Research article

**Ecology Journal**

*ISSN (Print): 2957-4471, ISSN (Online): 2957-448X, Website: https://journal.esbangladesh.org*
*Ecol. J. (2025) 7 (2) : 125-137*

# Current status, reproductive performance, and health management of turkey (*Meleagris gallopavo*) breeds under farming systems in Bangladesh

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**Received:** 28 July 2025, revised: 04 August 2025, accepted: 07 August 2025, DOI: https: //doi.org/10.59619/ej.7.2.6

## Abstract

This study was conducted to investigate the present status, reproductive performance, and health management of commercial turkey farms in Bangladesh. Thirty-three farmers were interviewed with a structured questionnaire. Males operated 96.97% of farms, of them 48.48 % farmers were between the age of 31 to 40 and 48.48% hold a bachelor's degree. Turkey raising was secondary to other jobs, 51.51% farmers were in business, 39.39% in paid service, and 6.06% were students. No farmers had previous experience in turkey farming and only 3.04 % read relevant literature. American Black (33.33%) and White Holland (24.25%) were the leading breeds. Mixed enterprises combining meat, egg, and poult production dominated (42.42%), followed by hatcheries (27.27%), meat farms (18.18%), and layers (12.12%). Daily production averaged 32.27±0.96 eggs/farms weighing 63.94±0.93 g. Birds were marketed at the age of 5.75±0.27 months, with mean undressed and dressed weights of 8.77±0.40 kg and 6.23±0.29 kg, respectively. Among the hatcheries, 70.58% achieved fertility rates and 58.82% achieved hatchability rates within the range of 81-90%. Although no farm used commercial turkey rations, 90.91% prepared their own mixed diets; pellets were used by only 3.04%. All farmers routinely added medications to feed/water and vaccinated birds. Diseases were prevalent in every farm, headed by turkey pox (51.51%), Newcastle disease (21.21%), mycoplasmosis (15.15%), and fowl cholera (12.13%). Economically, 81.81% reported no profit and 78.78% planned to quit due to high feed prices, poor technical support, weak marketing, and volatile prices. Targeted government interventions such as farmer training, provision of quality feed, and development of stable market channels could transform turkey farming into a sustainable source of income for unemployed youth and marginalized women of Bangladesh.

**Keywords:** Turkey, status, reproduction, health, disease, economics

## Introduction

Poultry constitutes a major portion of the animal protein source and poultry population in Bangladesh is estimated to 396.38 million, comprising 327.77 million chickens, 68.26 million ducks (MoFL 2024) and 1.44 million turkeys (*Meleagris gallopavo*) (BBS 2019). Among poultry species, turkey (largest gallinaceous bird belongs to Meleagridae family) production, is regarded as one of the most significant and remarkably profitable agricultural industries due to the rising demand on a worldwide scale (Yakubu *et al*. 2013). Turkey plays a significant role in supplying animal protein in Western countries, particularly in Europe and America (Ahmed *et al*. 2009). They are adaptable to a wide range of climatic conditions (Ogundipe and Dafwang 1980). Turkeys are mainly raised for meat, and their meat is the leanest among poultry species. The farming system is similar to other poultry, namely chickens, ducks, and quails. Turkey is more resistant to disease compared to other poultry. It has also been reported that mortality rate of turkey is very low compared to other poultry (Sampath 2012). Turkey is an excellent insect forager, and most crops that are troubled by insect populations, including vegetables, are candidates for insect control by turkeys (Grimes *et al*. 2007). Turkeys thrive better under arid conditions, tolerate heat better, range farther, and produce higher-quality meat (Yakubu *et al*. 2013).

However, the introduction of turkey in Bangladesh is very recent, and there is no specific information on how, when, and from where turkey production started in this country but a farmer stated that he started his farm in 2014 with only 22 turkey birds brought from India (Siddiky 2017).

The birds presently available in Bangladesh are mostly heritage types, and they might have entered Bangladesh from neighboring countries. Until today, farmers have been raising turkeys as ornamental birds. As the species is very new in Bangladesh, farmers are not aware of various aspects of rearing, such as feeding, housing, disease prevention and management, standard growth patterns, feed efficiency, incubation of hatching eggs, etc. (Islam *et al*. 2023). However, its popularity is gradually increasing because of the gamey flavor of its meat with lower fat content (Asaduzzaman *et al*. 2017). Turkey farming has gained the attention of poultry farmers, particularly entrepreneurs in Bangladesh, because they grow faster than chickens, and the farming for meat is most popular than egg production in the country (Siddiky 2017). Turkey produces good-quality lean meat, containing 6.6% fat per 100 grams of meat (Wilkanowska 2017). Although the number of turkey farms is increasing day by day in the country, there is still a lack of knowledge and skills in husbandry, reproduction, and health management of these highly valued birds. As raising turkeys is somewhat different from established poultry species, farmers are currently facing various problems, including poor fertility and hatchability of eggs, poor growth of chicks, and, above all, reproduction and health-related issues. This ultimately results in financial losses in this new enterprise.

