

A COMPREHENSIVE STUDY OF ASEEL CHICKEN REARING, FEEDING AND MARKETING: SOCIO-ECONOMIC IMPACTS ON FARMERS IN PUDUKKOTTAI DISTRICT

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ABSTRACT

The study investigates the rearing practices and feeding systems of Aseel chicken in Pudukkottai District, Tamil Nadu, and a region where backyard poultry farming significantly contributes to rural livelihood. Data were collected from 60 farmers using structured questionnaire to assess their socio-economic profile, and management practices. Most farmers were categorized as small (51.67%) or marginal (36.67%) landholders, owning 2.5–5 acres of land, and considered poultry rearing as a secondary income source alongside agriculture, which was the primary occupation for 86.67% of respondents. Rearing systems predominantly followed the “all-in-all-out” method (55%), although housing and litter management practices often deviated from ideal standards. Only 15% of farmers provided recommended floor space of 1.5–2 sq. ft. per bird and litter thickness of 3–5 inches. Feeding practices relied heavily on scavenging (73.33%), with supplementary feeding using locally available ingredients such as broken rice, maize, and other grains. Single-type litter materials, like paddy husk, coir pith, or wooden shavings, were used by 83.33% of farmers. The study also found that the majority of farmers (66.67%) had medium experience in poultry rearing, averaging 15.48 years. Despite considerable traditional knowledge, there were notable gaps in adopting improved husbandry practices such as ideal housing, litter management, and supplementary feeding. These findings highlight the need for capacity-building initiatives to enhance farmers’ awareness and implementation of optimal rearing techniques, ultimately improving productivity and contribute to the sustainable livelihoods of rural communities.

Keywords: Backyard poultry, Aseel, rearing, feeding, socio-economic status

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INTRODUCTION

India’s poultry sector is characterized by two systems: commercial and traditional backyard poultry farming. The latter plays

a vital role in rural economy providing nutrition and supplementary income. Aseel chicken, an indigenous breed known for its resilience and meat quality, is a key component of backyard poultry farming. The livestock and poultry sector significantly contributes to India's economy (Nath *et al.*, 2012). India has two major poultry production systems: commercial farming (79%) and backyard poultry (Siddiky, 2017). While commercial poultry has seen rapid growth, rural backyard poultry has slowly gained momentum and remains essential, contributing to 11% to total egg production (Kumaresan *et al.*, 2008).

Backyard poultry farming plays a crucial role in rural areas, providing protein-rich food and supplementary income, particularly benefiting women and economically weaker sections (Siddiky, 2017). However, rural poultry farming faces challenges such as low productivity, disease incidence, predation, and poor market access (Muchenje and Sibenda, 1997). The indigenous desi chicken, despite its lower productivity, is valued for its hardiness, foraging ability, and superior meat quality (Rajkumar *et al.*, 2016).

The Government and non-governmental agencies are promoting backyard poultry to bridge the animal protein gap and uplift rural livelihoods, but socio-economic factors hinder large-scale adoption (Vetrivel and Chandrakumarmangalam, 2013). Native breeds like Aseel are notable for their resilience and meat quality despite low productivity (Rajkumar *et al.*, 2017). Predation remains a major cause of chick

mortality in free-range systems, accounting for 55% of early-stage losses (Alfred *et al.*, 2012).

To enhance productivity of desi chicken, feeding locally available cereals and adopting semi-intensive poultry farming can improve nutrition, income, and food security in rural India (Bhattacharya *et al.*, 2005; Mapiye *et al.*, 2008). Despite commercialization, backyard poultry remains a critical livelihood strategy and a "walking bank" for rural households (FAO/APHCA, 2008). This study aims to analyze the rearing, feeding, and marketing practices of Aseel chicken in Pudukkottai District, addressing the gaps in knowledge about this native breed.

MATERIALS AND METHODS

Sample size

The study was conducted in Pudukkottai District of Tamil Nadu, where ten villages were purposively identified, and respondents were selected through a simple random sampling method. Primary data were collected from 60 farmers using a well-structured questionnaire. The study focused on assessing the socio-economic profile of the respondents, as well as the rearing systems and feeding practices adopted for Aseel chickens.

