**CHAPTER-I**

**INTRODUCTION**

Bangladesh is a over populated country (1015 people per k$m^{2}$) of the world with a population of 149.772 million people within the area of 147570 k$m^{2}$**(BBS, 2011).** About 80% people of this country live in villages and are extremely poor. In 2000, 52.5% of the urban and 44.3% of the rural people was surviving under the poverty line (Sumy *et al*., 2010).

However, the people of our country is blessed with a variety of agricultural resources of which chicken rearing is considered to have potential both for poverty alleviation and food production (Sumy *et al.,* 2010). Chicken rearing is suitable for widespread implementation as it cost less, requires little skills, is highly productive and can be incorporated into the household works (Solberg *et al.*, 1997).

Poultry sector will create job opportunity for 10m people in Bangladesh (Source: Financial Express, Bangladesh 23 July, 2010). In the last few years, the recognition of small-scale commercial poultry production helps to accelerate the pace of poverty reduction riding in new height in Bangladesh. It has already capable to rise at an annual growth of around 20 per cent during last two decades. This industry has immense potentialities from the point of view of the economic growth of the country as well as fulfillment of basic needs and to keep the price at a minimum level and ensuring food especially animal protein for the human being. This industry has immense scope for the country through changing livelihood & food habit, reduction of dependence of meat related to cow and goat and ultimately has positive impact on GDP growth rate of the country.

Broiler farming plays an important role in improving livelihood, food security and poverty alleviation in rural and semi-urban communities in developing countries including Bangladesh. Broiler production has become a specialized and speedy business at present time for the people of the country due to short life cycle of the broiler and requirement of relatively less amount of capital attributed to its popularity to the farmers (Ahmed *et al*., 2009). A study report on the impact on Smallholder Livestock Development Project (SLDP) in rural community at different rural areas of Bangladesh revealed that the overall socio-economic condition of the beneficiaries, their egg and meat consumption capability, empowerment of rural women in decision making issues and employment opportunities were significantly increased after the intervention made by SLDP (Alam, 1997). Another study showed that commercial broiler farming provided employment opportunities for unemployed family members, improved socio-economic conditions and increased women empowerment among rural people of Bangladesh (Rahman *et al*., 2006).

Protein intake is recommended to be in range of 0.8 to 1.6 g per kg body weight for human (Anonymous, 1998) Broiler meat contains high quality protein and micro-nutrients which has had a tremendous impact on health and nutrition for the poor people in rural areas (Neumann *et al*., 2002; Barroetoa, 2007). Again, another study reported that it can be the main source of family earning or can provide sufficient income and gainful employment opportunity to rural farmers throughout the year (Bhende, 2006). For this reason, broiler farming has been playing a important role in providing meat to overcome the malnutrition and serve as a tool for employment generation and poverty alleviation (Raha, 2007).

Eggs contain complete protein and can supply essential amino acids. Eggs also contain nine non-essential amino acids, vitamins, minerals, antioxidants, saturated, monounsaturated and polyunsaturated fatty acids, cephalin, lecithin, and cholesterol. The content of low-calorie eggs benefits populations throughout the world at every stage of the human life cycle. So layer farming is very much important to fulfill the egg demand and to improve socio-economic condition of the farmers (Ottinger *et al.,* 2009).

The district Kishoreganj occupies an important place in Bangladesh in respect of poultry farming because of availability of all facilities. So, the present study was undertaken to evaluate the existing management system of poultry farming and understanding the socio-economic condition of the broiler and layer farmers.

**The specific objectives of the study**

1. To know the socio-economic status of the broiler and layer farmer.
2. To study the management system of broiler and layer farm at Kishoreganj district.
3. To determine the productivity, profitability of different types of poultry farms under different managemental practices.

**CHAPTER-II**

**MATERIALS AND MRTHODS**

**2.1 Study area**

The study was conducted at Hossainpur Upazilla under Kishoreganj district in Bangladesh. From Hossainpur upazila 6 union named Araibari, Gobindapur, Jirani, Pumdi, Sahedal and Sidhla union were selected for study. The district Kishoreganj was selected due to availability of large number of broiler and layer farms and good communication facilities.

**2.2 Study period**

The study was conducted between the periods of 22 February, 2016 to 24 March, 2016, when I was in Upazila Veterinary Hospital (UVH) internship placement at Kishoreganj District Veterinary Hospital under Kishoreganj district of Bangladesh.

