



Present status of rearing backyard poultry in selected areas of Mymensingh district

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Abstract

This study was conducted in Boyra and Sutiakhali villages under Sadar upazila of Mymensingh district to know the present status of backyard poultry production system. The survey data were collected from 40 randomly selected farmers having 20 from each village by interviewing them. The data were then analyzed statistically. All the selected farmers reared *deshi* chicken and about 54% of them reared *deshi* duck only. It was also found that highest proportion (75%) of farmers reared both chicken and duck together, followed by 17.5% reared only chicken and 7.5% reared chicken, duck and pigeon at a time. The average population per household of chicken, duck and pigeon were 10.4, 9.95 and 4.0, respectively, in both villages. All farmers reared poultry in semi-scavenging system. About 55% farmers kept poultry in their dwelling house. Farmers were used boiled rice, rice polish, paddy and broken rice to feed the birds. About 62% farmers were used rice and rice polish to make diet for chicken and ducks. Farmers provided around 49g and 108g supplemental diet to each chicken and duck per day, respectively and about 65% farmers provided this diet twice a day. Majority of farmers did not use feeder and waterer (about 75% and 87.5% respectively). Age at sexual maturity of Chicken and duck were around 189 days and 195 days, respectively. Adult weight of chicken and duck were 1192.5g and 1690g, respectively. The weights of chicken and duck eggs were 39.02 and 62.5g, respectively. The hatchability of chicken and duck eggs ranged between 69-80% and 76-90% with an average of 75.97 and 83%, respectively. Majority of the farmers mentioned that the most prevalent diseases of chicken and duck were New castle and cholera (about 51% and 49%, respectively). A large number of farmers (86%) did not vaccinate their poultry. Mortality of chicken and duck were calculated about 28% and 20%, respectively. Farmers collected chicks and ducklings from market and neighbor but most of the farmers (50% for chicks and 43% for ducks) incubate eggs under the broody hen. It was concluded that backyard poultry farmers are low producers and chicken and duck were found to be the most common poultry species reared by the farmers.

Key words: Backyard poultry, present status, producers, semi-scavenging system

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Introduction

Bangladesh has a long historical record of raising poultry under backyard system. Poultry plays a vital role in the subsistence economy and contribute 1.6% in GDP (SAEDF 2008) in Bangladesh. Village poultry are usually regarded as a "Walking Bank" or "Bank Coin" for the poor families. The per capita meat and egg consumption in Bangladesh is one of the lowest in the world. The average per capita meat and egg requirement is 43.25 kg and 104 numbers, respectively and the available values are only 9.12 kg and 36 numbers per year (FAO/APHCA

2008). To reduce the gap between demand and supply of animal protein, poultry can play an important role. Moreover, poultry meat has a great demand as compared to other varieties of meat simply because of the socio-economic limitations and religious taboos on pork and beef (Jabbar et al. 1983). In Bangladesh, the meat and eggs of *deshi* chicken are more attractive to the consumer in both urban and rural areas (Das 1995). Bangladesh and many other developing countries, the meat and eggs of indigenous chicken are highly preferred for their taste and suitability for special dishes resulting in even higher market prices for these chickens than their

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exotic counterpart (Islam and Nishibori 2009). Scavenging system of poultry rearing is a century old traditional production system of the country. Indigenous chicken serve as an investment and source of security for households in addition to their use as sources of meat and eggs for consumption and of income (Muchadeyi et al. 2007). Villagers who cannot afford to maintain the stock of cattle or goat can presumably maintain a few stocks of chicken, duck and/or pigeon. However, the rural farmers do not have much knowledge on different aspects of poultry management. Despite their importance indigenous breeds are under threat due to various factors such as changing production systems and indiscriminate crossbreeding (Besbes 2009). However, sufficient knowledge on backyard poultry rearing in this respect is required. There is a paucity of systematic data on rural poultry production. Therefore the study was undertaken to know the present status of rearing backyard poultry and assessing the extent knowledge of the farmers in respect of breeding, feeding, housing, prevention and control of diseases on poultry.

Materials and Methods

Two villages under Sadar upazila of Mymensingh district and forty farmers having 20 from each village were selected purposefully and randomly. The selected areas (Boyra and Sutiakhali) and farmers were considered on the basis of their traditional crop production combined with livestock and small-scale poultry production system. The data were collected by interviewing with a fill up questionnaires on farmers knowledge regarding of backyard poultry rearing. Some parameters like feed weight, egg weight and body weight were recorded directly by the researchers. Collected data were analyzed in accordance with the objectives of the study. Mean, standard deviation and percentage were used mainly to illustrate the results.

