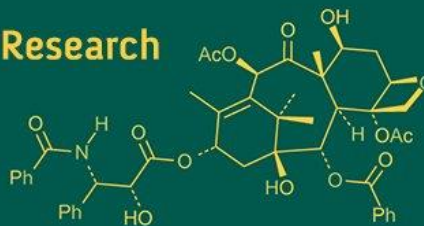


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Feeding and management practices in commercial broiler farms: An empirical study from Udgir Tahsil of Latur District

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Abstract

The present investigation entitled "Studies on Adoption of Management Practices Followed at Commercial Broiler Farms in Udgir Tahsil of Latur District" was conducted in the Department of Animal Husbandry and Dairy Science, College of Agriculture, Latur, during 2025-2026. The study aimed to assess the adoption of recommended feeding and management practices, identify adoption gaps, evaluate the economics and marketing of broiler farming, and document the constraints faced by commercial broiler farmers. A total of 36 broiler farms were selected using purposive and stratified random sampling and categorized into small (500-1500 birds), medium (1500-2500 birds), and large (>2500 birds) farms.

The results indicated a high adoption of recommended practices. Most respondents followed the All-In-All-Out system (75.00%), deep litter housing (94.44%), electricity-based brooding (100%), and the recommended vaccination schedule (100%). All farmers practiced anti-transport stress feeding, provided crushed maize immediately after chick placement, and adopted the all-mash feeding system, while 94.44 per cent relied on commercial feed. The overall adoption of recommended feeding and management practices was 79.26 and 75.17 per cent, with adoption gaps of 20.74 and 24.83 per cent, respectively. Major deficiencies were observed in biosecurity, feed quality assessment, mortality record maintenance, and isolation of diseased birds.

The Producer → Consumer marketing channel was the most efficient, providing the highest producer's share (94.39-95.16%). Major constraints included dependence on middlemen (80.55%), high feed cost, price fluctuations, labour wages, transportation, and electricity-related issues. Economic analysis revealed increasing profitability with farm size, as indicated by cost-benefit ratios of 1:1.10, 1:1.17, and 1:1.22 for small, medium, and large farms, respectively. The study concluded that strengthening extension services and promoting scientific management practices can further improve the productivity and profitability of commercial broiler farming.

Keywords: Commercial broiler farming, management practices, feeding practices, adoption gap, marketing, constraints, economics, profitability

Introduction

The total poultry in the country is 851.81 million in 2019, increased by 16.8% over previous Census. Whereas, total backyard poultry in the country is 317.07 million in 2019, increased by 45.8% over previous census. The total commercial poultry in the country is 534.74 million in 2019, increased by 4.5% over previous census. In India, 260 million layers generate 3.4 million tonnes (74 billion) of eggs per year, while 3000 million broilers create 3.8 million tonnes of chicken meat. The poultry industry contributes over Rs.70,000 crores to the national GDP and employs over 4 million people directly and indirectly. (Pathak *et.al* 2022) ^[1] The Indian poultry industry is experiencing robust growth, ranking as the world's 3rd largest egg producer (142.77 billion in 2023-24) and 5th largest in chicken meat production.

In Latur district, as per the 20th Livestock Census (2019), the total poultry population was 4,88,826, comprising 2,99,827 commercial poultry and 1,88,999 backyard poultry. The purpose of the "Studies on adoption of management practices followed at commercial broiler farms in Udgir tahsil of Latur district" was to investigate the actual situation, major

challenges, profitability-influencing factors, market structure, and broiler farmers' reliance on different agencies with specific objectives of studying.

Broiler farming constitutes a major segment of the commercial poultry industry and plays a significant role in meeting the increasing demand for high-quality animal protein. Broilers are specialized meat-type chickens genetically selected for rapid growth, superior feed efficiency, and high meat yield within a short production period. The success of broiler production largely depends on the adoption of efficient farm management practices that optimize growth performance, maintain flock health, and ensure economic sustainability. Scientific broiler management integrates housing, nutrition, environmental control, health care, biosecurity, and waste management to achieve maximum productivity under intensive production systems.

The economic success of commercial broiler farming is determined by the efficient conversion of production inputs into marketable output. The profitability of broiler farming is further enhanced through improved production efficiency, reduced mortality, effective marketing, and optimum utilization of available resources. Conversely, fluctuations in feed prices, disease outbreaks, labour shortages, and unstable market conditions adversely affect farm income and economic sustainability. Hence, periodic economic evaluation of broiler enterprises is indispensable for assessing production efficiency, identifying cost constraints, and formulating strategies to improve profitability and long-term sustainability.