Study Area

Pudukkottai District was formed from bifurcation of parts of Tiruchirappalli and Thanjavur districts on 14th January, 1974. Pudukkottai consists mainly of

lowland plains just north of the Vellar river of Tamil Nadu between 9° 51' and 10° 44' North latitude and 78° 25' and 79° 16' East longitude.

Statistical Analysis

Statistical Package for the Social Sciences (SPSS, 2019) was used to analyse the data and descriptive statistics such as mean, range, frequency and percentage were employed.

RESULTS AND DISCUSSION

The profile of farmers involved in rearing Aseel chicken in Pudukkottai district are discussed as follows:

Family size

The results of the study in Table 1 indicate that maximum number of farmers belonged to the small family size (51.67 %) category, followed by medium (36.67 %) and large size family (11.66 %) categories. The results are in accordance with the findings of Balamurugan *et al.* (2017) who had reported that the maximum number of farmers had small size family size (70%), whereas 21% farmers belonged to medium size and 9% farmers belonged to large family size.

Land holding

The distribution of Aseel farmers based on their land holding is displayed in Table 2. The results of the study revealed that majority of the farmers (51.67%) are in small farmer category with 2.5 to 5 acres of land followed by marginal (36.67%) and

large farmer category (11.66%). The results are in contrast with the findings of Mandal *et al.* (2006) who reported that nearly half of the respondents were having less than 2.5 acres which will be highly useful to get subsidiary income by adopting animal husbandry activities. In this study it was observed that majority of the Aseel farmers were utilizing their own land (100%) for backyard poultry rearing. These results are in accordance with the findings of Balamurugan *et al.* (2017) who had revealed that majority of backyard poultry farmers utilized their own land (90%) for poultry rearing and they were categorized as marginal farmers (less than 2.5 acres of land).

Occupation

The results on occupation of farmers are represented in Table 3. Agriculture was the primary occupation for majority (86.67%) of the respondents, while more than three-fourth (81.67%) of them adopted Aseel chicken rearing as secondary occupation. It was interesting to note that none of the farmers were following Aseel chicken rearing as their primary occupation. These results are in accordance with the findings of Bikash *et al.* (2010) who had reported that majority (84%) of the respondents were rearing backyard poultry as subsidiary occupation. This result is similar to the findings of Dumrya *et al.* (2015) who had stated that the respondents are primarily agricultural labourers and three-fourth, (73.75%) of them were involved in rearing backyard poultry (secondary occupation).

Poultry farming Experience

The data collected during the survey work on the experience in backyard rearing of Aseel chicken are depicted in Table 4. Majority of the farmers (66.67%) had medium level of backyard poultry farming experience, followed by low (20%) and high (13.33%) level of experience in backyard poultry farming with an average experience of 15.48 years. This result was in contrast with the findings of Mandal *et al.* (2006) who had reported that majority (47.92%) of the poultry farmers were rearing poultry for more than 6 years, followed by 32.50% and 13.33% with 5 to 6 years and 3 to 4 years of backyard poultry farming experience respectively. These results are in accordance with the findings of Dumrya *et al.* (2015) who had stated that 73.75% of rural people had low level of experience (2-10 years) with an average experience of 7.15 years. Similarly, Balamurugan *et al.* (2017) had reported that the majority of the farmers rearing backyard chicken were having medium level of experience (between 5 to 10 years) in Theni district of Tamil Nadu.

Rearing systems/practices adopted

The rearing systems/practices adopted by the selected backyard poultry farmers are presented as follows:

Floor space

The results of the data collected during the survey work on floor space provided by the different types of farmers are presented in Table 5. None of the farmers were providing the ideal floor space of 1.5

to 2 sq. ft. per bird during the night shelter. Siddiky (2017) had stated that the birds should be provided 1.5 to 2.0 square feet/bird floor space as shelter which protects the birds from rain and sun during day time.

