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## Poultry farming and food security in Puducherry: Study on problems and prospects

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### Abstract

Poultry farming is an important vocation of the farmers of Union Territory of Puducherry. Currently Puducherry has a poultry population of around 2.7 lakhs which is hardly enough to meet the demand of meat and eggs in Puducherry. Although there is enough scope for developing the poultry farming, few farmers are only taking up the practice. Under these circumstances, this study was performed to understand the challenges faced by the poultry farmers and also to suggest the possible solutions so that poultry farming can be improved to provide food security. A total of 45 farmers in and around Puducherry were interviewed using a structured questionnaire. The farmers who reared birds for egg, meat and dual purposes were 33.44 per cent, 2.22 per cent, 64.44 per cent, respectively. About 53.33 per cent had reported about stray dog problems. Respiratory and Gastro intestinal diseases (46.67 per cent) and other diseases like coccidiosis, fowl pox, etc. were reported as a cause of mortality in birds by 84.44 per cent of respondents and 15.56 per cent of mortality was due to dog bite. Although 64.44 per cent were aware about vaccination for Ranikhet disease, fowl pox but only 44.44 per cent vaccinated their birds for Ranikhet under the guidance of the veterinarians. Out of all the respondents only 44.4 per cent had dewormed their birds. The farmers using poultry wastes as manure were 60 per cent and remaining 40 per cent disposed by dumping, whereas the dead birds were either buried (75.56 per cent) or dumped in garbage (13.33 per cent) or sold (6.67 per cent). Better assurance on food security can be achieved through attracting more farmers into poultry farming sectors by creating awareness campaigns on different aspects of poultry rearing like management and waste disposal and also by improving the knowledge of existing poultry farmers.

**Keywords:** Poultry farming, awareness campaigns, food security

### Introduction

Poultry are domesticated birds kept for meat and egg production. Poultry farming is an important agribusiness enterprise that has a great potential for providing additional income to farming communities and educated unemployed persons. Poultry farming is receiving greater attention in recent years, with growing recognition for its potential contribution to livelihood and food security in developing countries. India ranks third in egg production in the world accounting 5.65 percent of global egg production and fifth in the poultry meat production. Poultry provides employment to about 1.5 million people in the country [7]. The annual per capita consumption in India is 74 eggs [7]. Poultry farming is an important vocation of the farmers of Union Territory of Puducherry. Currently Puducherry has a poultry population of around 2.7 lakhs [1]. This is hardly enough to meet the demand of meat and eggs in Puducherry. Though poultry production is a profitable agribusiness which needs less investment, the farmers are mostly reluctant to take up this vocation. Although backyard poultry farming is common in rural areas the numbers are limited. Under this situation, present study was conducted to understand the problems and challenges faced by the poultry farmers and also to analyze the various constraints in poultry farming in Puducherry. This study was also planned to suggest different mitigation strategies to encourage the poultry farming so that food security through poultry production system can be ensured.

### Materials and Methods

This study adopted a survey research design according to Nworgu, (2006) where a group of people or items is studied by collecting and analyzing data from people or items was considered to be representative of the entire group [9]. In this study, 45 farmers were interviewed using a structured questionnaire containing both open and close ended questions pertaining to poultry production.

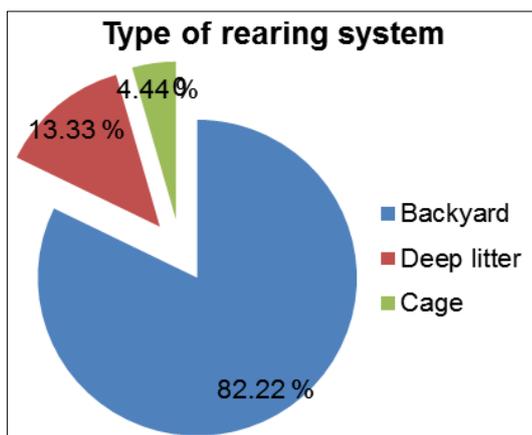
The questionnaire was framed to obtain information regarding demographic profile like age, sex, educational status; management practices including vaccination, deworming, use of feed and feed supplement; knowledge about diseases commonly encountered in the flock and reason for mortality; any other problems faced in poultry rearing like poisoning, stray dog problems, snake bite etc.; marketing of product and market season; waste and dead bird disposal. Access to satisfactory veterinary assistance was also enquired. The data collected was analyzed as per Snedecor and Cochran (1994) to know the relationship between different variables [4].