Materials and Methods

The present study was conducted in both urban and rural areas of Udgir tahsil of Latur district, which comprises a total of ten tahsils. For this research, Udgir tahsil was selected under the jurisdiction of VNMKV, Agricultural University, Parbhani. The Broiler farms were categorized into the three groups based on their size: small, medium, and large. Farms with 500-1500 birds were considered as small-size farms, those with 1500-2500 birds were classified as medium-size, and farms with more than 2500 birds were classified as large-size. Each group had twelve broiler farms that raised broilers of each category.

Selection of respondents

The selection of respondents for the present study was carried out using a purposive and stratified sampling technique. The study area was first identified based on the concentration of broiler farms, and a list of commercial broiler farmers was obtained from local veterinary offices and extension agencies. The respondents were then categorized into different groups based on farm size, such as small, medium, and large-scale commercial broiler farmers. All the total 36 respondents were selected randomly, from each category 12 farms were selected to ensure adequate representation of all groups.

Pretesting

For study, a questionnaire was developed and pre-tested randomly at some commercial broiler farmers, and then a structured interview schedule was prepared, pre-tested, and administered personally for data collection. The data was gathered through a questionnaire based on one-on-one interviews of total 36 commercial broiler farmers.

Feeding: Feed consumption, frequency of feeding, cost per kilogram, and the type of feed used for broilers whether company or personal mixed feed were all recorded. The farmer must either use "ready to use feed" that is sold in stores or make his own feed. Feed accounts for between 70 to 75 percent of a farm's total costs. Gaining insight into the economics and practices of broiler feed in Udgir tahsil was the aim of the data collection. Snedecor and Cochran (1994)^[2] state that statistical analysis was done on the information gathered on the many parameters such as Personal interview and direct observation were used to collect data from the respondents regarding general management and feeding practices adopted.

Management of birds

Data in relation to system of rearing, system of housing, interval between two batches, then water management which include source of water, method of supply, then brooding practices of day old chicks and duration of brooding, then types of litter material used, and methods used for reducing heat in summer.

Results and Discussion

The study revealed that the availability and quality of foundation stock, particularly day-old chicks (DOCs), played a crucial role in the successful operation of commercial broiler farms. Farmers procured chicks from both private hatcheries and government agencies depending on their accessibility and availability. The cost of chicks in the study area was found to vary in accordance with prevailing market prices at the national level. Most of the respondents relied on government veterinary laboratories and private diagnostic centres for disease diagnosis, health monitoring, and vaccination-related services.

An analysis of factors such as chick quality, bird productivity, feed conversion ratio (FCR), disease incidence, availability of chicks, and input costs indicated that these variables significantly influenced the performance of broiler farms. The findings further showed that the majority of broiler farmers in Udgir tahsil had adopted improved and scientific management practices. This may be attributed to their better financial status and awareness regarding modern poultry production technologies. Adoption of these advanced management practices contributed to improved flock performance, higher productivity, and increased profitability of broiler farming enterprises in the study area.

Management practices followed in broiler farms

A total of 36 broiler farmers, comprising small, medium and large farm categories, were interviewed for the present study. A structured questionnaire was used to collect information regarding the management practices followed on broiler farms. The results revealed that 75.00 per cent of broiler farmers adopted the all-in-all-out system of rearing, whereas 25.00 per cent followed the multi-batch system (Table 1). It was further observed that 94.44 per cent of the respondents reared birds under the deep litter system, while only 5.55 per cent adopted the cage system. The predominance of the deep litter system among broiler farmers indicates its suitability and economic feasibility under field conditions.

According to the results, 33.33 per cent of the farmers maintained batches of 500-1500 birds, 33.33 per cent

maintained 1500-2500 birds and 33.33 per cent maintained more than 2500 birds per batch. Table 1 further showed that 25.00 per cent of broiler farmers maintained an interval of 8-15 days between two successive batches, while none of the respondents adopted an interval of up to 7 days or 16-21 days. Maintaining a gap between batches is essential for proper cleaning and disinfection of poultry houses.

