



THE ROLE OF LIVESTOCK PRODUCTS IS FUNDAMENTAL TO THE ORGANIZATION OF AGRICULTURAL PRODUCTION IN INDIA

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ABSTRACT:

The concept of organic livestock farming can only fulfil the criteria for sustainability if all requirements on animal health and welfare, together with product quality and ecological soundness, are strongly considered and controlled. Sustainability lies at the heart of organic farming and is one of the major factors determining the acceptability or otherwise specific production practices". It is even suggested that sustainable is a polite word for organic farming.

KEYWORDS: *Livestock in Organic Farming, Nutrient Cycling, Global Warming, Animals, Soil Fertility, Environmental Pollution, Inorganic Fertilizers and Pesticides Etc.,*

INTRODUCTION

Organic agriculture originally stemmed from criticism of the development in mainstream agriculture of the use of chemical fertilizers and pesticides. The first guidelines for organic farming were developed as early as 1924 in order to elaborate and alternative to conventional production. Organic is an integrated system of farming based on ecological principles. It was promoters' biodiversity, biological cycles, and soil biological activity. "It is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use off-farm inputs; taking into account that regional conditions require locally adopted systems.

Livestock plays an even more critical role on organic farms than they do on. Conventional farms integration of livestock and crop allow nutrients to be recycled more effectively on the farm. Livestock contributes to the livelihood of the poor in many ways income animals known as animal husbandry; it is a component of modern agriculture that has been practiced in many cultures since humanity's transition to farming from hunter gatherer lifestyles. Organic production practices are just one of the many options available to livestock producers to grow market quality of live stock products. Organic livestock management practices offer unique rewards and challenges to the livestock producer regardless of the animal species produced.

In general when organic livestock farms are contrasted with comparable conventional forms, they were found to use less fossil fuel energy lose less soil to erosion generate fewer ground water pollutants and have less impact on global warming.

IMPORTANCE OF LIVESTOCK IN ORGANIC FARMING:

Livestock provides major additional contribution agriculture through draft power manure, fuel and as a fertilizer, animal products such as meat, milk, eggs while poultry provide daily cash income and

much required nutrition to farmers, summarizes the importance of livestock in daily life of farmers. Livestock play an even more critical role on organic farms than they do on conventional farms. Integration of livestock and crop allow nutrients to be recycled more effectively on the farm. Animals transform plant energy into useful work: animal power is used for ploughing, transport and in activities such as milling, logging, road construction, marketing, and water lifting for irrigation.

LIVESTOCK ON AN ORGANIC FARM PLAY A KEY ROLE:

1. **Nutrient Cycling:** Nitrogen fixed by leguminous plants and different nutrients devoured by farm animals amid brushing are come back to soil through dung and urine. Overseen painstakingly, farm animals and manures can assume an imperative part in nutrient cycling on the organic farming.
2. **Weed control:** Farm animals are utilized widely for weed control on organic farming
3. **Pasture and crop establishment:** Farm animals can help with planning the ground for planting.
4. **Insect and disease control:** Fodder part of the mixed cropping system builds a critical fertility and structure building phase into rotations and intrudes the potential for the development of insects and disease.

REVIEW OF LITERATURE:

Preethi Nagaraj, (2012). The modern agriculture, with its potential to take the contry out of food trap and to reach the year of self sufficiency in food grain production, brought a plethora of environment problems like declining productivity, soil fertility, environmental pollution and health hazards in human beings. To reduce these problems - Government of Karnataka has brought out a policy on organic farming (2004) to promote organic agriculture in the state, with main intention to avoid use of inorganic fertilizers and pesticides which are harmful to human being, soil and environment. State level empowered and working committees have been constituted for implementation of the policy.

KPS Saini and B Roy Et.al (2018) in their article “organic livestock farming” stated that Organic farming is aimed to promote animal health and environment sustainability through holistic management for positive health. It promotes biodiversity, biological cycles and soil health. The practice aims to protect human health and conserve, maintain or enhance natural resources, with the goal to preserve the quality of the environment for future generations while being economically sustainable. Organic farming has grown rapidly throughout the world in recent years. Organic production is knowledge and management intensive. Producers must be well versed in organic production standards, principles and practices, which require a high degree of knowledge and skill. Animal production is an important part of organic farming that aims at achieving a balanced relationship between the soil, plants and the animals in a farming system. While organic livestock producers use minerals and vitamins as feed additives, most rely on cultural practices to maintain animal health. Most veterinary medicines are prohibited.

