

## Organic Poultry Farming in India- issues and approaches

C. S. Biradar<sup>1</sup>, M. S. Dodamani<sup>\*2</sup>, B. K. Inamadar<sup>1</sup> and A. J. Murasalogi<sup>1</sup>

1. Karnataka State Department of AH & VS, Karnataka, India.

2. CRIC, Karnataka Veterinary and Fishery Science University, Timmapur, Mudhol, Karnataka, India.

\* Corresponding author email : maheshdodamani@gmail.com

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### Abstract

In the last few decades poultry industry has transformed from mere back yard poultry to commercial farm, but the issues of food safety and quality remains unaddressed. Hence, organic poultry farming has become as an approach to address these issues. This paper attempts to discuss the various issues of organic farming along with necessary interventions required in poultry breeding, feeding, housing and health care management under Indian Scenario. Further, necessary policy interventions were also suggested in order to promote organic poultry farming.

Key words: Organic poultry farming, Backyard, Food safety,

### Introduction

The poultry sector of modern India has transformed from backyard rearing to become commercial organized, scientific and vibrant industry in last four decades ago. Poultry sector plays a significant role in improving the socio-economic condition of rural masses, by generating gainful employment and augmenting family income, particularly among the landless labourers, small and marginal farmers and women in rural areas. Now day by day, consumers are becoming more aware of safety and quality of food products consumed by them. Further, as Purchasing Power (PP) of common people is increasing persistently, they are interested to consume safer product without bothering to pay more. So, the production of safer poultry products without any chemical and microbial residues is the order of the day. On the other hand, emerging importance of animal (poultry) welfare started showing its adverse implications for trade at international level, as there is growing argument that intensive cage rearing, forced moulting etc., are unethical and against the animal welfare. Therefore, laying greater emphasis on organic poultry farming can help us to produce safer poultry products without compromising the animal (poultry) welfare. The present paper is an attempt to appraise the need for development of organic poultry and to provide an assessment of potential interventions required to promote organic poultry production in India.

### Concept of organic poultry farming

FAO/WHO Codex Alimentarius Commission defines organic farming as “a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs”. The main aim of organic farming is to establish and maintain soil – plant, plant-animal and animal- soil interdependence and to produce a sustainable agro-ecological system based on the local resources. Organic farming does not require external inputs (i.e. fertilizer, antibiotics etc.) but prominently rely on ecosystem management. The agriculture cycle is in complete without the involvement of domesticated livestock that play a major role in cycle under the organic livestock production. The establishment of organic animal/poultry husbandry requires a specific period called as “conversion period”. This period is the time taken between the start of the organic management on farm and certification of livestock farm and its product. Changing from conventional to organic management system for livestock enterprises requires a careful and gradual approach. In organic poultry farming the preference should be given to local breeds. Animal must be born to organically managed dams if they are to be slaughtered for organic meat production (Chander et.al., 2006). Further, maximum care should

be taken to provide environment where the birds can exhibit their natural behavior.

Status of organic poultry farming in world and India

Due to the increased health awareness and consumer preferences, organic land area as well as organic livestock/ poultry farming is increasing day by day throughout the world. In 2004, the market value of organic product throughout the world reached around 28 billion US dollars, and is expected to grow to 102 billion US dollars in 2010 (NAAS, 2005). In USA organic meat sector is growing very rapidly in which organic poultry meat is prominent. In 2005, poultry accounts for about 75% of the total organic meat market and consist nearly 26000 tons of organic poultry which is dominated by chicken (Heller, 2006). This trend is expected to continue with annual growth of organic poultry estimated at 33% in 2008 (Nopar, 2005). Chicken has become the most important organic meat due to its short production cycle, which permits producers to quickly increase supply. Poultry organic meat production has comparatively lower cost of production than other livestock meat. It is of interest to note that organic chicken is only about 20% higher priced than conventional, compared to 30-40% price premiums for other organic meats (Heller, 2006). The demand for research and development efforts in poultry sector is also going up as the world trade in organic poultry products is growing.

India exported organic agriculture of product worth Rs. 72 crores during 2004-05, but almost all products exported from India were of plant origin, whereas, India has large number of livestock and poultry population. Even if a small shift from current conventional production to organic animal production can create a huge market to domestic consumption as well as export. Currently, 130 countries are producing certified organic products. Some developing countries like Argentina, Brazil and Mexico are now exporting organic animal products to the developed countries. Our country has a vast scope for promotion of organic farming in the export market, without compromising with the national food security as farming by tribals and under rainfed conditions is generally organic, since very little chemical inputs are used (NAAS, 2005). Presently, research studies on organic poultry in India are almost nil.