The findings indicated that electricity was used by all broiler farmers (100%) for brooding day-old chicks. None of the respondents used charcoal or kerosene lamps for brooding purposes. It was also observed that 75.00 per cent of the farmers brooded chicks for 1-2 weeks, whereas 25.00 per cent maintained brooding for 2-3 weeks. None of the respondents continued brooding for 3-4 weeks. These results suggest that most farmers followed the recommended brooding period depending on climatic conditions and chick requirements.

The study further revealed that rice husk was the most commonly used litter material, adopted by 72.22 per cent of the farmers, followed by sawdust used by 27.77 per cent of the respondents. None of the farmers used chaffed paddy straw as litter material. The preference for rice husk may be due to its better absorbency, availability and suitability for broiler production systems.

The results showed that 63.88 per cent of the farmers provided light to broilers for 12 hours daily, while 25.00 per

cent and 11.11 per cent of the farmers provided lighting for 20 hours and 24 hours, respectively. All the respondents used electric bulbs as the source of lighting on their farms, whereas none of the farmers used kerosene lamps. The widespread use of electric lighting reflects the availability of electricity and awareness among farmers regarding proper flock management.

It was found that 86.11 per cent of the farmers used fans to reduce heat stress during summer, whereas 11.11 per cent used wet curtains and only 2.77 per cent used water sprinklers. The higher use of fans indicates their effectiveness and affordability in maintaining a comfortable environment for broiler birds. The results also revealed that 69.44 per cent of the farmers depended on family members for carrying out routine farm activities, while 30.55 per cent employed permanent labourers. None of the respondents engaged daily wage labourers on their farms.

The study further showed that all the broiler farmers (100%) followed a vaccination programme for disease prevention and flock health management, while none of the respondents neglected vaccination practices. The complete adoption of vaccination reflects the awareness of farmers regarding disease control and the importance of maintaining productivity and profitability in broiler farming.

Table 1: Most farmers adopted scientific broiler management.

Sr. No.	Traits	Categories	Number of Farmers			Overall Percentage
			Small	Medium	Large	
1.	System of rearing	All in all out	10	9	8	27 (75%)
		Multi-batch	2	3	4	9 (25%)
2.	Method of rearing birds	Deep litter system	12	12	10	34 (94.44%)
		Cage system	0	0	2	2 (5.55%)
3.	Size of batch (no. of birds per batch)	500-1500	12	0	0	12 (33.33%)
		1500-2500	0	12	0	12 (33.33%)
		Above 2500	0	0	12	12 (33.33%)
4.	Interval between two batches	up to 7days	0	0	0	0 (0%)
		8-15 days	2	3	4	9 (25%)
		16-21 days	0	0	0	0 (0%)
5.	Brooding of day old chick	Electric	12	12	12	36 (100%)
		Charcoal	0	0	0	0 (0%)
		Kerosene lamp	0	0	0	0 (0%)
6.	Duration of brooding	1-2 week	9	10	8	27 (75%)
		2-3 week	3	2	4	9 (25%)
		3-4 week	0	0	0	0 (0%)
7.	Type of litter material used	Rice husk	4	10	12	26 (72.22%)
		Saw dust	8	2	0	10 (27.77%)
		Chaffed paddy straw	0	0	0	0 (0%)
8.	Light provided to the birds	12 hours	9	8	6	23 (63.88%)
		20 hours	3	2	4	9 (25%)
		24 hours	0	2	2	4 (11.11%)
9.	Source of light	Electric bulb	12	12	12	36 (100%)
		Kerosene lamp	0	0	0	0 (0%)
10.	Method used for reducing heat in summer	Fan	8	11	12	31 (86.11%)
		Water sprinklers	0	1	0	1 (2.77%)
		Wet curtains	4	0	0	4 (11.11%)
11.	Labours engaged at farm	Family members	12	9	4	25 (69.44%)
		Permanent labours	0	3	8	11 (30.55%)
		Daily wages	0	0	0	0 (0%)
12.	Vaccination	Followed	12	12	12	36 (100%)
		Not followed	0	0	0	0 (0%)

Feeding practices adopted by the broiler farmers

The primary objective of feeding management in broiler production is to achieve maximum growth and feed

efficiency at minimum cost. Information regarding the feeding practices adopted by broiler farmers in the study area was collected and is presented in Table2 According to

the findings, all categories of broiler farmers followed anti-transport stress feeding practices and ensured that day-old chicks were fed immediately after arrival at the farm. It was also observed that 100 per cent of the farmers provided crushed maize as the initial feed to the chicks. Early feeding after transportation helps chicks recover from transport stress and promotes better growth performance.