A.J. Escribano and M. Escribano (2015) in their article “The Contribution of Organic Livestock to Sustainable Rural Development in sensitive Areas” stated that, Organic production may contribute positively to rural development. However, there is a gap of knowledge with regard to the livestock sector that hte present work is aimed at filling by means of a multidisciplinary and participatory approach. The results suggest that ‘fully organic’ holdings (organic farms that sell products as organic) have the highest potential to contribute to the rural development in the area under study.

Saima siddique et.al (2015) in their article “Organic Farming: The Return to Nature” stated that Organic farming is a modern and a sustainable form of agriculture that provides consumers fresh natural farm products. Organic farming works in synchronization with nature rather than against it. This objective is achieved by using techniques to improve crop yields without harming the natural environment as well as the people who live and work in it. Organic agriculture offers an exclusive amalgamation of environment-friendly practices, which require low external inputs, thereby, contribution to increased food availability. Organic farming has a very positive influence especially on birds, influence especially on birds, insects, weeds, wildlife, wildlife, and soil flora and fauna.

Conventional farming is capital intensive, which requires more manufactured inputs and energy as compared to knowledge – and labour-intensive organic farming.

Bhuvana, N., 2Krishnamurthy, B. & Gopala, Y.M (2015) The growing popularity of organic farming in the state made Government of Karnataka had to out with the novel idea of developing an 'organic village through Organic farming village programme. As a first step towards promotion of organic farming as per the policy, organic village programme was initiated since 2004-05 under which model organic villages of about 100ha. are being developed one in each district. With the success of the programme, the state government felt it necessary to extend this another Hobli of the taluk. So, the government intends to promote organic farming through creation of awareness among the farming community and by providing support during the conversion period. The programme is mechanised by the Karnataka State Department of Agriculture involving Agriculture, Horticulture, Forestry and Animal husbandry & Veterinary services departments.

STATEMENT OF THE PROBLEM:

Developing countries are already producing a wide range of organic products and many are thriving well. However most of them are faced by a number of constraints such as, lack of technical knowledge for example: which type of products to grow, which markets and distribution channels to choose, competition market access etc. The consequences of the conversion process and externalities of organic farms may be very changing since they depend on many factors such as the social economic and environmental context of exploitation, the climate and topography of the land, the production system under study the regulation on curse, the availability of inputs and prices the development of organic industry and the consumers behaviour. In order to deal with these uncertainties, researchers have conducted studies that have evaluated the conversion of different conventional farming systems to the former one for diary, goats and dairy cattle.

OBJECTIVES OF THE STUDY:

The main objectives of organic livestock farming are to establish and maintain animal-soil interdependence and to create a sustainable agro-ecological system based on local resources.

- To study the organic livestock farming provides long-term benefit to environment people.
- To examine livestock products is fundamental to the organization of agricultural production in India an overview.
- To examine the role of livestock in organic farming in the study area.

HYPOTHESIS:

- Organic Livestock farming method better protected the soil organic matter.
- Organic farming creates local employment opportunities and local marketing available for organic farm products.

METHODOLOGY:

These are the source containing data which have been already collected by other researchers. The secondary sources consists of readily available materials, statistical statements and reports whose data may used by researcher for his/her studies. Secondary data sources like newspapers, articles, journals and websites.

ORIGIN OF STOCK:

Animals must be born to organically managed dams if they are to be slaughtered for organic meat production. In organic farming preference should be given to local breeds. Stock on organic farms should be purchased from organic holdings. Whilst a closed herd/flock can be replaced annually, with a requirement that "special attention must be paid to animal health measures" (such as screening tests or quarantine periods, depending on the circumstances).