Results and Discussion

Rearing of backyard poultry

Farmers seldom rear all the three types of poultry birds; chicken, duck and pigeon at the same time. Some rear chicken only, some chicken with duck and some all the three types of birds. It was found that highest proportion (75%) of farmers

reared both chicken and duck together rather than rearing other species at a time (Figure 1). Thus, chicken and duck were found to be the most common poultry species reared by the farmers in both villages.

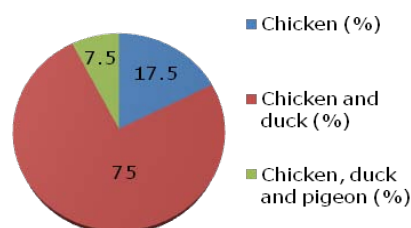


Figure 1. Rearing pattern of backyard poultry

In case of chicken, all farmers reared indigenous type (*deshi*). However, several breeds of duck namely, *deshi*, Khaki Campbell and Jinding were reared by farmers (Figure 2). Figure shows that 54% of the farmers reared only *deshi* ducks followed by rearing 13% Khaki Campbell and 6% Jinding. The proportion of farmers rearing *deshi* duck in this study was lower than that of Rahman (2009), who found 82.25% farmers reared *deshi* duck. Only three farmers reared pigeon and they did not identify their breed/variety.

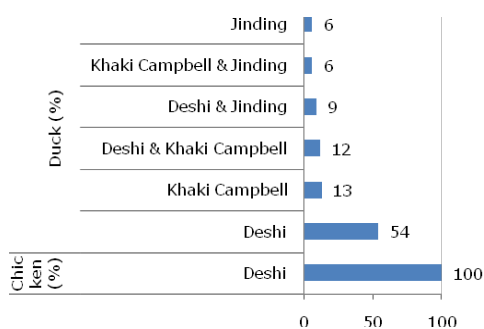


Figure 2. Different poultry breeds reared by farmers (%)

Population of poultry

Poultry producers can be classified into three categories; namely low producer having less than 11 no's; medium producer having 12 to 22 no's and high producer having more than 22 no's of poultry. The number of chicken reared by each farmer ranged from 1 to 31 with an average of 10.4 (Table 1). The number of ducks ranged from 1 to 40 with an average of 9.95 (Table 1). There were only 3 farmers kept pigeons and their population per family ranged from 3 to 5 with an

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average of 4 (Table 1). From the Table 1, it can be seen that more than 50% farmers were low producers than medium and high producers.

Table 1: Categories of poultry producers

Species	Category	*Poultry Farmer (%)	Average bird /Farmer	SD
Chicken	Low (1-11)	57.5 (23)	10.40	7.88
	Medium (12-22)	32.5 (13)		
	High (> 22)	10.0 (4)		
Duck	Low (1-11)	51.51 (17)	9.95	9.02
	Medium (12-22)	30.30 (10)		
	High (>22)	18.19 (6)		
Pigeon	Low (up to 11)	100 (3)	4.00	0.81
	Medium (11-22)	0		
	High (>22)	0		

*Parenthesis indicates number of farmers; SD, standard deviation

Poultry rearing system

All farmers under the study area reared poultry in semi-scavenging system. The observation agrees with Jensen (1996) who reported that semi-scavenging has recently been established in Bangladesh. More than 1 million semi-scavenging smallholder farms have been established and their number is growing at the rate of 1 lac annually.

Table 2. Housing patterns, bedding materials and cleanliness of poultry house

Parameters	*Boyra (%)	*Sutiakhali (%)	Average (%)
Housing patterns of poultry			
Living house	50 (10)	60 (12)	55.0
House of tin and wood	35 (7)	20 (4)	27.5
House of tin and soil	10 (2)	10 (2)	10.0
Soil bamboo and wood house	5 (1)	10 (2)	7.5
Bedding materials			
Ash	60 (12)	75 (15)	67.5
Sand	25 (5)	15 (3)	20.0
Paper and ash	15 (3)	10 (2)	12.5
Cleaning of poultry house			
Daily	50 (10)	60 (12)	55.0
Twice a week	10 (2)	5 (1)	7.5
Once a week	30 (6)	25 (5)	27.5
Once a fortnight	10 (2)	10 (2)	10.0

*Parenthesis indicate number of farmers

Feeds and feeding of poultry

Poultry farmer used a wide variety of supplementary feed for their poultry species. Study showed that about 62% of the farmers used boiled rice and rice polish other than using rice, rice polish, paddy, broken rice and wheat bran as feed ingredients for poultry in both villages (Figure 3).

