



*Original Research*

## Duck Farming Practices in Tripura

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### Abstract

The present study was undertaken to know the duck rearing practices in Tripura. "Stratified random sampling" technique was used to select 100 respondents. Data were collected through personal interview. The results obtained from the study indicated that 80.00 percent of the farmers were rearing ducks under free range system, mainly kept for consumption of eggs and meat. Majority of the farmers, 81.00 percent reared Desi/Pati duck and 19.00 percent reared Khaki Campbell. Among farmers, 74.00 percent used rice, rice grains, rice bran, wheat bran, kitchen waste for feeding the ducks and 100.00 percent used rice as supplementary feed. All the farmers (100.00%) were incubating the duck eggs by using broody hen. Majority of the farmer, 42.00 percent used clay box for incubation of eggs. The average egg production was 108 eggs/duck/year. The average age at first egg laying was 6 month. For the treatment of diseased duck farmers (100.00%) used medicine. There is a great potentiality of improving the productivity of ducks in Tripura.

**Key words:** Duck, Farming, Practices, Tripura

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### Introduction

Duck rearing is essentially prevalent among small and marginal farmers. Duck production is a suitable alternative for job bolster. Duck raising is exceptionally well known and completely a lucrative livestock industry around the globe because of its egg, meat and feather. In addition, ducks are more productive than chicken and more adaptable to the free-range system of rearing. Their growth rate is also faster than chicken (Rajput *et al.*, 2014). They require very simple type of housing. Ducks are hardy and can easily adapt to various atmospheres and they are likewise moderately resistant to diseases. Tripura stands 3<sup>rd</sup> in total livestock population (1936179 thousand) 2<sup>nd</sup> position in poultry population (4272 thousand) in the North East Region (Livestock Census, 2012). The total egg production is 2294.26 lakh numbers in the year 2016-



17 (Basic Animal Husbandry & Fisheries Statistics, 2017). Duck production in Tripura can provide self-employment for landless and small farmers. There is a great potentiality of improving the productivity of ducks in Tripura. Ducks can contribute efficiently in increasing egg and meat production than chicken in this North-eastern State. Thus, the study has been undertaken to know the present system of duck rearing practices in the state.

## Materials and Methods

The sample survey for the research was carried out at purposively selected two districts *i.e.* Sepahijala district and South district of Tripura. These two districts were having highest number of duck population. From each district two development blocks and from each block 5 villages were selected randomly, so a total of 20 villages were selected. From each village 5 households rearing at least 5 ducks for last one year were selected randomly and the total numbers of respondents for the study were 100, *i.e.* fifty (50) respondents from each district. The husbandry practices of the duck farmers were examined utilizing structured interview schedule technique.

## Results and Discussion

### Housing of Ducks

Table 1 reveals that 80.00 percent of the farmers were rearing ducks under free range system and 20.00 percent farmer rears duck with integrated rearing system. In these rearing systems, ducks can be reared at very low cost as the cost of feeding is minimal. No farmers were found to rear ducks under indoor or confined system. The proportion of farmers rearing the duck under free range system was almost similar (85.00-87.00%) with the findings of Amin (1999) and slightly lower than the findings (100.00%) of Islam *et al.* (2016).

**Table 1:** Duck rearing and housing practices followed by the duck farmers

Parameter	Categories	Frequency & Percentage (n=100)
System of Rearing	Free Range System	80
	a) Integrated Duck Rearing Systems	20
	b) Duck keeping combined with paddy cultivation	11
	c) Duck keeping combined with fish ponds	9
Construction of Coop	Bamboo and Woods	80
	Other materials	20

The study showed that majority of the respondent (80.00%) used bamboo or woods to construct coop of duck. Rahman *et al.* (2009) also found similar result that most of duck houses (65.50%) were made of tin and wood. Farmers used a variety of materials to make the floor of the house (Fig. 1). Figure shows that

49.00 percent of the farmers used wood and tin followed by 20.00 percent farmers used straw/thatch and bamboo. They used bamboo and woods for house construction as these items were easily available mostly free of cost in their locality.