The process of conversion to organic seems apparently less complicated in terms of management procedures than in other livestock species and livestock production systems. The transition period from conventional to full organic certification is extremely variable depending on national regulation, type of production and the certification agency (from a minimum of 12 months to a maximum of 48 months). During transition, producers experience many changes in management practices, with impacts on the entire production system (soil, crops and livestock management). During transition, animal health can be negatively affected with a higher incidence of disease and decline in productive efficiency.

CHARACTERISTICS OF AN IDEAL ORGANIC LIVESTOCK FARM:

In terms of optimizing health and welfare, the ideal organic farm has the following characteristics-

- I. Geographically located near to the market outlets, to sources of feed stuffs and bedding materials, in order to minimize the time and costs involved in transport.
- II. A mild climate and free draining soil, with good access to shelter and water sources.
- III. A mix of grassland, cereal crops and a range of other arable crops including forages that provides pasture for grazing, conserved herbage, cereals to supply concentrated energy, straw for bedding, and feed sources from other arable crops.
- IV. A mix of livestock species in order to dilute the disease challenge to susceptible stock. Generally, the worm species which affect one livestock species don't affect other species.
- V. A self contained flock or herd – i.e. animals are to be born, reared and finished on the same farm so as to eliminate the stress in farm to farm transfer and also as a protection against entry of new disease organisms into the farm.
- VI. Calving and lambing pens be arranged separately with more ventilated housing to minimize the risk from summer mastitis and also to meet the maternal nutrient requirement with the seasonal grass growth.
- VII. Good nutrition to balance energy, protein and mineral supply as well as to ensure supply of fiber to ruminants for efficient rumen function.
- VIII. Good livestock infrastructure like fencing, outdoor watering and feeding facilities, good handling facilities.
- IX. Trained and experienced stockmen with good powers of observation, and also with the ability to take care for livestock with the minimum of stress in terms of grouping, feeding, and handling.

PRINCIPAL OF ORGANIC LIVESTOCK PRODUCTION:

1. Organic livestock farming is a land based activity. In order to avoid environmental pollution, particularly natural sources such as the soil and water, organic production of livestock must in principle provide for a close relationship between such production and the land.
2. Livestock must have access to free range exercise area and/or grazing apart from specified exemptions.
3. Biological diversity should be encouraged and preference should be given to breeds adaptable to local conditions. Genetically modified organisms and products derived are not compatible with organic production.
4. Organic livestock should be fed on organically produced grass fodder and other feed stuffs, apart from some specifications (for ruminants 10% of DM of specified components may come from conventional origin).
5. Animal health management should be mainly based on prevention. The preventive use of chemically synthesized medication (allopathic medicines) is not permitted, but sick and injured animals must be treated immediately as well being of the animal is more important.

- Housing should satisfy the needs of the animals concerned. Adequate ventilation, light, space and comfort should be provided to permit ample freedom of movement to develop the animal's natural social behaviour.

ORGANIC AGRICULTURE AND ANIMAL WELFARE:

Animal production is an important feature of organic farming. Organic systems are designed to achieve a balanced relationship between the components of soil, plants and animals which are as important as others in contributing the overall effect. Animal well-being must be a fundamental attribute of organic livestock production. As sentient beings, animals have highly developed central nervous systems and behavioural needs, which place an added responsibility on the organic livestock producer. The production system is not sustainable if animals show evidence of pain, disease or distress as a result of an inadequate system or disharmony between the animals and the system. The need to prevent such painful situation forms the basis for the concepts of positive health and positive welfare in organic production incorporated in certain country's regulations. This is not only to prevent any pain, discomfort or disease, but to promote health and well being in each animal as well as on herd level and population level. This is a quality of organic animal food products referring to the mode of production, the so called process quality. In organic production systems, "Animal well-being is understood as living in reasonable harmony with the environment, physically as well as psychologically, meaning that the environment must be of such quality that is within the adaptability of the animal involved:. It is often, the perception among consumers that organic livestock have been able to perform more of their natural behaviour and have benefited from higher welfare standards than animals on conventional farms.