Rearing pattern

The results of the data collected during the survey work on rearing system are presented in Table 6. Majority of the farmers reared Aseel birds in All-in-all-out system (55%) followed by multiple batch system of rearing (45%). These results are in contrast with the findings of Balamurugan *et al.* (2015) who reported that the most (77.78%) of the farmers in the study area practiced multiple batch system, while 22.22% of the farmers practiced All-in-all-out system of rearing for native chicken.

Litter type

The results of the data collected during the survey work on type of litter material used by the farmers are depicted in the Table 7. Majority of the farmers in Pudukkottai district were using single type of litter material namely Paddy husk or wooden shaving or Coir pith or Groundnut hulls (83.33%) followed by combination of any two types of litter materials (16.67%). This result is in accordance with the findings of Satheesh kumar (2011) who had reported that the native chicken farmers in Western districts in Tamil Nadu used only coir pith as a predominant litter material.

Litter thickness

The results of the study on litter thickness are presented in Table 8. Majority

of the farmers (85%) were not providing ideal thickness of litter. Only 15% of the farmers provided ideal thickness of litter material in early stage. These results are in accordance with the findings of Pathak and Nath (2013) who also described that the thickness of the litter should not be less than 5 – 10 cm and in addition stated that the litter material should be treated with slaked lime to avoid caking.

Feeding system

The results of the data collected during the study on selected farmers regarding adoption of feeding systems are presented in the Table 9. Majority (73.33%) of the farmers were allowing the birds for scavenging to meet the nutrient requirement and in addition provided feed ingredients available at home followed by 23.33% of farmers who adopted the the practice of scavenging birds and the remaining 3.34% of farmers provided feed ingredients available at home and also company manufactured feeds. This result was in accordance with the findings of Kyule (2014) who had reported that scavenging is commonly adopted by farmers rearing backyard chicken and in addition fed small amount of extra feed in the form of cereals, millets, sorghum and maize.

Feed ingredients used

The results of the study on feed ingredients used by different type of farmers are presented in Table10. Majority (53.33%) of the farmers are using combination of any two ingredients, followed by 23.33% of farmers who were using combination of any three ingredients, 20% of the farmers

were using single ingredient available at home whereas, few farmers (3.34%) are using home available feed ingredients along with company feed. These results are in accordance with the findings of Bhattacharya *et al.* (2005) who had reported that birds under free-range conditions can meet their protein requirement through scavenging, but the possibility of energy deficiency is common, and hence feeding the birds with different locally available cereals like maize, bajra, ragi, jowar and broken rice along with rice polish or rice bran is always beneficial to sustain the production of chicken under free-range conditions.

CONCLUSION

Aseel chicken rearing in Pudukkottai District remains a viable secondary source of income for small-scale farmers. However, there is a need for improved biosecurity, scientific rearing methods, and organised marketing channels to enhance productivity and profitability. The Extension personnel working in Government sector and NGO personnel should focus on training farmers in modern poultry practices while preserving the traditional essence of Aseel chicken farming.

Authorship Contribution Statement

Author 1 was responsible for field-level data collection. Author 2 provided guidance to expedite the research process. Author 3 contributed to data compilation and analysis. Author 4 ensured proper guidance and adherence to correct methodologies.

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Table.1. Family size

S. No.	Family members (in numbers)	Family size			Total
		Small	Medium	Large	
1	Two	2	3	0	5
2	Three	2	5	1	8
3	Four	13	9	1	23
4	Five	10	5	2	17
5	Six	4	0	3	7
Total		31 (51.67%)	22 (36.67%)	7 (11.66%)	60 (100.00%)

Table.2. Land holding

S. No.	Farmer type	Land holding			Total
		< 2.5 acres	2.5 to 5 acres	>5 acres	
1	Small farmer	0	30	1	5
2	Marginal farmer	18	4	0	8
3	Large farmer	0	0	7	23
Total		18 (30 %)	31 (51.67%)	8 (13.33%)	60 (100.00%)