**2.3 Sources of data**

Data for this study was obtained from both primary and secondary sources. The primary data were collected by using structured questionnaires and the secondary data was obtained from District Livestock Office, Kishoreganj.

**2.4 Research design**

The research design adopted for this study was of ex-post-facto in nature since the phenomenon has already occurred.

**2.5 Sampling Procedure**

***2.5.1 Sample size***

A total 40 farms on which 20 broiler and 20 layer farms were selected for this study.

***2.5.2 Sampling methods***

Kishoreganj district and Hossainpur upazilla were selected biasly (Non random selection). Hossainpur upazila has six unions. From these unions, five unions and two villages from each union were randomly selected (Multi-stage random sampling). From these selected villages two farms of each category (Broiler and Layer) were selected by Stratified random sampling method. Each farm rearing at least 1000 bird is taken under consideration.

**2.6 Methods of data collection**

Data were collected through direct interview schedule and recorded in a questionnaire/ interview schedule.

**2.7 Analytical techniques**

The data were put on the master sheet in Microsoft Office Excel 2007 and were arranged in tabular form. The obtained data imported to software STATA/IC-11.0 for analysis. Descriptive statistics (i.e. means, frequencies etc) was done to estimate the different variables. Unpaired unequal t-test was used to determine the level of significance (*p<0.05* and *p<0.01*) between categorical variables.

**CHAPTER-III**

**RESULTS AND DISCUSSION**

**3.1 General description of the farm**

The Table 3.1 revealed that the mean farm size (Number of bird), number of family member, number of educated person per farmer family and amount of land (acre) per farmer were 4336.84$\pm $541.99, 6.16$\pm $0.47, 1.26$\pm $0.23 and 3.51$\pm $0.4 in broiler farms and 5252.63$\pm $708.61, 4.79$\pm $0.27, 1.37$\pm $0.21 and 4.1$\pm $0.45 in layer farms. There were found no statistically significance difference (p$>$ 0.05) between the broiler and layer farms in terms of farm size (Number of bird), number of educated person per farmer family and amount of land per farmer. But there were found statistically significance difference (P< 0.05) in number of family member between broiler and layer farmers.

**Table 3.1**: **Analysis of different parameters related to farms and farm owners (N=40).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Parameters** | **Broiler farm****(N=20)** | **Layer farm (N=20)** | **P-value** |
| **Mean**$\pm $ **SE** | **Mean**$\pm $ **SE** |
| Farm size (Number of bird) | 4336.84$\pm $541.99 | 5252.63$\pm $708.61 | 0.41 |
| Number of family member  | 6.16$\pm $0.47 | 4.79$\pm $0.27 | 0.02 |
| Number of educated member per farmer’s family | 1.26$\pm $0.23 | 1.37$\pm $0.21 | 0.74 |
| Amount of land per farmer (acre) | 3.51$\pm $0.4 | 4.1$\pm $0.45 | 0.36 |

Islam *et al.,* (2010) found per farmer have 0.49 acre and Devendra, (1993) showed 0.99- 1.97 acres of land per farmer.

**3.2. Socio-economic condition of the farmers**

Different factors associated with socio-economic condition of the farmers of Kishoreganj district engaged in poultry farming are listed in Table 3.2 and specific findings of the study also describe below:

**Table 3.2**: **Factors associated with socio-economic status of the farmers in Kishoreganj district (N=40).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables** | **Categories** | **No. of farm/****Farm owner**  | **Percentage (%)**  |
| Type of farmer | Landless (0.00-0.50 acre) | 2 | 5 |
| Marginal (0.51-1.24 acre) | 3 | 7.5 |
| Small (1.25-2.47 acre) | 5 | 12.5 |
| Medium (2.48-4.94 acre) | 13 | 32.5 |
| Large ($\geq $ 4.95 acre) | 17 | 42.5 |
| Source of investment | Own | 23 | 57.5 |
| Bank loan | 13 | 32.5 |
| With interest from money lender | 3 | 7.5 |
| Without interest from money lender | 1 | 2.5 |
| Number of birds | $<$ 3000 | 10 | 25 |
| 3000-5000 | 18 | 45 |
| $>$ 5000 | 12 | 30 |
| Training | Yes | 11 | 27.5 |
| No | 29 | 72.5 |
| Family Type | Single | 19 | 47.5 |
| Joint | 21 | 52.5 |
| Farming is main occupation | Yes | 22 | 55 |
| No | 18 | 45 |
| Amount of loan(BDT.) | No loan | 20 | 50 |
| $<$100000 | 5 | 12.5 |
| 100000 - 500000 | 9 | 22.5 |
| $>$ 500000 | 6 | 15 |
| Level of educational knowledge  | High ( Above secondary) | 5 | 12.5 |
| Medium (Secondary) | 10 | 25 |
| Poor ( Primary) | 25 | 62.5 |
| Level of poultry farm management skill | High | 15 | 37.5 |
| Medium | 15 | 37.5 |
| Poor | 10 | 25 |