**Result and Discussion**

It was observed that most of the respondents were males (64.44 %). The majority of the respondents belonged to the age group between 36 to 51 years ( 46.67 %) followed by 20 to 35 years (33.33%) and above 50 years (20 %). In a study conducted by Sridharan (2017) [3] maximum numbers of respondents (41.3 %) were under the middle age group and majority of them were males (93 %) which were in accordance with our study. But the literacy rate by Sridharan (2017) [3] was found to be 100 % whereas in our study it was found as 91.1% only. As far as the respondents in this study were concerned, males were interested in poultry farming in Puducherry and some of the respondents were illiterate. All those illiterate belonged to more than 50 years of age group and were females.

**Table 1:** Demography details of the farmers.

S. No	Particulars	Group	Percentage (%)
1	Sex	Male	64.44
		Female	35.56
2	Age	Young(20 – 35)	33.33
		Middle(36-50)	46.67
		Old(>51)	20
3	Education	Uneducated	8.89
		School educated	46.67
		Degree holders	44.44

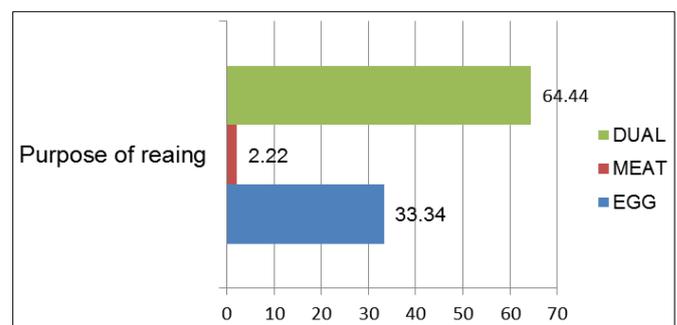


**Fig 1:** The type of rearing system

Most of the farmers were rearing birds in backyard (82.22 %) with the flock size ranging from 2 to 50 (Fig 1). The farmers mostly reared desi birds with low egg and meat production. The number of birds owned varied according to the household size, wealth status and time of the year. This is the earlier observations by Kumeresan *et al.* (2008) [6]. The desi chicken breeds adopted in free-range backyard conditions for centuries contribute about 11 % of total egg production in

India [6]. Desi chicken was preferred by farmers of Puducherry as they believe that desi chicken have more disease resistance and more easy to rear by backyard poultry farming system. In our study the majority of farmers reared birds for dual purpose (64.44 %) followed by egg purpose (33.34 %) and meat purpose (2.22 %) (Fig.2). Food security can be assured by rearing improved variety of dual purpose birds like Giriraja, Vanaraja *etc* which produces eggs throughout the year. The study shows that the respondents prefer to have dual purpose birds which satisfy their daily demand of egg and occasional need of meat.

The farmers procured chicks from Puducherry (80 %) and Tamil Nadu (20 %). Also out of these 80 % respondents, 16.67 % farmers procured Giriraja chicks from Rajiv Gandhi Institute of Veterinary Education and Research which is being sold every thursday. The procurement of chicks inside Puducherry was high due to nearby local farmer markets where the small scale farmers can directly sell or buy products.



**Fig 2:** Farmers rearing birds for egg, meat and dual purposes

In the present study 68.88 % birds were fed with homemade feed, 24.44 % fed with commercial feed and 6.67 % used a combination of both. In our study majority of the farmers who were following backyard poultry system fed their birds with household wastes, residual farm produce and also allowed for free scavenging. This is in line with the study conducted by Rath *et al.* (2015) [10] where the farmers following backyard rearing allowed the birds for free scavenging, using household wastes. Out of the total respondent only 20 % farmers used feed supplements. This shows that majority of the respondents didn't practice balanced and organized feeding in rural areas of Puducherry.

The main benefits of rural poultry farmers were sale of eggs and birds. The farmers who sold their product as egg were 31.12 %, meat was 4.44 % and both egg & meat were found to be 64.44 %. In the study conducted by Bharti *et al.* (2019) [2], the sale of both egg and meat was higher (75.5 %) than in our study. Out of the total respondents, 51.11 % farmers reported that the sale of egg and meat were maximum during Sundays, *Aadi* month (normally falls during mid-July to mid-August) and festival period (Deepavali and Christmas). The remaining 48.89 % farmers told they have sustainable sale throughout the year. The farmers reported that they reared birds primarily for their own consumption and sale of products (egg or meat) was done only when the production was more or when the market was there. The farmers however were getting higher price for the meat and egg of desi birds. This shows the potential of poultry farming in Puducherry and generation of substantial income by improving the conditions of existing poultry farmers.