Poultry breeding

Breed should be chosen which are adaptable to local conditions. Breeding goals should not be in opposition to animal natural behavior and should be

directed towards good health. The use of genetically engineered species or breeds is not allowed. Reproduction technique should be natural. Artificial insemination is allowed only upon veterinary necessity (Chander, *et.al.*, 2006). Hormonal treatment for more egg production should be prohibited. At present, most organic producers in the UK depend on commercial hatcheries and rearers because of less availability and more cost involved in organic chick production. Three main constraints associated with poultry breeding for small scale production in India are availability of appropriate breeds, transport costs and suffocation losses and non availability of hatcheries supplying required small number of chicks. Again purchasing from commercial hatcheries means one should take note that eggs and chicks should have undergone precautionary hygiene treatments needed in large-scale hatcheries without using any prohibited chemicals.

Poultry housing and management

The main objective to follow organic housing and management standards is to provide an opportunity for poultry bird to exhibit all its normal behavior patterns. This will be helpful to minimize the stress to the birds. Stress free birds are likely to have a positive effect upon both the health and production capacity of the flock. For organic poultry production in European and American countries mobile houses are very popular as compare to fixed housing system. The main advantage of mobile housing is that the birds can be moved to fresh grass areas so that the risk of soil-borne parasites in the outside area can be kept low. The major disadvantage of mobile housing is that all other production materials (i.e. feed, litter material and water etc.) required need to be transported to and from the houses, which increases the labor requirement considerably. Overall, the costs of mobile housing per unit are likely to be higher than the fixed systems. Further, the scope of mobile housing system in India is very limited due to financial and regional constraints. Poultry housing should fulfill the requirement of organic standards and allow for an efficient welfare oriented management of the bird.

Housing should be designed and constructed in such a way that birds can be protected from predators. Good sanitation with regular cleaning of poultry sheds is important. For organic poultry production birds should not be caged and reared under deep litter system. Artificial light can be used according to the time prescribed by the certification agencies. In the organic meat sector birds must be grown for usually a

period of 81 days of age. Poultry must have easy access to an outside grazing area, fresh air, clean water, balanced ration, dust-bathing facilities and an area for scratching, and hence presents an emphasis to enhance the welfare of the animals. De-beaking and beak trimming are usually prohibited practices but some certifying agencies still permit trimming and de-beaking. De-beaking if done, more than 5mm of the upper beak should be removed (Chander, et. al., 2006, Lampkin, 1997).

#### Chicken behavior and interventions

Research carried out in organic layer flocks in Holland, suggest that farmer care and environmental management are important factors in the prevention of these conditions. Behavior traits are of more importance in free range/organic production, when trying to create a production system, which permit hens to move around in large flocks (Chander, et. al., 2006). For the normal expression of the bird behavior there should be ample space for wing flapping and stretching and areas suitable for sand, dust and sun bathing. More specifically, sand and dust-bathing are important for the maintenance of hygiene and help to reduce the number of external parasite considerably (Lampkin, 1997). Similar to the other farm animals, chicken have a strong pecking order by which the birds can recognize each other in flock up to approximately 50-60 other birds on the basis of their head form. Larger groups makes them socially unstable group and create a risk of serious pecking problems, so in such larger flock, subgroups should be formed. There should be one cock for about 4-6 hens in flock like in wild birds. The major behavioral problem faced by the poultry is feather pecking and cannibalism. Finding food is another social behavior of the birds. They usually feed at the same time with the acoustic signals of pecking and scratching acting as a stimulant for other hens. Similarly the noise of the feeding implements like chains can stimulate their feeding behavior. The structure and colour of the food influences feeding in birds but their sense of test is poorly developed. Pecking and scratching are the part of normal feeding behavior, and their housing system needs to provide appropriate space for these activities (Lampkin, 1997).

#### Feeding and watering

The birds should be fed 100% organically grown feed of good quality. All ingredients must be certified as organic, except vitamin and mineral supplements making up to 5% of the diet. The diet should be offered

to the poultry in a form that permit the birds to execute their natural feeding behavior and digestive needs. The digestive system of the chicken is made to handle insects, seeds and grain rather than forage. Therefore, this needs the formulation of concentrated balanced feed rations, if the birds are to be produced organically at required level. The largest component of any organic poultry diet is the cereal (maize). The high quality roughages, particularly legumes can supplement to the diet. Home grown protein sources like peas, beans and rape seed can be utilized. In this regard, peas offer more scope towards organic feed formulation and may be included between 250 and 300g /kg for table chicken and 150 to 20g/kg for laying hens. Oily fish meal can be used in organic rations and it had higher essential amino acid content as compared to full fat Soya. Its use in poultry rations is limited because it is costly as well as organic products were found fishy taints. Sprouted grains are a good source of vitamins and can be used to replace synthetic amino acids. Limestone and phosphate rock can be employed as mineral source for organic ration. For layers, limestone grit and oyster shell will provide needed calcium for egg production. Hence, a balance ration is the key factor for sound and healthy birds. Over feeding must be avoided. Use of synthetic amino acids for poultry diet in organic production system should be avoided. Requirement of essential amino acids can be fulfilled through feeding of organic soya bean, skim milk powder, potato protein, maize gluten etc. (Chander, 2009). The birds must have continuous access and supply of quality water without any antibiotic and bacteriological residues. The water should be regularly tested for ground water contamination.