Although commercial turkey farming has immense potential as a new venture in Bangladesh, there are limited studies regarding rearing, breeds and varieties, reproduction, as well as health management. Previously, we studied the status, breeds and varieties, reproduction, problems, and prospects of Japanese quail (Rahman *et al*. 2016) and pigeon (Rahman and Das 2018) farming in Bangladesh. Therefore, the present study set out to: (i) gather comprehensive data on distribution and status of turkey farms in Bangladesh, (ii) collect detailed information on the breeds and varieties of turkey raised in various farms with special attention to their reproductive potential and (iii) investigate the prevalence of diseases and biosecurity status in different turkey farms in the country.

## Materials and methods

**Study period and locations:** The study was conducted during July 2021 to June 2022. Locations of different turkey farms were picked based on their suitability for farming. The chosen regions were Dhaka, Gazipur, Narayanganj, Narshingdi, Manikganj, Mymensingh, Tangail, Netrokona, Bogura, Rangpur, Sirajganj, Brahmanbaria, Chandpur and Cox's Bazar districts of Bangladesh (Figure 1, highlighted in red).

**Data collection:** A suitable sampling method was used, and a total of 33 turkey farmers were surveyed. The percentage of farms surveyed in each district was as follows: Gazipur (21%), Dhaka (25%), Tangail (6%), Netrokona (3%), Mymensingh (6%), Narayanganj (3%), Manikganj (3%), Narsingdi (3%), Brahmanbaria (3%), Chandpur (3%), Rangpur (9%), Bogura (6%), Sirajganj (3%), and Cox's Bazar (6%) (Figure 2).

A set of questionnaires was prepared with necessary adjustments. Pre-testing was done to make sure the questions were easy to understand and answer. Data were collected through face-to-face interviews during farm visits. Before starting the interview, the purpose of the study was explained to each respondent. The questions were asked in simple language, and the answers were written down on the questionnaire form.

**Statistical analysis:** The data generated from this experiment were entered in Microsoft Excel worksheet, organize and process for further analyses. Descriptive statistics were performed to calculate mean, standard error and percentages. Analyses was performed with the help of Statistical Packages for Social Sciences, version 22.0 for windows (SPSS, Inc., Chicago, IL, USA).

## Results and discussion

The profiles of 33 turkey farmers from Bangladesh are summarized in Table 1. Most were young-to-middle-aged: 42.4 % were 21–30 years and 48.5 % were 31–40 years old. Similar age distributions were reported by Asaduzzaman *et al.* (2017) and Rashid *et al.* (2020), confirming that turkey rearing in Bangladesh is largely a first-generation, youth-driven enterprise. The sector