The major problem faced by the poultry farmers in

Puducherry were attack by predators like stray dogs (53.33 %), bandicoots (8.89 %) and snakes (4.44 %); theft issues (11.11 %) and other constraints (22.22 %) including complaints by neighbor, poisoning, unstable price, low productivity, lack of investment and land (Fig.3). The study conducted by Bharti *et al.* (2019) [2] revealed that attack by predators were found to be the major problem (92.5 %)

followed by neighbor complaints, lack of productivity and unstable price and the result revealed that predator problem attributed to the type of rearing in the rural areas. This can be overcome only by developing safe and cheaper poultry housing. Theft is another major issue to be contained in rural Puducherry to promote poultry farming.

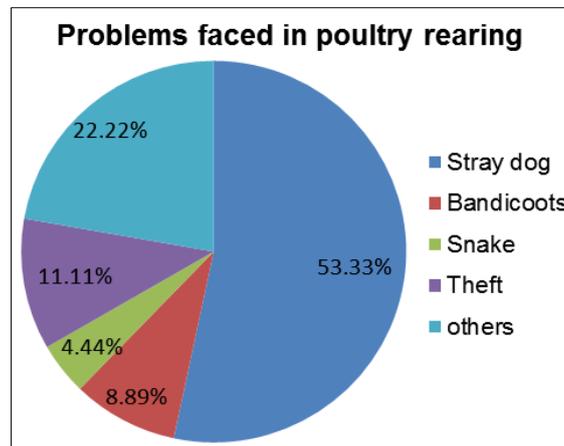


Fig 3: Problems faced in rearing of poultry in Puducherry

Another serious problem reported by the respondents was occurrence of diseases in the flock. The farmers reported that their flock mostly suffered from gastro-intestinal infections (60 %), respiratory diseases (6.67 %) and other diseases (28.89 %) including coccidiosis, heat stress, etc. whereas 4.44 per cent claimed they have no disease occurrence. The mortality reported by the farmers were mainly due to gastro-intestinal and respiratory diseases (46.67 %) and stray dog bite (15.56 %) and other infections like bumble foot, pox infection, infectious coryza, coccidiosis etc. (37.77 %) (Fig.4). In our study the Ranikhet disease was found to be the

major constraint pointing to the need for farmers to undertake the vaccination against Ranikhet. Whereas in the study undertaken by Dhakal *et al.* (2019) [11] in Nepal; Infectious Bursal Disease (IBD), New Castle disease, coccidiosis and pullorum were found to be major reasons for mortality. This study is in line with present findings as bacterial and viral diseases were found to be the major hindrances in poultry rearing during summer in Puducherry. The mortality occurrence differs from season to season and farmers reported it was high in summer (66.67 %) compared to rainy (26.66 %) and winter (6.67 %) seasons (Fig.5)