With regard to feeding systems, none of the broiler farmers adopted the cafeteria or free-choice system of feeding during the survey. Broiler rations are generally available in mash, crumble, pellet and extruded forms. The results indicated that all the respondents (100 per cent) followed the all-mash method of feeding, whereas none of the farmers used pellet feeding on their farms. The preference for mash feed may be due to its lower cost and easy availability. Although pellet feeding minimizes feed wastage and improves feed conversion efficiency, its higher cost compared to mash feed may discourage its adoption by farmers. The present findings are in agreement with those reported by Nir *et al.*, (1994)^[3].

During the study, the adoption of various controlled feeding practices was also investigated. It was observed that none of the broiler farmers practiced forced feeding or restricted feeding. However, 66.66 per cent of the respondents adopted phase feeding, while 33.33 per cent did not follow this practice. The adoption of phase feeding by a majority of farmers indicates awareness regarding the changing nutritional requirements of broilers at different stages of growth.

The results further revealed that only 5.55 per cent of the broiler farmers manufactured their own feed, while the remaining 94.44 per cent relied entirely on commercially prepared feed. The low level of on-farm feed manufacturing may be due to the high cost of feed ingredients, lack of feed formulation knowledge and the convenience of purchasing commercial feed. Dependence on commercial feed, however, increases the overall cost of broiler production.

It was also found that very few farmers used non-conventional feed ingredients in broiler rations. Overall, only 5.55 per cent of the respondents adopted non-conventional feed ingredients, whereas 94.44 per cent did not utilize such feed resources. The low adoption may be attributed to limited awareness regarding their nutritional value and lack of availability in the study area.

The study further showed that 44.44 per cent of the broiler farmers used automatic feeding and watering devices, while 55.55 per cent relied on conventional feeding and watering systems. The use of automatic equipment was observed mainly among medium and large farms, where labour-saving and efficient management of larger flocks are important considerations.

The findings also revealed that all the respondents (100 per cent) followed practices to reduce feed wastage on their farms. Feed accounts for the major share of broiler production costs; therefore, minimizing feed wastage is essential for improving profitability. Proper feeder management and efficient feeding practices adopted by the farmers contributed to better utilization of feed resources and reduced production costs.

Table 2: Scientific feeding practices widely adopted.

Sr. No.	Feeding practices	Small		Medium		Large		Overall Percentage	
		Yes	No	Yes	No	Yes	No	Yes	No
A)	Feeding pattern and practices								
1.	Anti-transport stress feeding	12	0	12	0	12	0	36 (100%)	0 (0%)
2.	Initial feeding of crushed maize	12	0	12	0	12	0	36 (100%)	0 (0%)
3.	Use of cafeteria or free choice system	0	12	0	12	0	12	0 (0%)	36 (100%)
4.	Use of all mash method	12	0	12	0	12	0	36 (100%)	0 (0%)
5.	Use of pellet feeding	0	12	0	12	0	12	0 (0%)	36 (100%)
B)	Controlled feeding								
1	Forced feeding	0	12	0	12	0	12	0 (0%)	36 (100%)
2.	Restricted feeding	0	12	0	12	0	12	0 (0%)	36 (100%)
3.	Phase feeding	0	12	12	0	12	0	24 (66.66%)	12 (33.33%)
C)	Manufacture of own feed	0	12	1	11	1	11	2 (5.55%)	34 (94.44%)
D)	Use of non-conventional feed ingredient	2	10	0	12	0	12	2 (5.55%)	34 (94.44%)
E)	Use of automatic feeding and watering devices	0	12	8	4	8	4	16 (44.44%)	20 (55.55%)
F)	Practices followed to reduce the feed wastage	12	0	12	0	12	0	36 (100%)	0 (0%)

Conclusion

The following conclusions were drawn from the present study:

1. The majority of broiler farmers adopted scientific management practices such as deep litter housing, all-in-all-out rearing, proper brooding and vaccination programmes.
2. Recommended feeding practices showed a relatively high adoption level; however, significant gaps existed in scientific feeding schedules, feed quality assessment and feed conversion efficiency monitoring.
3. Adoption of management practices was satisfactory, but important gaps were observed in biosecurity measures, visitor restriction, mortality record maintenance and isolation of diseased birds.

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