

*Research Article*

## **Quail Farming and its prospect at Chattogram in Bangladesh**

**Islam, M.S.<sup>1</sup>, Akter, S. and Sultana, S.<sup>3\*</sup>**

<sup>1</sup>Department of Pathology and Parasitology, <sup>2</sup>Department of Sociology, Agrabad Mohila College, and <sup>3</sup>Department of Agricultural Economics and Social Science, Chattogram Veterinary and Animal Sciences University, Khulshi, Chattogram-4225, Bangladesh

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*\* Corresponding Author :*

Cell : +8801819859815

E-mail : [ssultanacvasu@yahoo.com](mailto:ssultanacvasu@yahoo.com)

### ABSTRACT

Quail farming is highly recognized and well established all over the world; however, it is not well known in Bangladesh. A cross-sectional study was conducted to understand the socio-economic status and the factors associated with quail farming such as perception of the farmers, requirements, challenges and prospects in Chattogram, Bangladesh. A total of 15 quail farms were surveyed in Hathazari and Rawzan upazilla, Chattogram for a period of 2 months from March to April 2018 with a pre-structured questionnaire. From the multivariate analysis, identified major variables those influencing in the profit gaining through quail farming are education, farming experience and financial support from non-government or government organization (NGO/GO). Education and profitability have been found to have exponential relations because the higher the education the better the benefit. Here found 60% farmer was secondary school certificate (SSC) passed, that means they are educated. Another significant variable was the experience of farmers, 60% of farmers started farming 2015-2018 with 9 years of farming experience with a net profit >150 thousand BDT and rest 40% 2010-2014 with 4 year experience with a net profit <150 thousand BDT. Notably, 73.3% of farmers did not get any support from NGO/GO and 26.7% farmers got help which also has a positive correlation with their profit. Within the study, the identified requirements for farmers are specific feed formulation 46.6%, training 26.7% and veterinary health care 26.7%. Farmers reported challenges in quail farming are poor marketing facilities (53.3%), higher chick mortality (33.3%) and unavailability of incubator (13.4%) to hatch eggs. Furthermore, about 60% of farmers made a general agreement with the possibility to expand this farming as agro-industry. To sum up, though low investment requirement, short generation gap per batch and early marketing are attracting the farmers to go for quail farming, and the challenges mentioned above highly restrict this enormous profitable field.

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## 1. INTRODUCTION

Adolescence, the period between 10-19 years of age, The economy of Bangladesh is mainly based on agriculture and livestock. The continual rise in human population in the developing countries like Bangladesh necessitates the need to find additional sources of animal protein like quail meat and egg (Owen and Dike, 2013) to fulfill the daily protein requirement for human suggested by Food and Agricultural Organization (FAO) (FAO, 1999). Quail farming has been considered as an alternative sector in the meat production of Bangladesh for alleviating the deficiency of animal protein as it possesses short generation interval.

Although, quail farming has been introduced in Bangladesh in 1990, it is still in primitive stage due to lack of proper awareness among the mass people. It has attained economic value as an commercially farmable species producing better meat with unique flavors, the low maintenance cost associated with its small body size (80-125g) coupled with its short generation interval (3-4 generations per year), resistance to diseases have added interest among the farmers to start quail farming. Japanese quail is the smallest avian species farmed for meat production (Vali, 2008). Now farmers with little investment are showing more and more interest in quail farming despite all the problems in marketing quail meat and eggs. Very few studies have been conducted on the quail farmers, but there is lack of information on the perception, socio-economic status, requirements, challenges and prospects of quail farming in Chattogram. To popularize the quail meat among the people and to encourage the farmers to rear quail, a thorough study is important. Considering these facts the present study was conducted to understand the perception and socio-economic status of the farmers as well as the requirements, challenges and prospects of quail farming in Chattogram.

## 2. MATERIALS AND METHODS

### Study area

The study was carried out for a period of 2 months from 1<sup>st</sup> March, 2018 to 30<sup>th</sup> April, 2018. The data were collected from fifteen (N=15) randomly selected quail farms flock size ~400 in Hathazari and Rawzan upazilla under Chattogram district. Farm level epidemiological data were recorded using a structured questionnaire through face-to-face interview and by observation.