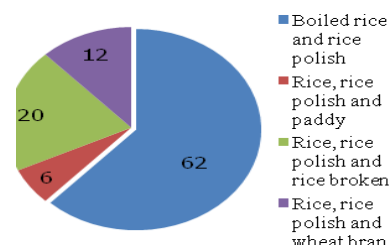


Figure 3. Ingredients used in poultry diet

Housing of poultry

Variation in housing pattern, bedding materials and frequency of cleaning of poultry house was observed. About 55% farmers kept poultry in their living house while rest of farmers used wooden and tin shed house or soil and tin shed house or soil bamboo and wood shed house (Table 2). Halim (1988) observed in Naogaon district that 44, 28 and 28% poultry were kept in bamboo cages, living house and earthen house, respectively. All farmers reported to use a common house for different types and age group of poultry. Predominating bedding materials were ash, sand and paper. It was observed that 67.5% farmers used ash then using sand or paper and ash together as a bedding material in their poultry house. It was also reported that over fifty percent farmers clean their poultry house daily (Table 2).

The farmers did not follow any specific composition while mixing ingredients. About 65% farmers provided feed to their poultry twice in a day during morning and evening (Figure 4).

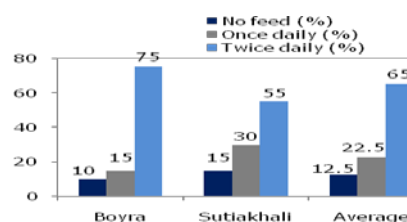


Figure 4. Frequency of feeding poultry

The amount of feed supplied to chicken ranged from 35 to 60g/d and duck ranged from 90 to 125g/d, with an average 48.5g/d and 108.12g/d, respectively (Table 3). On the basis of feeds supplied to chicken and duck farmers were classified into 3 categories; namely low, medium and high. More than 40% and 60% farmers were supplied around 41 to 50g feed per d to their chicken and duck, respectively. The amount of supplemental feed/d of each chicken 48.50g, these findings is lower than that of Yeasmin et al. (2003). They investigated the feed intake g/d of Rhode Island Red, White Leghorn, Fayomi, *Deshi* normal and *Deshi* dwarf and reported the values 96.07, 92.71, 93.55, 75.10 and 57.81g, respectively. Present result also agrees with Rahman et al. (2009). They observed that 62 percent farmers gave supplemental feeding to their ducks amounting to 118g per day to maximize egg production.

Table 3. Amount of feeds supplied to poultry daily

Species	Category	*Poultry Farmer %	Average	SD
Chicken	Low (up to 40g)	22.5 (9)	48.50	6.90
	Medium (41-50g)	45 (18)		
	High (>50g)	32.5 (13)		
Duck	Low (up to 95g)	9.09 (3)	108.12	8.06
	Medium (96-110g)	66.67 (22)		
	High (>110g)	24.24 (8)		

*Parenthesis indicate number of farmers; SD, standard deviation

Use of feeder and waterer

About 75% of farmers did not use feeder and 87.5% of farmers did not use waterer. In this rearing system, farmers were used mainly plastic or earth pot/ball for supplying feed and water of their poultry in both villages (Figure 5).