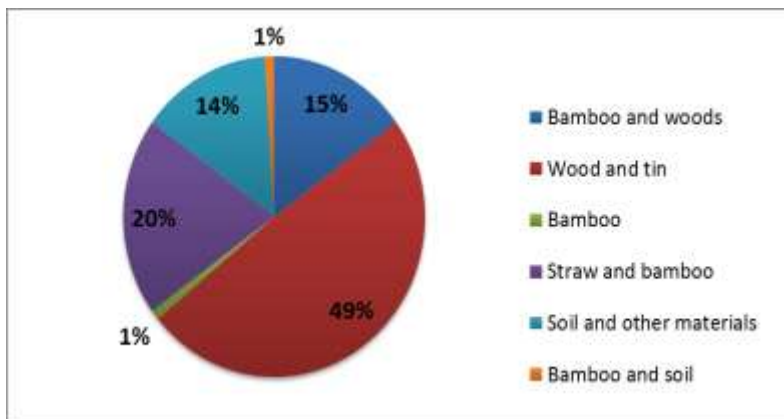


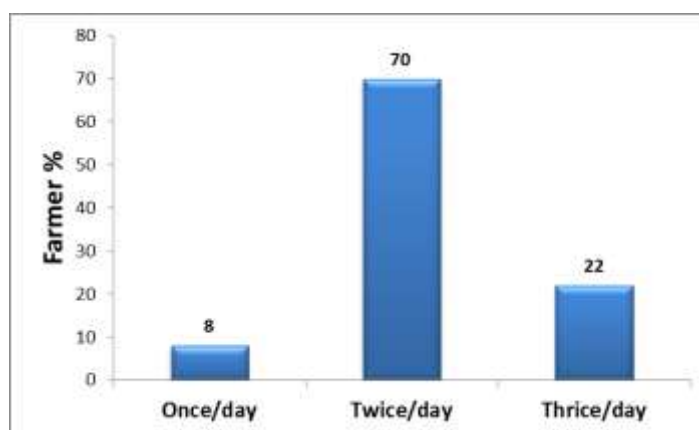
Fig. 1: Materials used for making the floor of duck house

### Feeds and Feeding of Ducks

A wide variety of supplementary feed was used by the farmers to feed their ducks. The study revealed that 74.00 per cent farmers used rice, rice grains, rice bran, wheat bran, kitchen waste. Rice and its byproducts and kitchen waste were easily available at low cost in the locality. The current finding revealed that 100.00 percent farmers used rice in the diet of duck which is similar with the findings of Islam *et al.* (2016) but contradicted to the findings of Rahman (2009). It is found that that among farmers, 79.00 percent of them reared the ducks under scavenging condition followed by evening ration to utilize the kitchen waste, 21.00 percent reared under scavenging condition (with only naturally available feed resources). Duck farming is having symbiotic relationship with paddy cultivation, so ducks and paddy cultivation can be integrated in the entire paddy farming areas. The finding was slightly different from the result reported by Rahman *et al.* (2009) that about 62.00 and 39.00 percent farmers were rearing ducks under scavenging system with supplemental feeding and scavenging with only natural feed resources, respectively. Majority of the farmers, (70.00 %) provided feeds to the ducks twice a day, 22.00 percent provide thrice a day (Fig. 2). The finding was almost similar with the findings of Hoque *et al.* (2010). All the farmers (100%) were providing feeds in a container for feeding the ducks.

**Table 2:** Method of feeding and types of ration used by the duck farmers

Parameter	Categories	Frequency & Percentage (n=100)
Feeds used for feeding	Rice/rice grains/rice bran/Wheat bran/Kitchen waste	74
	Rice/rice grains/rice bran	21
	Rice/rice grains/rice bran/Concentrated feeds	2
	Rice/rice grains/rice bran/Wheat bran	1
	Rice/Kitchen waste/Concentrated feeds	1
	Rice/rice grains/rice bran/Snails and insects	1
Method of feeding	Scavenging	21
	Scavenging followed by evening ration	79
Type of feeding trough	Putting feeds on the container	100