***3.2.1 Socio-economic status in terms of land***

About 42.5% large, 32.5% medium, 12.5% small, 7.5% marginal and 5% landless farmers were involved in farming in Hossainpur upazila of Kishoreganj district (Table 3.2).These findings agree with the study of Rahman *et al*., (2002) in Rajshahi district. These findings indicate that, in this sector, comparatively rich farmers are more involved than poor, although Islam *et al*., (2010) reported that all of the farmers involved in the farming are small categories (Having 6-49 decimal land).

***3.2.2 Sources of investment of the farmer***

The present study shows that, 57.5% farmer invest their own money in farming and 32.5% takes bank loan, 75% manage investment from money lender in terms of interest and remaining 2.5% also takes from money lender but without interest. These findings have similarity with Rahman *et al*., (2002) in a study in Rajshahi district.

***3.2.3 Size of the farm***

The size of the farm reflects the socio-economic status of the farmer. About 30% of the farmers have more than 5000 birds, 45% have 3000-5000 birds and 30% have more than 5000 birds.

***3.2.4 Training***

About 27.5 % of the farmer had received training of farming and left 72.5% did not take any training at all about poultry farming. It was enumerated that 8.5 % of the poultry farmer had received training in any times of his farming life (BBS, 2011).

***3.2.5 Farming as occupation***

The present study shows that, farming is the main occupation of 55% of the farmers involved in the study and for remaining 45%, it is subsidiary occupation. Ahmed *et al.,* (2009) showed that, farming is the main occupation of the 35% of the broiler farmer. This higher value in my finding is due to involvement of layer in my study but Ahmed *et al*., (2009) did not consider layer farmers.

***3.2.6 Level of educational knowledge and managemental skill***

Most of the farmers have poor level of knowledge (62.5%), but level of managemental skill is high in 37.5% of the farmers. Rahman *et al.,* (2002) found that, 71.43% and 24.29% of the farmers have high and medium level of knowledge respectively.