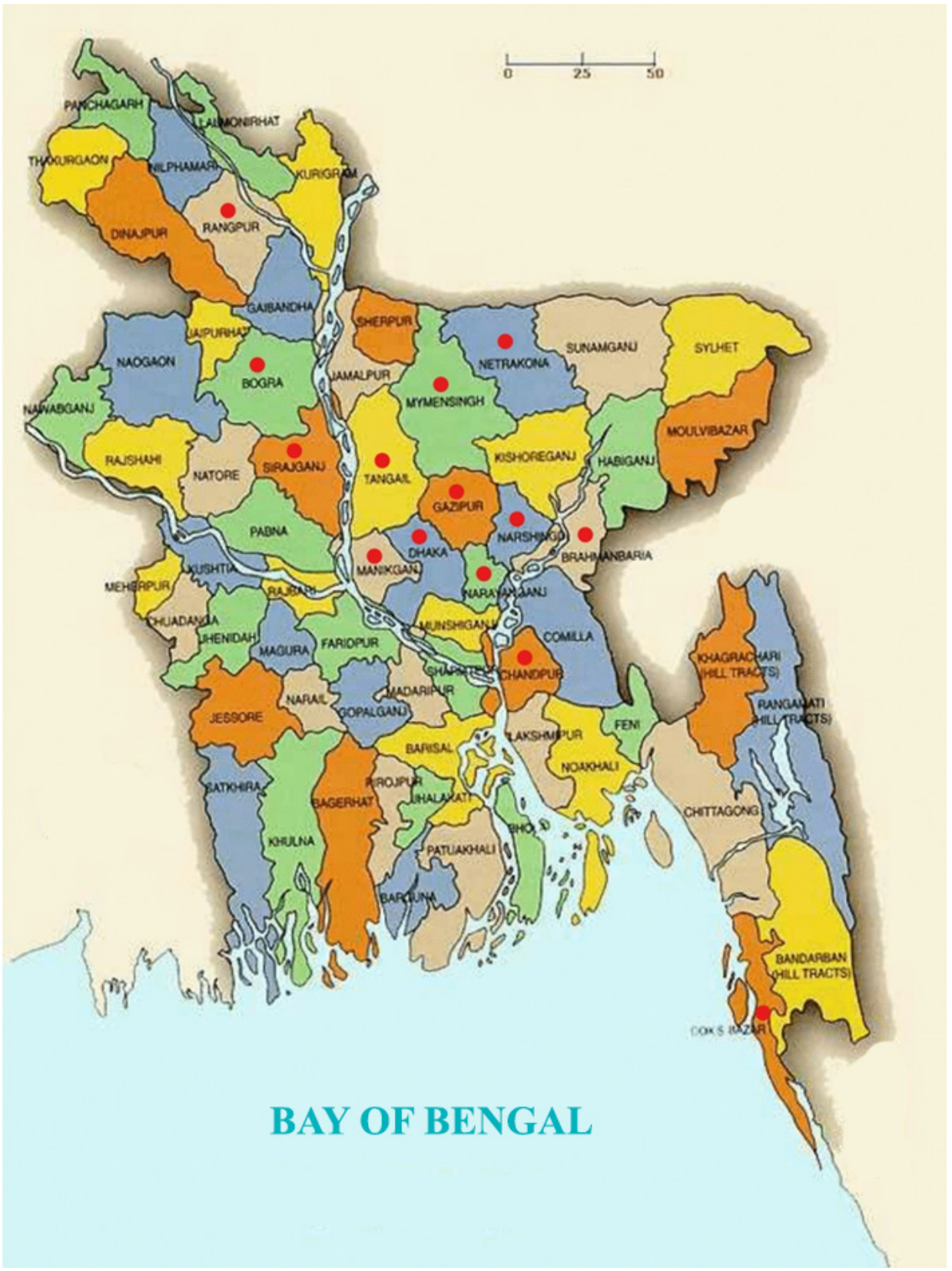



**Figure 1. Distribution of the study areas (red dot mark) in Bangladesh.**

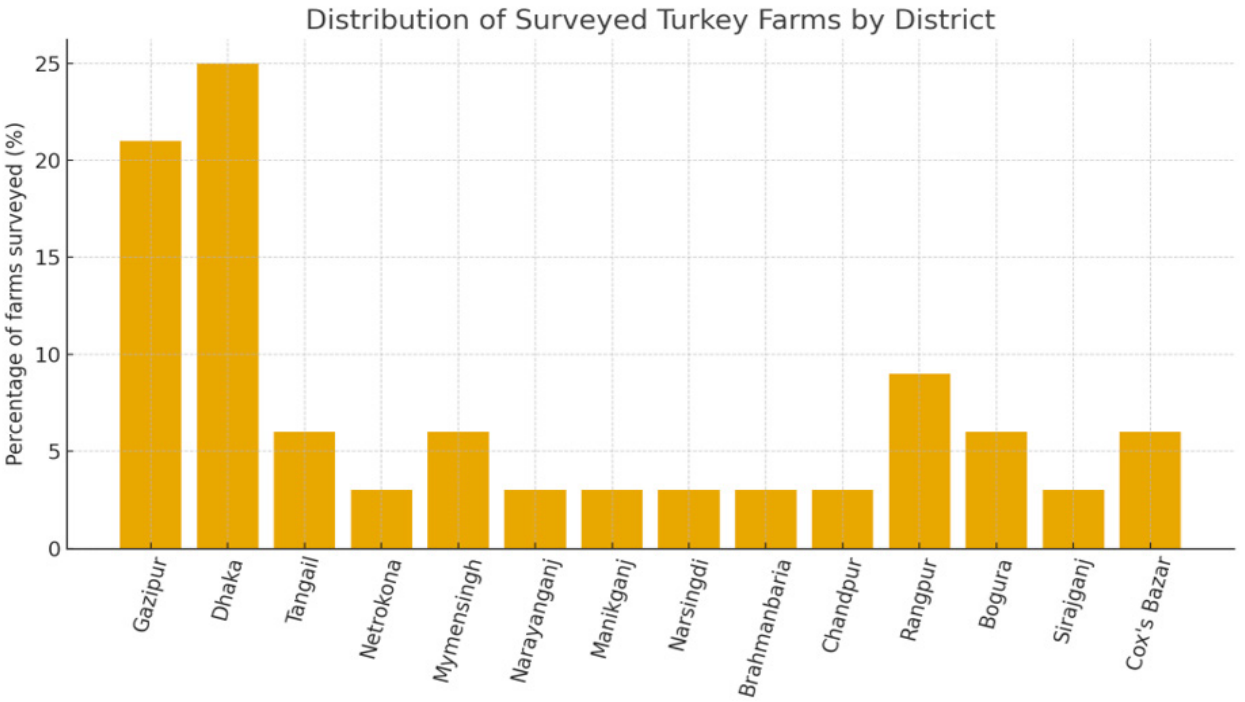



**Figure 2. Percentage of turkey farms in the study areas.**

remains overwhelmingly male: 96.96% of farms in our survey were owned by men, close to the 87% reported by Rashid *et al.* (2020). Turkey raising is rarely a primary livelihood: 51.5% of owners listed businessmen and 39.4% salaried employment as their main occupation, paralleling the findings of Rashid *et al.* (2020) that 56% farmers were primarily in business and 88.6 % treated turkeys as a secondary activity. None of our respondents had previous work experience on a turkey farm, and only one had read any literature on the subject. Educational attainment was high: 48.5% held bachelor's degrees and 24.2% master's degrees, with only 3.0% below secondary level—comparable to the ≥ secondary-schooling rates (80–90%) reported by Rashid *et al.* (2020) and Ali *et al.* (2019). Most farmers were married (90.9%). Production goals were diverse: 45.5% aimed for mixed output (meat, eggs and poults), 27.3% focused on chick/poult sales and 15.2% on meat. Social media was the main source of motivation (54.6%), followed by business prospects (21.2%). Notably, 84.8% said they actively encouraged others to start turkey farms, signaling peer-driven growth of the sector despite limited formal training or prior experience.

Table 2 shows that most turkey farms (42.43%) in the study areas were mixed enterprises combining meat, egg and hatchery production. Hatchery-focused farms made up 27.27%, followed by meat type farms (18.18%) and layer farms (12.12%). Hussain *et al.* (2024) reported 57% of farmers raising turkeys chiefly for meat, 39% for dual meat-and-egg output and just 4% for eggs/poults alone, again confirming that producers are exploring diverse models to manage risk and optimize income. The largest cohort of farms (18.18%) was established in 2016, indicating that turkey production began to gain traction then, with steady growth through 2021. Turkey production remains resolutely small-scale: 42.4 % of the farms in our survey kept fewer than 50 birds and only one exceeded 1,000. Hussain *et al.