibiotics or any other additives.
- 4) At least 80% of the animal feed grown according to organic standards, without the use of artificial fertilizers or pesticides on crops or grass.

Organic Certification Standards

The standards for organic production are basic requirement for organic production of crops, livestock, fisheries, *etc.* The certification bodies monitor the adherence to these standards by the organic producers. Therefore, most of the countries have national certifying body or agencies that certify the production management system as organic. Without their certification, products cannot reach the consumers as organic. A lot many organic standards exist at present. But, mainly 5 standards are important and have worldwide acceptance, *viz.* EU regulation (1804/1999). Organic Food Products Act (OFPA) of USA, Draft Guidelines of Codex/WHO/FAO, UKROFS of UK and the IFOAM Basic Standards. Considering the regional importance, the Government of India (GoI) too has developed Indian National Standards for Organic Production (NSOP). These standards are published (NPOP, 2002) under the National Programme for Organic Production by the Agricultural and Processed Food Products Export Development Authority (APEDA). In European Union (EU), majority of the countries have their own certifying standards and agencies. To avoid confusion of having a number of standards and certifying bodies, the first regulation on organic farming [Regulation EEC 2092/91] was drawn up in 1991 and implemented in 1992 to supplement the various organic standards of different EU nations. Again in July 1999, the EU adopted the EU regulation (1804/ 1999) and implemented in August 2000, which amends regulation 2092/91 with regard to livestock production (Schmid, 2000). Compliance requirements are so stringent that the first organic Japan Agricultural Standard (JAS) certified beef sold in Japan reportedly came from an Australian operation in 2008. Organic aquaculture (shrimp and fish), on the other hand, is emerging in China, Indonesia, Vietnam, Thailand, Malaysia and Myanmar (Kung, 2009).

National Standards for Organic Production (NSOP) in India are largely based on the IFOAM Basic Standards. These standards need to be discussed by the stakeholders at different levels for periodic changes and modifications as per the local situations. (Chander, 2002; 2004). The academician and researchers may play a vital role in raising the awareness among the farmers, who may have to venture into organic production sooner or later due to growing demand (Chander, 1996).

Key Considerations in Organic Livestock Production

Developing and applying the principles of organic animal husbandry at all times requires a thorough analysis of the problems and opportunities involved and existing local knowledge. Some key considerations in organic animal husbandry that producers and other stakeholders need to take into account are listed below:

- **Origin of livestock:** All livestock (and all products from these livestock) that are sold, labeled or advertised as organic must be raised under continuous organic management from the last third of gestation or at hatching.
- **Livestock feed:** The total rations of livestock that are produced under organic management must consist of agricultural products that have been organically produced and handled organically. This includes pasture, forage and crops. Certain non-synthetic and synthetic substances may be used as feed additives and supplements. Twenty percent of the feed for dairy cattle which is under nine months of age is allowed to come from non-organic sources. Plastic pellets, urea, manure and by-products from mammalian or poultry slaughter are not allowed.
- **Living conditions:** An organic livestock producer must create and maintain living conditions that promote the health and accommodate the natural behavior of the animal. These living conditions must include access to the outdoors, shade, shelter, fresh air, direct sunlight suitable for the particular species and access to pastures for ruminants.
- **Waste management:** Organic livestock producers are mandated to manage manure so that it does not contribute to the contamination of crops, soil or water and optimizes the recycling of nutrients.
- **Health care:** Organic livestock production requires producers to establish preventive health care practices. These practices include:
 - Selecting the appropriate type and species of livestock
 - Providing adequate feed
 - Creating an appropriate environment that minimizes stress, disease and parasites
 - Administering vaccines and veterinary biologics

These animal husbandry practices promote animal well-being in a manner that minimizes pain and stress. Producers cannot use preventive antibiotics. Producers are encouraged to treat animals with appropriate protocols, including antibiotics and other conventional medicines when needed, but these treated animals cannot be sold or labeled as organic. Producers cannot administer hormones or other drugs for growth promotion.

- **Record keeping/Audit trail:** Organic livestock operations need to maintain records for a number of reasons. Certainly, records are important for the financial management of any organic livestock enterprise. However, records are also important to verify the organic status of the animals and the production, harvesting and handling practices associated with them and their products.

Role of livestock on an organic farm

- **Nutrient cycling:** A process in which nutrients are returned to the soil through manure and compost. Amending soils with animal manures can increase microbial biomass, enzymatic activity and alter the structure of the microbial community incorporation of feed crops, such as alfalfa or grasses into crop rotations helps to build soil organic matter Increasing cropping options, adding diversity to the agro- ecosystem.
- **Weed control:** Feed crops can be used to suppress and control weeds and animals can be used to graze out weeds on crops or pastures.
- **Preparing the ground for cropping:** Livestock such as pigs have a natural tendency to dig the soil if leave on the natural field, hence can reduce the tillage and weed control costs.
- **Interrupting insect and disease cycles:** by taking land out of cropping
- **Adding value:** to grass-lands and promoting the use of green manures.