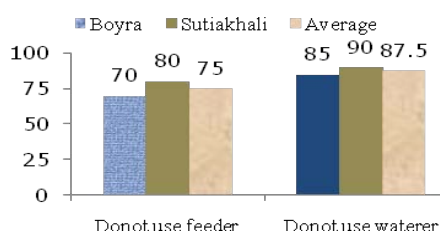


Figure 5. Use of feeder and waterer

Productivity of poultry

The study was captured age at sexual maturity, adult body weight, egg production, egg weight and hatchability of chicken and duck as productivity parameters that presented in Table 4 and 5, respectively. Age at sexual maturity of chicken and duck varied from 180 to 220 days with an average of 189.25 and 194.77, respectively (Table 4 and 5). Among farmers, 37.5% obtained first egg of chicken at 180 days of age. About 42.42% of the farmers obtained first egg of duck at 190 days of age. This observation agrees with the previous report of Huque et al. (1992). He stated that the age of sexual maturity of *deshi* chicken varied between 190 to 200 days. This observation also agrees with Islam et al. (2003) and Sarker (2005). They reported the age of sexual maturity of *deshi* duck varied 180-210 days. Eswaran et al. (1984) observed age at first egg in 138 days for Khaki Campbell ducks vs. 158 days for *deshi* ducks. The observed result agrees with Huque et al. (1992). They stated that the weight of adult *deshi* chicken was 1.2 to 1.5 kg. Present result also agrees with Islam et al. (2003) and Sarker (2005). They stated the weight of adult *deshi* duck was 1.5 to 1.8kg. This observation is also similar to that of Hamid et al. (1988). Egg production ranged from 35-52/chicken/year and 80-120/duck/year with an average of 42 and 102.87 eggs, respectively (Table 4 and 5). Among farmers, about 52.5% obtained 40 eggs per chicken per year. However, egg production is higher for duck than that of chicken. About, 51.52% found 96-110 eggs per duck per year. The observed result agrees with Bulbul (1983); Ahmed and Islam (1985). They reported that the egg production of adult *deshi* chicken was 35-40. The observation on egg production of duck was lower than that of Ukil (1992). He stated that *deshi* ducks laid 150-200 eggs per year under semi-scavenging system but the observation was higher than that of Islam et al. (2003) and Sarker (2005). They reported that the egg production of *deshi* duck 85-90/duck/year. The weight of chicken and duck eggs ranged 35-44g and 58-68g with an average of 39.2g and 62.5g, respectively (Table 4 and 5). The egg weight of chicken obtained coincides with that of Ahmed and Islam (1985) and Huque et al.

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(1992). They reported the egg weight of *deshi* chicken was 35-39g. Present result of *deshi* duck coincides with that of Islam et al. (2003) and Sarker (2005). They reported the egg weight of *deshi* duck was 65g. The hatchability of chicken and duck egg ranged from 69 to 80% and 76 to 90% with an average of 75.97% and 83%, respectively (Table 4 and 5). Approximately 50% of farmers got the hatchability more than 72% for chicken eggs (Table 4) and about 54.55% of farmers got the hatchability more than 84% for duck eggs (Table 5). Present result of chicken egg hatchability was lower than that of Azharul et al. (2005) and Khatun et al. (2005). Azharul et al. (2005) investigated that hatchability of broody hens under Bangladesh condition was 86.6%. Khatun et al. (2005) showed that the hatchability on fertile eggs ranged from 78.33 to 90.79% in different genotypes of native chicken. On the other hand, hatchability of duck egg was higher than that of Rahman (2009) and Hamid et al. (1988). Rahman (2009) found 79% hatchability of duck egg and Hamid et al. (1988) reported the hatchability of *deshi* ducks as 66%.

Table 4. Productivity of chicken

Parameters	Category	*Farmer (%)	Average	SD
Sexual maturity	Early (<180 d)	37.5 (15)		
	Moderate (181-190 d)	37.5 (15)	189.25	10.22
	Late (>190 d)	25 (10)		
Adult weight	Low (up to 1100g)	32.5 (13)		
	Medium (1101-1250g)	40 (16)	1192.5	122.23
	High (>1250g)	27.5 (11)		
Egg production	Low (up to 40)	52.5 (21)		
	Medium (41-45)	30 (12)	42	4.54
	High (>45)	17.5 (7)		
Egg weight	Low (up to 38g)	40 (16)		
	Medium (39-41g)	45 (18)	39.02	2.3
	High (>41g)	15 (6)		
Hatchability (%)	Low (up to 71)	10 (4)		
	Medium (72-76)	50 (20)	75.97	2.87
	High (>76)	40 (16)		

*Parenthesis indicate number of farmers; SD, standard deviation

Disease of poultry

Diseases that outbreak frequently in the study area are presented in Table 6. From Table 6, it was observed that 51% and 49% farmers stated

that their chickens and ducks were affected with New castle and duck cholera, respectively in both villages which was mostly prevalent disease. This finding coincides with that of Mohanty (1987) and Saha (2003). They reported that the most prevalent disease of *deshi* chicken was New castle, followed by Fowl pox, Coccidiosis, respiratory problems and other miscellaneous diseases.

Table 5. Productivity of duck

Parameters	Category	*Farmer (%)	Average	SD
Sexual maturity	Early (<190 d)	42.42 (14)		
	Moderate (191-205 d)	45.46 (15)	194.77	10.37
	Late (>205 d)	12.12 (4)		
Adult weight	Low (up to 1500g)	15.15 (5)		
	Medium (1501-1750g)	51.52 (17)	1690.00	137.84
	High (>1750g)	33.33 (11)		
Egg production	Low (up to 95)	33.33 (11)		
	Medium (96-110)	51.52 (17)	102.87	9.86
	High (>110)	15.15 (5)		
Egg weight	Low (up to 61g)	36.36 (12)		
	Medium (62-65g)	57.58 (19)	62.50	2.56
	High (>65g)	6.06 (2)		
Hatchability (%)	Low (<84%)	33.33 (11)		
	Medium (84-88%)	54.55 (18)	83.00	2.70
	High (>88%)	12.12 (4)		

*Parenthesis indicate number of farmers; SD, standard deviation

The results agree with more or less similar to that of Rahman (2009) and Baki et al. (1986). Rahman (2009) found, 100% of the duck owners in Noakhali Sadar and Ramgati reported that the most prevalent diseases of ducks were Plague and Cholera. Baki et al. (1986) mentioned that Duck Plague and Duck Cholera are the common diseases of epidemic nature in Bangladesh.