### Data collection

Data were collected by own observation and interviewing the owner. Moreover, numerous data were collected by contacting owner over the phone. Following Data were collected during the study through a questionnaire comprising of the following queries: family size, agricultural land size, religion, education, marital status, annual income, experience as a quail farmer, main constraints in quail production, requirements for successful quail production, challenges for quail production, and prospects of quail farming status in Chattogram.

### Data analysis

Data related to the perception, socio-economic status of quail farmers, requirements, challenges and prospects quail farming according to the quail farmer were managed through Microsoft Excel 2013. As required, data were exported to STATA-IC-13 (Stata Corp, 4905, Lakeway Drive, College Station, Texas 77845, USA) for executing statistical analysis. Finally we performed descriptive statistics including frequency, percentage and 95% CI.

## 3. RESULTS AND DISCUSSIONS

### Descriptive statistics of the collected data

Among 15 farms, 53.3% of the farmers land size 1-3 acres while 33.3% had 4-5 acres and 13.4% had 6-8 acres. The result also shows that 60% of the farmers had Secondary School Certificate (SSC), 26.7% were school leavers (class 8) while 26.7% had Higher Secondary Certificate (HSC) education (Table 1).

The factors associated with quail farming are: 60% of the farmers had started farming in 2015-2018 while 40% farmers started in 2010-2014. Almost 60% of the farmers earned profit in the last year was more than 150 thousand BDT and 73.3% farmers didn't get any support from non-government organization (NGO) or government organization (GO). The major requirements reflected in this study were specific feed formulation (46.6%), lack of training (26.7%) and veterinary health care (26.7%). The major challenges shown in this study were poor marketing (53.3%), higher chick mortality (33.3%) and necessity of incubator to hatch eggs (13.4%) (Table 2).

The study shows that 60% of the farmers had Secondary School Certificate (SSC), 26.7% were school leavers (class 8) while 26.7% had Higher Secondary Certificate (HSC) education.

Education, a measure of human development index, is a basic requirement of the welfare of the human being. It is a reflection of quality of labor and may also be responsible for the risk taken ability of the farmers by the adoption of quail production which is still new in the study area. Farming experience correlates with the acquisition of good skills in the adoption of innovation in the field of poultry production. A total of 60% farmers had started farming in 2015-2018 while 40% farmers started in 2010-2014. Almost 60% of the farmer earned profit was more than 150 thousand BDT and 73.3% farmers don't get any support from NGO or GO in last year.

Most of the farm owner have lack of knowledge and training on farm management, that might hindered the productivity of the farming at optimum level. As a results the growth rate of quail was not found at optimum levels. Lack of proper knowledge of feeding, space requirement, lighting etc. plays a negative role in getting expected profit at the end. Besides, most of the farmers usually do not have access to take adequate veterinary health care services caused huge economic loss from mortality of chicks as well as adult birds. Therefore, they need veterinary health care for profitable farming.

The fact is quail species with good taste, nutritious egg is unknown to a large number of people (Balarabe and Charles, 2015). The market range of quail is very limited comparing to chicken. Chicken products can be marketed all over the Bangladesh but in case of quail it is very much limited. Quail egg has some popularity in the several regions, but meat is not yet popularized in the Bangladesh. A previous study shows farmers are not interested to rear quail due to narrow market range of quail farming (Siddique *et al.* 1996), however, in the present study shows the farmers are interested to quail farming that could be due to the study places are in around Chattogram City, where live different kinds of people, who might be little interestd to have meat with good food value from different species specially quail meat.

Most of the farmers mentioned that they do not get adequate veterinary health care. As a result they face a lot economic loss from mortality of chicks as well as adult birds. Therefore, they need veterinary health care for profitable farming.

Quails do not hatch their own eggs easily. And those who plan for producing chick at their own farm for more profit are compelled to buy incubator. Incubators are costly and farmers find difficulty to buy.