**Fig. 2:** Frequency of feeding in a day

### Breeding

Desi/Pati duck was the predominant duck breeds/variety found in the study area as 81.00 percent of the respondents reared these type of ducks. This was due to the absence of any specific selection and breeding system applied in the flocks. The finding is similar with the finding of Rahman *et al.* (2005), who reported that 82.00 percent farmers reared desi breeds in the coastal areas of Bangladesh. Farmers used to collect duckling from different sources. Fig. 3 disclosed that 47.00 percent of farmers bought duckling from local market, 38.00 percent farmers used to collect from neighbour/relatives and 15.00 percent farmers used hatched ducklings at their premises as their source of duckling. The result differed from the finding of Islam *et al.* (2016) which reported that 26.00 percent farmers purchased from market, 18.00 percent farmers purchased duckling from neighbour house and 50.00 percent farmers were using natural hatching. All the farmers who incubated their duck eggs were incubating the eggs by using broody hen as chicken are more broody than duck. Among the farmers who were incubating the duck egg, all of them used broody hen for hatching of duck eggs. Islam *et al.* (2002) also reported the similarly findings. The eggs for incubation were collected from different sources. It is found that 88.00 percent farmers utilized home produced eggs for

hatching and none of them preferred eggs purchased from the market as the fertility of such eggs were very low. Majority of the respondents, 57.00 percent were incubating eggs round the year, 25.00 percent of farmers incubated in wet season and 6.00 percent of farmers incubated in dry season. Duck farmers used different types of nest box for incubation of eggs. Majority of them (42.00%) used clay box for incubation, 27.00 percent used casket made up with bamboo and 19.00 percent used cartoon box (Table 3) as per availability of the material in their locality.

**Table 3:** Breeding and brooding practices of ducks followed by the duck farmers

Parameter	Categories	Frequency & Percentage (n=100)
Breeds of Duck	Khaki Campbell	19
	Pati/Desi duck	81
Brooding done By	Broody duck	0
	Broody hen	88
	Not Done	12
Source of eggs for incubation	Eggs laid in the house	88
	Incubation not done	12
Season of eggs incubation	Dry season	6
	Wet season	25
	Any season	57
Nest box for broody hen or duck	Clay box	42
	Cartoon box	19
	Bamboo made	27



**Fig. 3:** Sources of duckling

### Productive Performance of Ducks

Table 4 shows that the average age at first egg lay recorded was 6 month. The average total egg production was very low (108 nos/year) as they were keeping mostly desi/pati ducks. The average hatchability percentage was recorded to be 75.00 percent. The average body weight of a mature duck was 1.47 kg/bird.

**Table 4:** Productive performance of the ducks

S. No.	Parameter		Mean±SD
1	Age at first egg lay (month)	Maximum: 7	6.115±0.2341
		Minimum: 5.5	
2	Eggs/duck/year	Maximum: 190	108±23.52
		Minimum: 70	
3	Hatchability (%)	Maximum: 80	75.21±2.90
		Minimum: 65	
5	Body weight of mature ducks (kg)	Maximum: 2	1.472±0.1995
		Minimum: 1	

### Healthcare

All the farmers (100%) used medicine for treatment of diseased duck (Table 5). The current finding was highly contradictory to the findings of Rahman *et al.* (2009) who reported that only 7.00 percent of the duck farmers used medicine. The study showed that 73.00 percent farmers consulted para-veterinarian and 27.00 percent consulted veterinarian for treatment of their ducks. A great majority of the respondents, 76.00 percent and 90.00 percent of the farmers were not practicing deworming and vaccination as they were not aware about schedule (Table 5). The finding was almost similar with the result of Rahman *et al.* (2009) who reported that 85.50 percent farmers did not use vaccines against the diseases of ducks.

**Table 5:** Treatment of diseased ducks followed by the duck farmers

Parameter	Categories	Frequency & Percentage (n=100)
Treatment of ducks	Use of medicine	100
Treatment is done by	Veterinarian	27
	Para-veterinarian	73
Deworming of ducks	Occasional	24
	Not practice	76
Vaccination of ducks	Done	10
	Not done	90