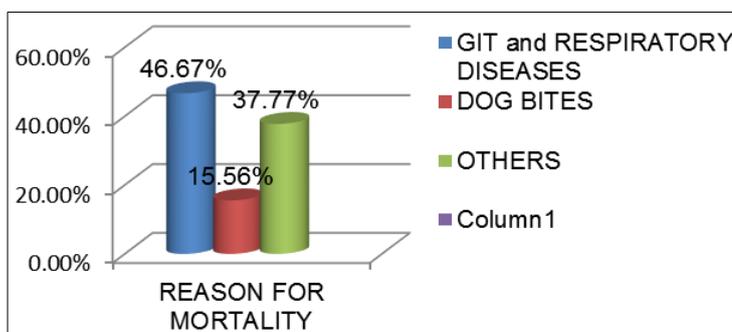


Fig 4: Reason for mortality

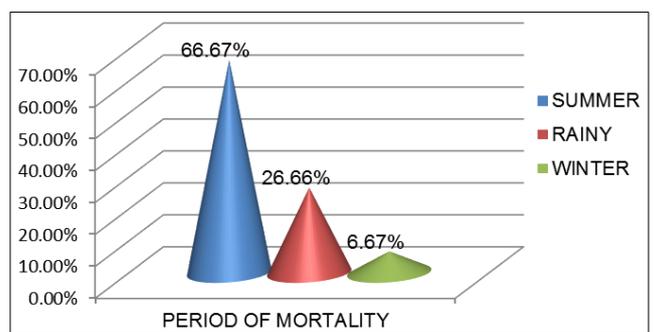
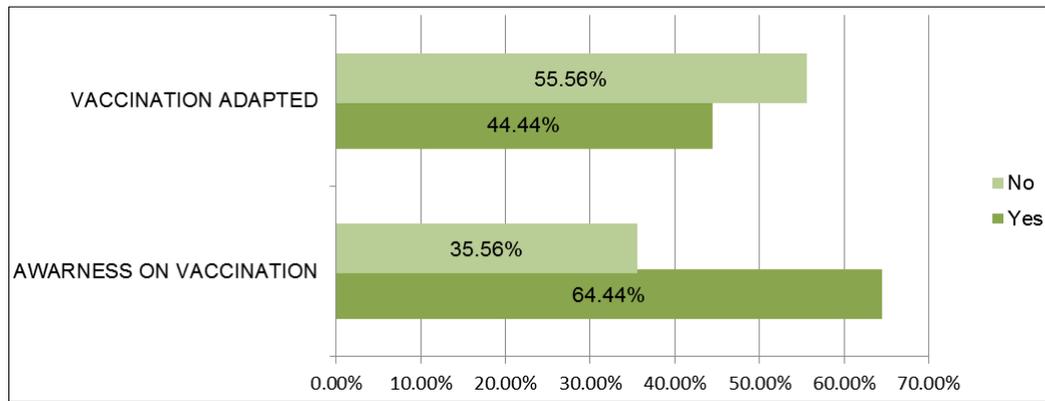


Fig 5: Mortality in relation to Season

The incidence of disease occurrence and mortality was mostly due to lack of awareness on vaccination and deworming leading to lack of protection against diseases. The awareness on vaccination among the respondents was 64.44 % (Fig.6) and this was only among the 91.1 % of the educated group. Among them only 44.44 % vaccinated their flock against Ranikhet disease using Lasota, F<sub>1</sub>, R<sub>2</sub>B strains due to previous experiences of outbreak of Ranikhet disease in those areas.

The remaining 55.56 % farmers reported that they did not vaccinate due to belief on vaccination with relation to organic poultry production, cost of the vaccine and non-availability of small doses of vaccines. Ahmed *et al.* (2019) [8] stated in their study that awareness on vaccination increased only after training session and 67.1 % farmers vaccinated their flock. This shows the importance of conducting training programs for the poultry farmers of Puducherry.



**Fig 6:** Awareness on vaccination and vaccination adapted by the farmers in Puducherry

As far as poultry waste disposal was concerned, 60 % of the farmers were converting it as manure for their own farm purpose whereas 40 % were dumping the waste in the public garbage bins or drainage. Earlier study by Moreki *et al.* (2013) <sup>[5]</sup> revealed that only 16% farmers used waste as manure which is lower than our findings. When it comes to disposal of dead birds, 75.56 per cent disposed by burial, 13.33 per cent dumped in garbage bins and 6.67 per cent had the practice of selling the dead birds. In a study by Moreki *et al.* (2013) <sup>[5]</sup> majority of farmers disposed the dead birds by burial and composting (61.5 %). The findings indicated the need for awareness on waste and dead bird disposal.

### Conclusion

Poultry farming has become a remunerative business and pre-eminence over all other livestock enterprises in the developing countries. Creating awareness about the Central Government Schemes on Rural Backyard Poultry Development for people below poverty line is a must to improve their subsidiary income. Marketing of egg and poultry meat is not fully organized in the rural sectors due to less production and lack of proper channel establishment. Seasonal variations in consumption and demand of eggs and meat pose greatest challenge to the stabilization of prices. Scope of marketing desi chicken eggs for higher cost shall be explored. Although the Veterinary College and Government are conducting training programmes for poultry farmers, as new entrepreneurs are venturing into poultry business, extension and training programs should be extended to cover all the farmers to give awareness on effective management practices, awareness on vaccination and deworming. Thereby the mortality and disease occurrence in poultry can be reduced along with proper waste and dead bird disposal. Thus their socio economic condition can be enhanced assuring food security in Puducherry.

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