Table.3. Occupation

S. No.	Occupation	Farmer type					
		Small farmer		Marginal farmer		Large farmer	
		Primary	Secondary	Primary	Secondary	Primary	Secondary
1	Agriculture	26	7	22	2	4	2
2	Poultry / Livestock rearing	0	20	0	22	0	7
3	Other businesses	5	0	2	0	1	0
Total		31	27	24	24	5	9

Table.4. Experience in poultry rearing

S. No.	Farmer type	Experience in poultry rearing			Total
		Low	Medium	High	
1	Small farmer	6	22	3	31
2	Marginal farmer	6	14	2	22
3	Large farmer	0	4	3	7
Total		12 (20 %)	40 (66.67%)	8 (13.33%)	60 (100.00%)

Low - Upto 8 years (Mean – SD)

Medium - 8 to 23 years (between Mean ±SD)

High - More than 23 years (Mean + SD)

Table.5. Floor space/bird

S. No.	Floor space /bird (sq.ft)	Farmer Type			Total
		Small farmer	Marginal farmer	Large farmer	
1	0.20	1	0	1	2
2	0.30	4	1	2	7
3	0.40	16	14	3	33
4	0.50	6	5	1	12
5	0.60	3	1	0	4
6	0.90	0	1	0	1
7	1.00	1	0	0	1
Total		31	22	7	60

Table.6. Rearing pattern

S.No.	Rearing Pattern	Farmer Type			Total
		Small farmer	Marginal farmer	Large farmer	
1	All-in-all out	16 (26.67%)	17 (28.34%)	0 (0.00%)	33 (55.00%)
2	Batch system	15 (25.00%)	5 (8.33%)	7 (11.66%)	27 (45.00%)
Total		31 (51.67%)	22 (36.67%)	7 (11.66%)	60 (100.00%)

Table.7. Litter type

S. No.	Farmer type	Litter Type		Total
		Paddy husk / Wooden shavings/ Coir pith / Groundnut hull	Combination of any 2 (Paddy husk, Coir pith/ Paddy husk, Wooden shavings/ Coir pith, Wooden shavings)	
1	Small farmer	25	6	31
2	Marginal farmer	19	3	22
3	Large farmer	6	1	7
Total		50 (83.33%)	10 (16.67%)	60 (100.00%)

Table.8. Litter thickness

S.No.	Litter thickness (inches)	Farmer Type			Total
		Small farmer	Marginal farmer	Large farmer	
1	Below 3 inches	28 (26.67%)	17 (28.34%)	0 (0.00%)	33 (55.00%)
2	3 to 5 inches	3 (5.00%)	4 (6.67%)	2 (3.33%)	9 (15.00%)
Total		31 (51.67%)	22 (36.67%)	7 (11.66%)	60 (100.00%)

Table.9. Source of feed

S.No.	Farmer type	Source of feed			Total
		Own feed / Company feed	Scavenging	Own feed and Scavenging	
1	Small farmer	1 (1.67%)	10 (16.67%)	20 (33.33%)	31 (51.67%)
2	Marginal farmer	0 (0.00%)	2 (3.33%)	20 (33.33%)	22 (36.67%)
2	Large farmer	1 (1.67%)	2 (3.33%)	4 (6.67%)	7 (11.660%)
Total		2 (3.34%)	14 (23.33%)	44 (73.33%)	60 (100.00%)

Table.10. Feed ingredients

S. No.	Farmer type	Feed formula				Total
		Broken rice/ Unpolished rice	Broken rice, cumbu/ Rice, rice bran/ rice, cumbu/ Broken rice, unpolished rice	Broken rice, cumbu, broken maize/ Rice, broken maize, cumbu/ Broken rice, cooked rice, cumbu	Broken rice, cumbu, rice, Company feed	
1	Small farmer	6	17	7	1	31
2	Marginal farmer	6	10	6	0	22
3	Large farmer	0	5	1	1	7
Total		12 (20.00%)	32 (53.33%)	14 (23.33)	2 (3.34%)	60 (100.00%)

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