* (2024) noted 68% of flocks at ≤ 50 birds, while Rashid *et al.* (2020) found 60% of growers preferred small units as a lower-risk strategy. Together, these data confirm that roughly two-thirds of Bangladesh's turkey farmers operate well below commercial scale, highlighting the need for cooperative feed purchasing and collective marketing to improve profitability. All farms were formally registered (100%),

**Table 1. Personal status of turkey farmers (n=33) in selected areas of Bangladesh**

| Criteria | Groups | No (%) |
|---|---|---|
| Age of the farmer | <20 year | 0 (0.0) |
| | 21-30 year | 14 (42.42) |
| | 31-40 year | 16 (48.48) |
| | 41-50 year | 2 (6.06) |
| | 51 year | 1 (3.04) |
| Sex | Male | 32 (96.96) |
| | Female | 1 (3.04) |
| Primary occupation of the farmer | Business | 17 (51.51) |
| | Service | 13 (39.39) |
| | Studentship | 2 (6.06) |
| | Turkey Farming | 0 (0.0) |
| | Others | 1 (3.04) |
| Alternative occupation of the farmer | Business | 0 (0.0) |
| | Service | 0 (0.0) |
| | Studentship | 0 (0.0) |
| | Turkey Farming | 33 (100.0) |
| | Others | 0 (0.0) |
| Worked in any turkey farm earlier | Yes | 0 (0.0) |
| | No | 33 (100.0) |
| Read any books | Yes | 1 (3.04) |
| | No | 32 (96.06) |
| Educational background | Below SSC | 0 (0.0) |
| | SSC | 1 (3.04) |
| | HSC | 8 (24.24) |
| | Bachelors | 16 (48.48) |
| | Masters | 8 (24.24) |
| Marital status | Married | 30 (90.90) |
| | Unmarried | 3 (9.10) |
| Purpose of farming | Ornamental purpose | 0 (0.0) |
| | Egg production | 4 (12.12 ) |
| | Meat production | 5 (15.15) |
| | Chick/Poult production | 9 (27.27) |
| | Mixed production | 15 (45.46) |
| Why interested in turkey farming | Business purpose | 7 (21.21) |
| | Inspired by neighbors | 3 (9.09) |
| | Inspired by friends | 5 (15.15) |
| | Inspired by Social media | 18 (54.56) |
| | Others | 0 (0.0) |
| Role in spreading turkey farming | Provide training | 2 (6.06) |
| | Motivate to establish new farms | 28 (84.84) |
| | Provide technical support | 2 (6.06) |
| | Provide financial support | 0 (0.0) |
| | Consultancy | 1 (3.04) |
| | Others | 0 (0.0) |