Grazing along with the stall feeding was the major pattern of feeding cattle by majority (more than 70%) of the farmers. Moreover, the primary reason hill farmers keep cattle is to provide manure for the fields (Ashish, 1982), thus recycling the nutrients an important aim of organic farming. Management in organic system should be based on correct understanding of animal behavior, where preventive health care is vital(Alroe *et al.*, 2001).

Problems in developing organic animal husbandry

While many tropical countries are making concerted efforts to boost organic production, especially of high-value commercial crops, with considerable success, some serious problems are still restricting growth in organic farming. Some of these potential obstacles, especially when exporting livestock products, are as follows:

- **Lack of knowledge:** In general, there is inadequate awareness about organic production practices, animal welfare issues and the requirements of importing countries, especially by individual organic trainers/advisers and farmers. Organic production calls for an in-depth understanding of the principles, standards, production practices and requirements of the organic certification agencies. Most of the literature on organic farming is available in English, through the print medium and the Internet. Much of this material is inaccessible to small-scale farmers in the South, where illiteracy is common. **Small farms:** In tropical countries, especially in Asia and Africa, small-scale farmers depend on livestock production for their livelihood. However, the landless animal husbandry system, which is common in India, is not allowed under organic systems of livestock production. Small farms are generally not suitable for the development of organic livestock production, especially for exports. Therefore, both technical and policy interventions are crucial to resolve these issues. Governments must support added-value initiatives and product marketing to help make the small farm production system more sustainable. Various essential goods and services, including credit, insurance and improved technologies, must be made available to improve the efficiency of small producers (Taneja, 2005). Contract farming may be a potential solution. Under this system, many small farmers can contract their farms out to companies that produce organic food products on consolidated holdings.

- **Livestock feeding:** Livestock feeding has been a matter of much debate in the EU and particularly in the USA, where it has recently been resolved. The USDA has published new regulations addressing the use of pastures in organic livestock production. These rules strengthen the existing standards and clarify the USDA's emphasis on pasture-based livestock production for producers, consumers and certifiers.

An important requirement of the final regulation is that: 'animals must obtain a minimum of 30% dry matter intake from grazing pasture during the grazing season'. This ruling establishes that not only must animals be outside, but that the pasture must be well managed, so that it makes a significant contribution to their nutrition (Villalon, 2010). The organic alternative may help these farmers to reap greater benefits without intensifying their production systems, instead relying on the free-range, grazing-based systems that are already common in African and South and Central American countries (Chander and Mukherjee, 2005)

Approximately two-thirds of organically managed land worldwide, roughly 23 million hectare was pasture in 2009. In developed countries, organic regulations are increasingly requiring that animals should be raised on pasture. In addition, further requirements are being placed on pasture quality. For example, EU regulations require that pastures be suitable for the natural nutritional and behavioral needs of particular species. These market drivers, along with a burgeoning market for grass-fed meat, has created great interest in developing pasture improvement strategies for the organic sector. Pastures may also have a large role in mitigating climate change through carbon sequestration. But, to date, little research has been done on organic pastures in arid regions, although these areas are largely dependent on their pastures and livestock (FAO, 2009).

- **Sanitary regulations:** Only a few developing countries are able to export even conventional livestock products due to the strict sanitary requirements imposed by importing countries. These disease control regulations are even more strictly monitored when it comes to organic livestock products. Governments of tropical countries are taking the initiative in this regard by emphasizing their adherence to the guidelines for clean milk production, Good Manufacturing Practices (GMP), Hazard Analysis And Critical Control Points (HACCP), International Organization for Standardization (ISO) certification, and best practices recommended by

Challenges

Organic dairy farmers considered the most difficult aspects of organic milk production are the: Regulating authorities

1.	Certification paperwork and compliance cost were the most challenging,
2.	Sourcing organic inputs, including grains and forages, feed supplements
3.	Replacement of heifers
4.	High costs of production and maintaining animal health
5.	Others (e.g. natural calamities such as drought, floods etc.)

Conclusion

The 'organic' is more or less a symbol of purity and best quality of food products especially when it is certified by the recognized certification agencies. In India, currently 11 certification agencies are accredited by the APEDA for inspection and certification of the organic agricultural products. This means organic farming has to be paid attention to boost organic production to meet the growing demand for such products. Even antibiotics if given to the animal than all records like withdrawal period of drug so any trace compound of antibiotic cannot enter in product from animal *i.e.* milk. The ICAR has also recognized it as a system of agricultural production worth promotion in certain regions having potential for organic farming. Animals are main part of organic farming and sustainability of organic farming is not possible. Under organic livestock production systems, it is expected that organic meat, poultry and egg products come from farms that have been inspected to verify that they meet rigorous standards which mandate the use of organic feed, prohibit the use of antibiotics, give animal's access to outdoor, fresh air and sunlight (Chander, 2006), wherein many of the practices of organic farmers were more or less meeting the Indian National Standards for Organic Production (NSOP, 2002) recommended developed by NPOP of India. Hence, in addition to local demand and also keeping in view of the export demand for the livestock products it is necessary to provide in-puts to the organic farmers in the form of technical know-how so as to enable their livestock systems to modify to be certified which is mandatory in organic production systems.

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