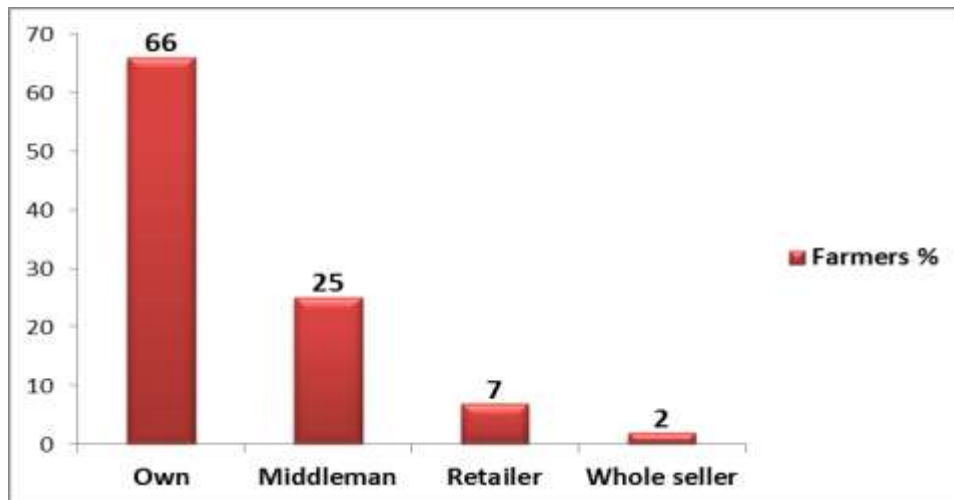
### Marketing of Ducks and Duck Products

It was found that 66.00 percent farmers sold their ducks and eggs by themselves (Fig. 4). Among the farmers, 61.00 percent were selling their duck and duck products whenever there was an outbreak of disease and 39.00 percent sold only when needed money (Table 6). A great majority of the respondents (86.00%) sold ducks and duck products round the year. Majority of the farmers, 61.00 percent were transporting their ducks hanging by hands while 38.00 percent were using bamboo casket. Different farmers were selling

their ducks and the products at different rate as prevalent in the locality and the preferences of the people. A mature adult male and female ducks were sold at an average price of Rs.412/bird and Rs.337/bird respectively. A grower male and female ducks were sold Rs.132/bird. The average price of duck eggs was more than 9 Rs/egg which was costlier than chicken eggs.

**Table 6:** Marketing practices followed by the duck farmers

Parameter	Categories	Frequency & Percentage (n=100)	Mean±SD
Reason of selling	When I need money	39	
	When disease outbreak occur	61	
Season of selling	Dry season	2	
	Wet season	12	
	Any season	86	
Mode of transportation of duck	Embracing by hand	1	
	Hanging by hand	61	
	Bamboo casket	38	
Pricing system of duck and duck products	Mature male duck (whole bird/ per kg Live weight)	Maximum: Rs. 500	412.45±48.72
		Minimum: Rs.300	
	Mature female duck (whole bird/ per kg Live weight )	Maximum: Rs.450	337.05±44.67
		Minimum: Rs.250	
	Grower male duck	Maximum: Rs.200	132.2±24.26
		Minimum: Rs.80	
	Grower female duck	Maximum: Rs.200	132.2±24.26
		Minimum: Rs.80	
Eggs	Maximum: Rs.10	9.43±0.89	
	Minimum: Rs.7		



**Fig. 4:** Selling of ducks/duckling/eggs

**Purpose of Duck and Egg Production**

The data in the Table 7 revealed that the farmers were rearing the ducks for home consumption of eggs and meat (100.00%), for selling (99.00%), for replacement (77.00%) and for utilizing the eggs for hatching (82.00%). There was high demand for the duck meat and eggs as people preference is more over chicken meat and eggs. All the farmers (100.00%) kept ducks to utilize the kitchen waste/ leftover food and for subsidiary income. For employment purpose 86.00 percent of farmers were keeping ducks.

**Table 7:** Purpose of duck and eggs production

Categories	Frequency & Percentage (n=100)
For hatching of eggs	82
For replacement of duck	77
To utilize the kitchen waste/ leftover food	100
For subsidiary income	100
For home consumption of eggs and meat	100
For selling of eggs and duck	99
For employment purpose	86
For ornamenting purpose	1
For cultural/traditional/ritual purpose	1
For eradication of weed and predatory fishes	13
To reduce the cost of farming	6

### Conclusion

From the study it can be concluded that most of the duck farmers reared Desi/Pati duck in low input-low output basis. Introduction of egg/meat type breeds can enhance the production in future. There is no pragmatic approach in duck farming due to lack of awareness on scientific management among the farmers. For better production routine vaccination and deworming has to be carried out throughout the state under the initiative State Government. Duck farming in Tripura is a promising sector. Therefore, a need based extension program should be introduced among duck farmers to enhance their knowledge and awareness about duck production and management.

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