**Table 2. Status of turkey farms (n=33) in selected areas of Bangladesh**

| Sl. No. | Criteria | Groups | No (%) |
|---|---|---|---|
| 01 | Farm type | Layer | 4 (12.12) |
| | | Broiler/meat | 6 (18.18) |
| | | Hatchery | 9 (27.27) |
| | | Mixed | 14 (42.43) |
| 02 | Date of establishment | 2014 | 3 (9.09) |
| | | 2015 | 4 (12.12) |
| | | 2016 | 6 (18.18) |
| | | 2017 | 5 (15.15) |
| | | 2018 | 5 (15.15) |
| | | 2019 | 1 (3.04) |
| | | 2020 | 5 (15.15) |
| | | 2021 | 4 (12.12) |
| 03 | Farm size | <50 | 14 (42.42) |
| | | 51-100 | 9 (27.27) |
| | | 101-250 | 5 (15.15) |
| | | 251-500 | 2 (6.06) |
| | | 501-1,000 | 2 (6.06) |
| | | 1,000 | 1 (3.04) |
| 04 | Registration | Registered | 33 (100.0) |
| | | Unregistered | 0 (0.0) |
| 05 | Whether rear with other poultry | Yes | 5 (15.16) |
| | | No | 28 (84.84) |
| 06 | Name of the breed | Beltsville Small White | 1 (3.03) |
| | | Royal Palm | 6 (18.18) |
| | | American Black | 11 (33.33) |
| | | White Holland | 8 (24.25) |
| | | Red Bourbon | 4 (12.12) |
| | | Broad Breasted Bronze | 3 (9.09) |
| 07 | Future plan | Want to expand the farm | 7 (21.22) |
| | | Want to quit from farming | 26 (78.78) |

and most farmers (84.84%) kept turkeys separate from other poultry, probably because of differing husbandry needs. Breed preferences were consistent across studies. American Black and White Holland accounted for 57.6% of the birds in our sample (33.3% and 24.3%, respectively); Rashid *et al.* (2020) reported a similar dominance, with these two breeds comprising 68% of flocks. Their popularity reflects proven adaptability to Bangladeshi conditions, while heritage lines such as Royal Palm, Red Bourbon, Broad-Breasted Bronze and Beltsville Small White persist only in small numbers (Figure 3). Despite rising interest, 78.78% of farmers planned to exit turkey farming because of high costs, limited technical support and weak markets, and only 21.22% intended to expand. Targeted interventions—training, market access and advisory services—are therefore essential to make turkey farming viable and sustainable in Bangladesh.

Table 3 presents the results from 18 layer-type turkey

flocks. Pullets averaged 4.44±0.21 kg and began laying at 5.56±0.14 months—relatively early maturity. Birds were kept for about 13.8 months and culled at 15.1±0.90 months. Each farm produced 32.27±0.96 eggs per day, equivalent to roughly 11.8 hundred eggs per year per farm, with a mean egg weight of 63.94±0.93 g. These figures show that even small- to medium-scale units can deliver a steady yearly output of reasonably sized eggs. Previous studies found that the eggs were heavier and matured later. Asaduzzaman *et al.* (2017) recorded puberty at 7.22±0.06 months, 69.5±0.8 eggs per hen per year, and a 66.1±0.6 g egg weight. Rashid *et al.* (2020) found first lay at 6.61 months of age and 139 eggs per hen per year. Famous *et al.* (2019) noted 80–100 eggs per hen per year (mean ≈ 90), while Ali *et al.* (2019) reported a higher average egg mass of 82.0 g. Compared with those reports, our flocks matured 1–2 months earlier but produced slightly lighter eggs, differences likely linked to breed, nutrition, or overall farm management.

Table 4 shows that almost every hatchery (94.11 %) purchased its parent stock from other farms, yet 88.23% collected most hatching eggs from their own flocks and produced eggs year-round (94%). Nearly half (47.05%) of the farms handled fewer than 50 hatching eggs per day, and 94.11% relied on locally built incubators—typically two units per farm, with the most common capacity of 501–1,000 eggs (29.41%). Despite these modest facilities, performance was strong: 58.8% of hatcheries achieved 81–90% hatchability and 58% recorded the same high fertility band, well above the 63% average cited by Ali *et al.* (2019), 62% by Hussain *et al.* (2024) and 74% by




**Figure 3. Different turkey breeds in the study farms. A) American Black, B) Red Bourbon, C) White Holland and, D) Broad-breasted Bronze.**

**Table 3. Patterns of layer type turkey farming (n=18) in the study areas**

| Criteria | Mean±Standard Error |
|---|---|
| Pullet weight (kg) | 4.44±0.21 |
| Age at first lay (month) | 5.56±0.14 |
| Rearing period (month) | 13.83±0.91 |
| Culling age (month) | 15.11±0.90 |
| Egg production/day | 32.27±0.96 |
| Average egg weight (g) | 63.94±0.93 |