PRESENT STATUS OF ORGANIC FARMING IN INDIA:

Growing awareness about health and environmental issues paved way for increasing demand for organically produced agri-products across the world. Globally 1.6 million farm producers use organic methods and approximately 80 percent of these producers are in developing countries. The estimated was global market for organic products in the year 2012 was approximately 70.1 billion US dollars. In India the organic food market is approximately of INR 5.6 billion and is an emerging opportunity for generation of employment and income at village level. India is blessed with and has the potential to produce all varieties of organic products due to its various agro climatic regions. Organic farming is an inherited practice in India and adds to our advantage. This holds the key for organic producers to tap the market which is steadily growing at 15-25 percent in the domestic market. Farmers living in lands untainted by pollutants and away from the perils of modernity are rediscovering the benefits of traditional and holistic farming that maintains soil health and biodiversity. In 2016 the total area under organic farming in India stood at 14,90,000.00 ha. Currently India ranks 33rd in terms of total land under organic cultivation and 88th in terms of the ratio of agricultural land under organic crops to total farming area.

ORGANIC AGRICULTURE SCENARIO IN INDIA:

Organic agriculture is growing at rapid rate, not only in the developed countries but also in the developing world, with annual sales of over US \$ 26 billion. Organic market in developed countries has rejuvenated the agriculture sector in developing countries too. The growth rate of organic sector is around 20-25% globally. In India, Currently 205 million hectare (25, 08,826 ha) area (0.03% of total area) is under organic cultivation. (In 2000-2001 there were approximately 41000ha of land certified as organic in India.) In 2003-04, India produced 1,15,238 tones of organic products among which 6,792 tons certified organic products like spices, fruits, cereals, tea, cotton, coffee, honey (31 products) etc. Worth Rs.7123 lakh were exported. This is going to increase further in future. Whereas, India produced 88 million tons of milk, 40.4 billion eggs, 48.5 million kg wool, 6 million tons of meat, out of an enormous population and of 485 million livestock and 489 million poultry in 2003-04. Despite such huge population and substantial production, there was not even a single organic livestock product

exported. However, India has opportunity to tap the potential of organic livestock product market in a time span of 4-5 years.

Organic farming-Indian scenario the organic land in India is 1,50790 hectares spread over 1,547 farms constitution 0.1 per cent of total agricultural land (Willer Helga and yussefi Minou, 2007). India exported 35 organic products worth US\$ 21 Million during 2004-05 (Gouri, 2006), but these products did not have any item of animal origin except honey. The Indian authorities managed to acquire both, United State Department of Agriculture (USDA) equivalence for the National Organic Programme (NOP) and the European Union (EU) third country listing in 2006, indicating significant progress India has made regarding organic farming (Wai KungOng, 2007). Indian agriculture is characterized by small scale.

Prospects of organic animal husbandry are bright in the state of Uttarakhand, especially due to its hilly terrain, favourable government policies and likely expected increase in demand for organic livestock products in future.

Table-1: The status of organic production in India

Total area under certified organic cultivation	5.71 Mha
Total production	1.35 Mt
Total quantity exported	0.26m Mt
Value of total export	298 million USD
Number of farmers	2.3 million

Source: Ofai.org (2015-16)

In the above table1 we can analysis the status of organic production in India. The total area certified for organic cultivation is 5.71 mm. Total productions is 1.35 mmt and total quantities exported is 0.26 mmt. The value of total exported production is 298 million USD and the numbers of formers are 2.3 million respectively.

In India only 30 percent of the total cultivable area is covered with fertilizers where irrigation facilities are available and in the remaining 70 percent of arable land, which is mainly rain-fed negligible amount of fertilizers, is being used. Farmers in these areas often use organic manure as a source of nutrients that are readily available either in their own farm or in their locality. India has around 15,000 certified organic farms, which produces 1.35 million MT of output annually.

Table-2 Growth of organic Area in India

(Area in Hectares)

Year	Organic Area (a)	Annual growth	wild collection	Annual growth rate	Total organic area	Annual growth rate
2005	185937	0	2385963	0	2571900	0
2006	432259	132.48	2385963	0	2818222	9.58
2007	1030311	138.36	1769689	-25.83	2800000	-0.65
2008	1018000	-1.19	2781530	57.18	3799530	35.70
2009	1180000	15.91	3360000	20.80	4540000	19.49
2010	78000	-33.90	3650000	8.63	4430000	-2.42
2011	1084266	39.01	4477526	22.67	5561792	25.55
2012	500000	-53.89	4700000	4.97	5200000	-6.50
2013	510000	2.00	5180000	10.21	5690000	9.42
CGR	7.45	0	12.87	0	11.52	0
CV	0.59	0	0.55	0	0.53	0