Almost 80% of the quail farmers agreed with the scope of expanding this as quail agro industry. Due to geological and environmental conditions, Chattogram is very good place, where quail farming is suitable for successful program (Paul and Sarker, 1992). Quail farming is five times better than chicken and turkey rearing (Minvielle, 2004). Many people are interested to rear quail on commercial basis due to lower initial investment, smaller sized bird, can raise within small place and low risk rather than commercial broiler farmin gand the demand of commercial quail production is increasing day by day in Bangladesh (Islam *et al.*, 2014). Quail farming has enormous potentiality and could be an alternative to chicken farming particularly in providing gainful employment, supplementary income and as a valuable source of meat and egg (Nasar *et al.*, 2016). Furthermore, quail are less susceptible to common diseases like salmonellosis, coccidiosis, infectious coryza, enteric diarrhea, and pneumonia etc., as compared to chicken (Nasar *et al.*, 2016). The limitations of this study is that the study period was short and study area were restricted to a particular district, for these reasons the present findings may not reflect the whole country. Some of the farmers were not cooperative to provide information.

#### 4. CONCLUSION

Recognizing the enormous potentiality of quail as an alternative to chickens in providing gainful employment, supplementary income and as a valuable source of meat and egg, quail farming should be encouraged and promoted in Chattogram as well as Bangladesh. Considering the perception, socio-economic status of quail farmers and requirements, challenges and prospects of quail farming as found in this study, quail farming can easily be a good means to alleviate poverty problem in some extent. The government's initiative is

**Table 1:** Frequency distribution of socio-economic status of the quail farmers

| Variable              | Category  | Frequency | (%)  | 95% CI    |
|-----------------------|-----------|-----------|------|-----------|
| Family Size           | 1-5       | 7         | 46.7 | 21.3-73.4 |
|                       | 6-10      | 8         | 53.3 | 27.6-78.7 |
| Land size (acres)     | 1-3       | 8         | 53.3 | 27.6-78.7 |
|                       | 4-5       | 5         | 33.3 | 11.8-61.6 |
|                       | 6-8       | 2         | 13.4 | 1.7-40.5  |
| Religion              | Muslim    | 9         | 60   | 32.3-83.7 |
|                       | Hindu     | 6         | 40   | 16.3-67.7 |
| Education             | Class 8   | 4         | 26.7 | 7.8-55.1  |
|                       | SSC       | 9         | 60.0 | 32.3-83.7 |
|                       | HSC       | 2         | 13.3 | 1.7-40.5  |
| Marital Status        | Married   | 12        | 80   | 51.9-95.7 |
|                       | Unmarried | 3         | 20   | 4.3-48.1  |
| Children go to school | Yes       | 12        | 80   | 51.9-95.7 |
|                       | No        | 3         | 20   | 4.3-48.1  |

**Table 2:** Factors associated with quail farming

| Variable  | Category                  | Frequency | (%)  | 95% CI    |
|---|---------------------------|-----------|------|-----------|
| Farming experience<br>(in year)                   | 9                         | 6         | 40   | 16.3-67.7 |
|   | 4                         | 9         | 60   | 32.3-83.7 |
| Approximate<br>annual income<br>(in thousand BDT) | 100-250                   | 6         | 40.0 | 16.3-67.7 |
|   | 260-300                   | 3         | 20.0 | 4.3-48.1  |
|   | 310-350                   | 6         | 40.0 | 16.3-67.7 |
| Support from<br>NGO or GO                         | Yes                       | 4         | 26.7 | 7.8-55.1  |
|   | No                        | 11        | 73.3 | 44.9-92.2 |
| Profit in last year<br>(in thousand BDT)          | 100-150                   | 6         | 40.0 | 16.3-67.7 |
|   | 160-200                   | 9         | 60.0 | 32.3-83.7 |
| Requirements                                      | Training                  | 4         | 26.7 | 7.8-55.1  |
|   | Veterinary health care    | 4         | 26.7 | 7.8-55.1  |
|   | Specific feed formulation | 7         | 46.6 | 21.3-73.4 |
| Challenges  | Poor marketing            | 8         | 53.3 | 27.6-78.2 |
|   | Higher chick mortality    | 5         | 33.3 | 11.8-61.6 |
|   | Necessity of incubator    | 2         | 13.4 | 1.7-40.5  |
| Scopes for<br>expanding                           | Yes                       | 9         | 60.0 | 32.3-83.7 |
|   | No                        | 6         | 40.0 | 16.3-67.7 |

necessary to adopt the strategies to make quail farming economically and commercially viable in near future. Further study is required to know the existing quail farming system with large sample size and contributions of quails' meat and egg as protein sources for human consumption.

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