**Table 4. Patterns of turkey hatcheries (n=17) in the study areas**

| Criteria | Groups | No (%) |
|---|---|---|
| Collection of parent stock | Own farm | 1 (5.88) |
| | Contact farms | 0 (0.0) |
| | Other farms | 16 (94.11) |
| Hatching egg produced | Own farm | 15 (88.23) |
| | Contact farms | 0 (0.0) |
| | Others farms | 2 (11.76) |
| Hatching egg production | Year round | 16 (94.11) |
| | Seasonal | 1 (5.88) |
| Male female ratio | 1:2 | 0 (0.0) |
| | 1:3 | 0 (0.0) |
| | 1:4 | 17 (100.0) |
| Hatching egg production/day | <50 | 8 (47.05) |
| | 51-100 | 4 (23.52) |
| | 101-250 | 0 (0.0) |
| | 251-500 | 2 (11.76) |
| | 501-1000 | 3 (17.64) |
| | ≥1001 | 0 (0.0) |
| Incubator origin | Local | 16 (94.11) |
| | Imported | 1 (5.88) |
| Number of incubator(s) | 1 | 2 (11.76) |
| | 2 | 6 (35.29) |
| | 3 | 2 (11.76) |
| | 4 | 1 (5.88) |
| | 5 | 4 (23.52) |
| Incubator capacity | 100-500 | 3 (17.64) |
| | 501-1000 | 5 (29.41) |
| | 1001-1500 | 0 (0.0) |
| | 1501-2000 | 4 (23.52) |
| | 2001-3000 | 3 (17.64) |
| Hatching rate | 60-70% | 2 (11.76) |
| | 71-80% | 5 (29.41) |
| | 81-90% | 10 (58.82) |
| Fertility rate | 60-70% | 2 (11.76) |
| | 71-80% | 3 (17.64) |
| | 81-90% | 12 (70.58) |
| Reproduction system | Natural mating | 17 (100.0) |
| | AI | 0 (0.0) |

Rashid *et al.* (2020), and far higher than 52.9 % reported from Tamil Nadu by Anandh *et al.* (2012). All farmers used natural mating with a strict 1:4 tom-to-hen ratio—tighter than the 1:5 noted by Sultana *et al.* (2021) and close to the 1:4.6 recorded in Sudan (Yassin *et al*. 2013). No one employed artificial insemination, mirroring earlier Bangladeshi studies. These results show that, even with small, home-made incubators and limited daily egg throughput, careful stock selection, continuous egg collection and an optimal male-to-female ratio can yield hatchability figures that surpass those of larger, better-equipped operations reported elsewhere.

Table 5 shows that meat-type turkeys in the present study were sold at 5.75±0.27 months of age, averaging 8.77±0.40 kg live (undressed) and 6.23±0.29 kg dressed weight. Hussain *et al.* (2024) reported a slightly longer marketing age of 6.8 months, with mean live weights of 6.12 kg for males and 3.04 kg for females. According to Famous *et al.* (2019) ideal market weights of 7.26 kg for toms and 5.53 kg for hens at 16 weeks (≈ 4 months). Compared with these references, our flocks reached market size sooner than those of Hussain *et al.* (2024) but produced heavier birds. They were, however, marketed later and at higher weights than the optimum quoted by Famous *et al.* (2019), indicating potential to shorten the growing period through improved feeding and management while still meeting preferred carcass weights.

Table 6 shows that most turkey holdings occupied 200–300 sq ft and were run on low-cost systems. Free-range housing dominated (69.7%), with the remainder classed as semi-intensive (30.3%). This contrasts with the intensive housing favored by 64.9% of growers in Asaduzzaman *et al.* (2017) but is closer to the semi-scavenging model (76%) reported by Hussain *et al.* (2024). More than half of the sheds (57.6%) were simple brick-and-tin structures covered with netting; 84.9% of flocks were floor-reared and 69.7% mixed age groups in the same house, reflecting space constraints. Feed practices were equally informal: 90.9% of farmers compounded their own rations from mixed ingredients (used by 96.96%), whereas only 3.04% relied solely on pelleted diets. Because dedicated turkey feed is unavailable locally—and protein demand is high (≈ 28% CP, Sultana *et al.* 2021, Rashid *et al.* 2020)—growers often substitute commercial layer (44%) or broiler (26%) formulas, as noted by Hussain *et al.* (2024). Overall, the evidence points to a sector that still depends on traditional, small-scale and cost-saving management methods.