Source FIBL-AMI organic data network survey 2000-2013

The above table shows that growth of organic area in India from 2005 organic area is increased from 185937 to 510000 in 2013 and the annual growth is decreased from 132.48 to 2.00 in 2013. The collection of wild animals increased from 2385963 to 5180000 in 2013 and the annual growth rate increased from 0.00 to 10.21 in 2013. Total of organic area and wild collection from 257190 in 2005 to 5690000 in 2013 respectively. The total compound growth rate of organic area and wild collection is 0.53.

Organic Certification:

It is a certification process for producers of organic food and other organic agriculture products. In general, any business directly involved in food production can be certified, including seed suppliers, dairy farm, farmers, food processors and retailers. Certification is essentially aimed at regulation and facilitation the sale of organic products to consumers and also prevents fraud (Yadav,2012).

The five main certifying bodies which monitor the standards for organic production and having worldwide acceptance are:-

- EU regulation (1804/1999).
- Organic Food Products Acts (OFPA of USA)
- Draft Guidelines of Codex (WHO/FAO,
- UK Register of Organic Food Standards (UKROFS)
- International Federation of Organic Agricultural Movements (IFOAM) Basis standards.

Table-3: Authorized Certification Agencies for Organic Products in India

Name of the certifying agencies	Address
Association for Promotion of organic Farming (APOF)	Bengaluru, Karnataka
Indian Society for Certification of Organic Products (ISCOP)	Coimbatore, Tamil Nadu
Indian Organic Certification Agency (INDOCERT)	Cochin, Kerala
Skal Inspection and certification Agency	Bengaluru, Karnataka
IMO Control pvt. Ltd	Bengaluru, Karnataka
Ecocert International	Aurangabad, Maharashtra
Bioinspectra	Cochin, Kerala
SGS Indian Pvt. Ltd.	Gurgaon, Delhi
LACON	Thiruvalla, Kerala
International Resource for Fair trade (IRFT)	Mumbai, Maharashtra
One cert Asia	Jaipur, Rajasthan
National Organic Certification Association (NOCA)	Pune, Maharashtra

Source: Journal of Entomology and Zoology Studies 2018; 6(2):199-207.

PROCESS OF CERTIFICATION:

In order to certify a farm, the farmer is typically required to engage in a number of new activities, in addition to normal farming operations:

Study – The organic standards, which cover in specific detail what is and is not allowed for every aspect of farming, including storage, transport and sale.

Compliance - Farm facilities and production methods must comply with the standards, which may involve modifying facilities, sourcing and changing suppliers, etc.

Documentation – Extensive paper work is required, detailing farm history and current set-up, and usually including test results of soil, water, feed, medicines, etc.

Planning – A written annual production plan must be submitted, detailing everything from procurement to sale: source of animals, fodder, feed, medicines and farm activities, etc.

Inspection – Annual on –farm inspections are required, with a physical tour, examination of records, and an oral interview.

Fee – A fee to be paid by the farmer to the certification body for annual surveillance and for facilitating a mark which is acceptable in the market as symbol of quality.

Record keeping – Written, day-to-day farming and marketing records, covering all activities, must be available for inspection at any time. In addition, short-notice or surprise inspections can be made, and specific tests (e.g. soil, water, animal products) may be requested (Yadav, 2012)

CONCLUSION:

Organic livestock farming gives more benefits to people and environment. Its aim is to increase the long term soil fertility control pests and disease with harming the environment ensure that water stays clean and safe use resources in which farmers already has they need small amount of money to produce nutritious food, high quality of crop to sell at a good price and for feeding animals.

Organic farmers aim is to minimize physical stress in livestock in order to promote well being and reduce the incidence of disease. Non stressed livestock also has implications for reducing veterinary bills and maintaining meat tenderness.

Maintenance of livestock must be guided by an attitude of care, responsibility and respect for living creatures. Living conditions must consider the natural need of the animal for free movement, food, water and shelter.

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