Table 6: Important diseases of poultry

Species	Diseases	Farmers (%)
Chicken	New castle	51
	Fowl pox	27
	Fowl cholera	13
	No disease	9
Duck	Duck cholera	49
	Duck plague	22
	Limber neck poisoning	11
	No disease	18

Among the farmers in both villages about 86% did not vaccinate their poultry because of lack of facilities and knowledge of vaccination (Figure 6).

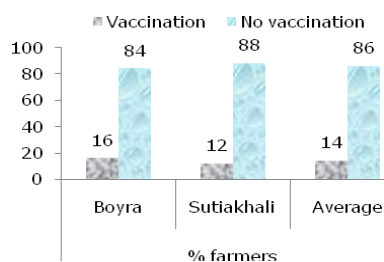


Figure 6: Use of vaccine in poultry

Mortality of poultry

Mortality of chicken and duck ranged from 10 to 37% with an average of 27.82 and 20.4%, respectively (Table 7). The mortality in this observation is higher than that of Ershad (2005). He mentioned that the mortality of *deshi* chicken was 14.5%. The mortality in this observation is lower than that of Huque and Husain (1994) and Khanum et al. (2005). Huque and Husain (1994) reported that the mortality of Khaki Campbell and *Deshi* duck were 58% and 72%, respectively. Khanum et al. (2005) reported that the mortality of duck in Netrokona was 27.1%.

Table 7: Mortality (%) of chicken and duck

Species	Categories	*Poultry Farmer (%)	Average	SD
Chicken	Low (up to 20)	12.5 (5)	27.82	5.94
	Medium (21-30)	52.5 (21)		
	High (>30)	35 (14)		
Duck	Low (up to 15)	18.18 (6)	20.4	6.02
	Medium (16-25)	66.67 (22)		
	High (>25)	15.15 (5)		

*Parenthesis indicate number of farmers; SD, standard deviation

Source of poultry

There are some ways of getting poultry by farmers. A large number of farmers did not purchase bird or borrow from anywhere. They incubate chicken and duck egg under broody hen to get baby chicks and duckling. The farmers incubating eggs of chicken and duck for baby chicks and ducklings were 50% and 43%, respectively (Figure 7). Moreover, they go to market and neighbors (18% and 32 %; 21% and

36%, for chicken and ducks, respectively) for getting poultry (Figure 7).

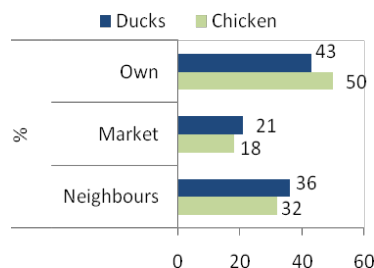


Figure 7: Sources of chicken and ducks

Constraints of backyard poultry

Traditional methods, scarcity of feed, lack of appropriate housing facilities, disease prevalence, inadequate supply of vaccine and medicine, attack of predators were identified as the major problems for backyard poultry rearing.

Recommendation to improve backyard poultry

- For increasing the productivity of backyard poultry, provision of high yielding varieties of *deshi* birds will be introduced.
- A systemic training program needs to be organized for the village women on rearing management of poultry.
- Availability of feed, medication and vaccination to farmers at reasonable price will have to increase the productivity of backyard poultry
- A large number of farmers did not use vaccine to prevent diseases. So it's needed to be strengthened to educate the farmers on taking prevention and curative measures against diseases. Support from the Government to develop backyard poultry into a viable venture is required.
- Extension and motivational works should be carried out in the villages to encourage the farmers to increase the level of poultry operation pattern.

Conclusion

The study concluded that backyard poultry farmers were low producers and chicken and duck were found to be the most common poultry species reared by the farmers. Poultry rearing knowledge such as breeding, feeding, housing,

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prevention and control of diseases are not satisfactory of the farmers. Therefore, a need-based extension program should be introduced among the farmers giving more focus on building awareness and ability about poultry production.

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