Table 7 summarizes the disease management practices observed in commercial turkey farms. All the farms (100%) reported experiencing disease outbreaks, although most of the farms (87.87%) mentioned that these occurred less frequently. Every farm used drugs or additives in feed or water and followed a vaccination schedule, indicating a proactive attitude toward disease prevention. Similarly, Hussain *et al.* (2024) found that most turkey farmers (86%) regularly vaccinated their birds and reported fewer disease cases compared to other poultry species. According to Sultana *et al.* (2021), turkeys also show greater genetic resistance to certain diseases like Marek's and infectious bronchitis. In the current study, the most common diseases were turkey pox (51.51%), followed by Newcastle disease (21.21%), mycoplasmosis (15.15%), and fowl cholera (12.13%) (Figure 4). These findings are consistent with those of Jahan (2018), who found that 36.96% of farmers encountered diseases such as Newcastle disease, fowl cholera, fowl pox, and mycoplasmosis. Rashid *et al.* (2020) reported that 28% of farmers experienced turkey deaths due to cold, fowl pox, Newcastle disease, avian influenza, or unknown causes. While none of the farms reported endemic diseases, only 30.30% of farmers regularly consulted veterinarians, though 69.70% sought help occasionally. When diseases occurred, about 50% of farmers contacted local trained personnel, poultry experts, Upazila Livestock Officers, or company professionals. Some even attempted self-treatment, as noted by Hussain *et al.* (2024). Previous studies, such as Rashid *et al.* (2020), reported that most farmers relied on the Upazila Livestock Hospital (69.47%), with fewer turning to private clinics (4.21%), veterinary surgeons (2.11%), or other sources. Biosecurity was moderately maintained—93.94% of farmers followed some level of biosecurity, but only 6.06% enforced it strictly. Overall, the findings of the present survey indicated that while turkey farmers are

**Table 5. Patterns of broiler/meat type turkey farming (n=18) in study areas**

| Criteria | Mean±Standard Error |
|---|---|
| Marketing age (month) | 5.75±0.27 |
| Undressed weight (kg) | 8.77±0.40 |
| Dressed weight (kg) | 6.23±0.29 |

**Table 6. Turkey farm (n=33) management patterns in Bangladesh**

| Criteria | Groups | No (%) |
|---|---|---|
| Total area | 100-200 square feet | 8 (24.25) |
| | 200-300 square feet | 15 (45.45) |
| | 300-400 square feet | 5 (15.15) |
| | 400-500 square feet | 5 (15.15) |
| Type of house | Free ranging | 23 (69.69) |
| | Semi-intensive | 10 (30.31) |
| | Intensive | 0 (0.0) |
| Building materials | Brick | 2 (6.07) |
| | Brick, Net and Tin | 19 (57.57) |
| | Tin-shed and Net | 12 (36.36) |
| | Bamboo and Tin | 0 (0.0) |
| | Bamboo, Net and Tin | 0 (0.0) |
| | Others | 0 (0.0) |
| Rearing system | Cage | 3 (9.09) |
| | Floor | 28 (84.85) |
| | Wooden box | 2 (6.06) |
| Different age group in same shed | Yes | 23 (69.69) |
| | No | 10 (30.31) |
| Ration formulation | Turkey ration | 0 (0.0) |
| | Poultry ration | 3 (9.09) |
| | Own ration formula | 30 (90.91) |
| Feed ingredients | Crumble | 0 (0.0) |
| | Pellet | 1 (3.04) |
| | Mixed | 32 (96.96) |

aware of disease risks and take basic preventive actions, there is still a need for better veterinary support and stricter biosecurity measures.

Table 8 shows that most of the 33 surveyed farms ran on very small budgets. Two-thirds started with only BDT 30,000–100,000, and 84.8% still work with a similar operating capital of BDT 50,000–100,000. Feed is the largest recurring cost: 60.6% spend BDT 50,000–100,000 a year, in line with Rashid *et al.* (2020) who found feed accounted for about half of total costs. Housing, poults and medicines are the next biggest outlays. Despite this investment, nearly half of the farms made annual sales of just BDT 50,000–100,000, and 81.8% reported no profit

**Table 7. Disease management practices in selected (n=33) commercial turkey farms**

| Criteria | Groups | No (%) |
|---|---|---|
| Experience of disease prevalence in the farm | Yes | 33 (100.0) |
| | No | 0 (0.0) |
| Frequency of diseases | Frequent | 4 (12.12) |
| | Less frequent | 29 (87.87) |
| | Rare | 0 (0.0) |
| Drug and additive used with feed and water regularly | Yes | 33 (100.0) |
| | No | 0 (0.0) |
| Vaccination | Yes | 33 (100.0) |
| | No | 0 (0.0) |
| Disease commonly seen | Turkey pox | 17 (51.51) |
| | Mycoplasmosis | 5 (15.15) |
| | New Castle disease | 7 (21.21) |
| | Fowl Cholera | 4 (12.13) |
| Veterinary/consultant's advice | Regularly | 10 (30.3) |
| | At intervals | 23 (69.70) |
| | Whenever needed | 0 (0.0) |
| | Never | 0 (0.0) |
| Any endemic diseases | Yes | 0 (0.0) |
| | No | 33 (100.0) |
| Bio-security measures | Strictly followed | 2 (6.06) |
| | Normally followed | 31 (93.94) |
| | Never followed | 0 (0.0) |