#### Health care in organic poultry production

If all management practices are directed to the well-being of the birds, they will achieve maximum resistance against disease and prevent many infections. Sick and injured birds should be given prompt and adequate treatment. When illness does occur in the birds, objective should be to find the cause and prevent future out breaks by eliminating the cause and changing management practices. Use of antibiotic should be avoided. Vaccinations should be used only when diseases are known or expected to be a problem in the region of the farm and where these diseases cannot be controlled by other management techniques. Use of natural medicines and methods including Homeopathy and Ayurvedic should be emphasized. In hot and humid climate area, coccidiosis and parasitic

problems are more common. Providing poultry access to species specific feed, housing conditions with good ventilation and ample space to express natural behavior along with establishing clean grazing system and dry litter will help to overcome almost all these health related problems.

Record keeping in organic poultry production

Systematic noting of activities, observations and items with respect to time for future reference, evaluation and monitoring is record keeping. It assists in reporting to the creditors, other farm asset owners, and to others who have a interest in the financial position of the farm business. Important records to be kept in organic farm are breeding records, register for source of animals purchased, formulated organic feed ration record, purchased organic feed record, feed supplements and additives inventory, organic poultry pasture record, health care products inventory, sanitation products inventory, organic egg layers monthly flock record, organic meat poultry flock record, organic poultry slaughter/sales summary and monthly organic egg packing/ sales record.

Important researchable issues in organic poultry production

Many of the organic poultry farming issues identified can be resolved on the basis of existing scientific knowledge and practical experience of Indian poultry producers. A limited number of specific research requirements need to be addressed are:

- Determine the contribution of vegetation and animal protein obtained at range to the nutritional requirements of poultry.
- Develop appropriate breeds which meet slow growth requirements and are acceptable to the consumer.
- Measures to reduce /eliminate the behavioral problems in poultry like feather pecking and cannibalism.
- Examine the relationship between growth potential and productivity, finishing periods and food conversion efficiency under free-range and organic conditions as the lack of predictability in organic systems is potentially a major concern.
- Which segment of the market can be effectively tapped for organic poultry products and with what premium are the concern of study of market strategists.

Constraints for organic poultry farming in India

1. Lack of in-depth knowledge about organic poultry farming on the part of poultry farmers

and awareness among consumers is a hurdle in both at the production and marketing level.

2. Inadequate Supporting Infrastructure like lack of adequate financial support, inadequate local certifying agencies and lack of marketing channels.
3. Strict measures mainly sanitary conditions, quality and traceability followed by developed countries is an obstacle for small and marginal Indian poultry farmers to enter into export of organic products.
4. Training facilities for poultry farmers are not adequate.

Policy interventions for promotion of organic poultry

The efforts should be continued to develop the required regulations which are appropriate to the continued development of the organic poultry sector in accordance with the overall objectives of organic farming. Further, the government should provide opportunities within future for national and regional marketing and processing grant schemes for the development of centralized packing and processing facilities. The government may also consider the option of capital investment grants to assist the more intensive poultry producers in adapting to the housing and stocking rate requirements of organic standards.

Organic poultry production in India at the moment is not regulated by any formal standards at national level except few prescribed standards by international agencies. All Indian producers who want to have their products labeled as organic poultry must in effect comply with the international / IFOAM standards. In an international context, the IFOAM standards for organic livestock production underpin most national organic livestock standards which are not otherwise covered by legislation, and these standards have had some impact on the drafting of international trade agreements such as the FAO Codex Alimentarius definitions and WTO agreements. Further, the IFOAM standards do not specify much detail relating to poultry production, but deal more with general principles. However, a more critical review of some of these standards with respect to organic poultry for India is necessary. Developing the processing and marketing standards for poultry, including the optional use of indications concerning the type of farming (specifically: extensive indoor (barn-reared), free-range, traditional free-range and free range: total freedom) is need of the hour.

Conclusion

In true sense 'livestock revolution' aims not

merely increasing the quantum of production but to have an holistic approach to improve food security and safety of consumers. India has tremendous potential in organic poultry production as large part of country is organic by default. On the other hand the ill effects of conventional farming are compelling the consumers to shift to the organic products.

So, The organic poultry is poised to transform poultry sector in particular and animal-agriculture in general, if regulations, infrastructure facilities, transfer of technology and sectoral cum target oriented development programmes are brought in practice with basic thrust towards 'food safety and poultry welfare'. What we need today is the necessary institutional and policy framework that can pave the way for the promotion of organic poultry farming in particular and organic livestock farming in general on a nation-wide scale.

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