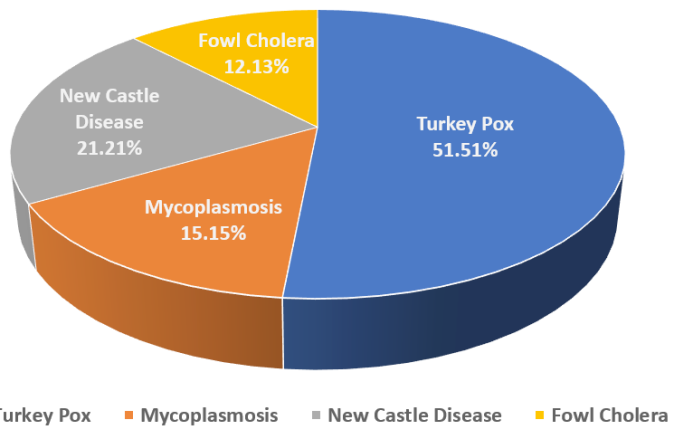



**Figure 4. Occurrence of diseases of turkey in the selected farms.**

**Table 8. Economics of commercial turkey farming (n=33) in the study areas of Bangladesh**

| Criteria | Groups (BDT) | No (%) |
|---|---|---|
| Initial capital | 30,000-100,000 | 22 (66.66) |
| | 100,001- 200,000 | 11 (33.34) |
| Current capital | 50,000-100,000 | 28 (84.84) |
| | 100,001-200,000 | 5 (15.15) |
| Housing cost | 10,000- 25,000 | 29 (87.87) |
| | 25,001- 50,000 | 4 (12.12) |
| Chick/Poult cost | 1,000-5,000 | 26 (78.78) |
| | 5,001-10,000 | 7 (21.21) |
| Feed cost/year | 50,000-100,000 | 20 (60.60) |
| | 100,001-150,000 | 13 (39.39) |
| Worker cost/year | No cost | 13 (39.39) |
| | 20,000-40,000 | 20 (60.60) |
| Medicine cost/year | 10,000- 20,000 | 28 (84.84) |
| | 20,001- 40,000 | 5 (15.15) |
| Other cost (Current bills, Watering cost, Marketing cost etc.)/year | 10,000- 30,000 | 19 (57.57) |
| | 30,001- 70,000 | 14 (42.42) |
| Total income (Chick, poult, adult turkey, egg selling etc.) | 50,000-100,000 | 15 (45.45) |
| | 100,001-200,000 | 12 (36.36) |
| | 200,001-500,000 | 3 (9.09) |
| | 500,001-1,000,000 | 3 (9.09) |
| Net profit/year | No profit | 27 (81.81) |
| | 50,000-500,000 | 4 (12.12) |
| | 500,001-1,000,000 | 2 (6.07) |

at all. Only 18.2% turned a surplus, so the enterprise is marginal under present conditions. By contrast, Rashid *et al.* (2020) calculated a net income of BDT 127,838 per 50 birds per year, driven mainly by chick sales, while Hussain *et al.* (2024) estimated profits of about BDT 370 per male and BDT 265 per female bird on small household units. The gap suggests that profitability hinges on efficient feed use, strong poult markets and good management. Farmers in our survey listed unstable prices, poor access to quality feed, high feed costs, weak marketing channels and limited technical know-how as their main obstacles. Tackling these constraints through better extension services, organized input supply and market linkage program is crucial if turkey farming is to become a reliable source of income in Bangladesh.

**Conclusion**

Recognizing the enormous potentiality of turkey as a supplement to chicken and ducks and as an alternative to red meat from cattle, buffaloes, goat and sheep−particularly beneficial for elderly−turkey farming holds promise for generating employment, providing supplementary income and serving as a valuable source of income meat and eggs. Therefore, its promotion and development should be encouraged in Bangladesh. This study assessed the current status key constraints of commercial turkey farming in selected regions, revealing several challenges. These findings call upon researchers, academicians and veterinary professionals to formulate and implement strategic measures to enhance the economic and commercial viability of turkey farming in near future in the county.

**Acknowledgement**

The study was funded by the Ministry of Science and Technology (grant no. BS-202, 2021-2022), Government of Bangladesh, to whom the authors are very grateful. The authors are also grateful to the turkey farmers who actively participated in the survey by providing valuable information.

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