**3.3 Common management Practices in poultry farms under study**

**Table: 3.3**: **Management of broiler farm in study area of Kishoreganj district (N=20).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables**  | **Categories** | **No. of farms** | **% of farms** |
| **Water** |  |  |  |
| Drinker type | Hanging drinker | 17 | 85 |
| Pot/ bucket | 3 | 15 |
| Attached | 0 | 0 |
| Water supply | Manual | 8 | 40 |
| Pump | 12 | 60 |
| **Disease management** | own effort | 5 | 25 |
| By quack | 8 | 40 |
| By vets | 5 | 25 |
| All  | 2 | 10 |
| **Vaccination** | Regular | 12 | 60 |
| Irregular | 4 | 20 |
| Not at all | 4 | 20 |
| **Waste disposal****(litter material)** | To open air | 3 | 15 |
| To a pit | 4 | 20 |
| Biogas plant | 5 | 25 |
| Sell  | 1 | 5 |
| Fish feed | 2 | 10 |
| Crop field | 5 | 25 |
| **Biosecurity** |  |  |  |
| Enclosure surrounding the farm | Present | 0 | 0 |
| Absent  | 20 | 100 |
| Footbath  | Present | 2 | 10 |
| Absent  | 18 | 90 |
| Disinfectant spray | Use | 5 | 25 |
| Not | 15 | 75 |
| Visitors | Restricted | 4 | 20 |
| Moderately restricted | 9 | 45 |
| Allowed | 7 | 35 |
| Isolation of birds | Yes | 2 | 10 |
| Not | 18 | 90 |
| Migrating birds | Restricted | 13 | 65 |
| allowed | 7 | 35 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables**  | **Categories** | **No. of farms** | **% of farms** |
| **Housing** |  |  |  |
| Floor  | Concrete  | 15 | 75 |
| Muddy | 5 | 25 |
| Slats | 0 | 0 |
| Roof  | Iron sheets | 17 | 85 |
| Concrete | 2 | 10 |
| Bamboo & leaf | 1 | 5 |
| Sidewall | Wire netting | 19 | 95 |
| Bamboo splint  | 1 | 5 |
| **Floor**  |  |  |  |
| Rearing system | Floor  | 20 | 100 |
| Case | 0 | 0 |
| Litter material | Rice husk | 15 | 75 |
| Saw dust | 3 | 15 |
| Wood shavings | 2 | 10 |
| Frequency of litter change/month | 2 times | 8 | 40 |
| 3 times | 6 | 30 |
| 4 times | 6 | 30 |
| **Feeding**  |  |  |  |
| Feeder type  | Hanging plastic feeder | 17 | 85 |
| Pot/ bucket | 3 | 15 |
| Attached with case | 0 | 0 |
| Feed type | Self prepared  | 3 | 15 |
| Readymade mash | 3 | 15 |
| Readymade pellet | 14 | 70 |
| Use in crop production | 5 | 25 |
| Allowed | 7 | 35 |
| **Use of fan** | Yes | 12 | 60 |
| Not  | 8 | 40 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables**  | **Categories** | **No. of farms** | **% of farms** |
| **Housing** |  |  |  |
| Floor  | Concrete  | 15 | 75 |
| Muddy | 5 | 25 |
| Slats | 0 | 0 |
| Roof  | Iron sheets | 17 | 85 |
| Concrete | 2 | 10 |
| Bamboo & leaf | 1 | 5 |
| Sidewall | Wire netting | 19 | 95 |
| Bamboo splint  | 1 | 5 |
| **Floor**  |  |  |  |
| Rearing system | Floor  | 20 | 100 |
| Case | 0 | 0 |
| Litter material | Rice husk | 15 | 75 |
| Saw dust | 3 | 15 |
| Wood shavings | 2 | 10 |
| Frequency of litter change/month | 2 times | 8 | 40 |
| 3 times | 6 | 30 |
| 4 times | 6 | 30 |
| **Feeding**  |  |  |  |
| Feeder type  | Hanging plastic feeder | 17 | 85 |
| Pot/ bucket | 3 | 15 |
| Attached  | 0 | 0 |
| Feed type | Self prepared  | 3 | 15 |
| Readymade mash | 3 | 15 |
| Readymade pellet | 14 | 70 |
| Use in crop production | 5 | 25 |
| Allowed | 7 | 35 |
| **Use of fan** | Yes | 12 | 60 |
| Not  | 8 | 40 |

**Table 3.4:** **Management of layer farms in study area of Kishoreganj district (N=20).**

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables**  | **Categories** | **No. of farms** | **% farms** |
| **Housing** |  |  |  |
| Floor  | Concrete  | 16 | 80 |
| Muddy | 4 | 20 |
| Slats | 0 | 0 |
| Roof  | Iron sheets | 17 | 85 |
| Concrete | 3 | 15 |
| Bamboo & leaf | 0 | 0 |
| Sidewall | Wire netting | 20 | 100 |
| Bamboo splint netting | 0 | 0 |
| Rearing system | Floor  | 7 | 35 |
| Case | 13 | 66 |
| **Feeding** |  |  |  |
| Feeder type | Hanging plastic feeder | 4 | 20 |
| Pot/ bucket | 3 | 15 |
| Attached with cage | 13 | 65 |
| Feed type | Self preparation  | 8 | 40 |
| Readymade mash | 12 | 60 |
| Readymade pellet | 0 | 0 |
| Amount of feed/ day | Less than 115 gm | 5 | 25 |
| 115- 120 gm | 12 | 60 |
| More than 120 gm | 3 | 15 |
| Frequency of feeding/day | 2 times | 14 | 70 |
| 3 times | 4 | 20 |
| 4 times | 2 | 10 |
| **Egg collection** | Manual  | 20 | 100 |
| Automated machine | 0 | 0 |

|  |  |  |  |
| --- | --- | --- | --- |
| **Variables**  | **Categories** | **No. of farms** | **% farms** |
| **Water**  |  |  |  |
| Drinker type | Hanging drinker | 4 | 20 |
| Pot/ bucket | 3 | 15 |
| Attached | 13 | 65 |
| Water supply | Manual | 6 | 30 |
| Pump | 14 | 70 |
| **Use of fan** | Yes | 13 | 65 |
| Not  | 7 | 35 |
| **Disease management** | Own effort | 3 | 15 |
| By quack | 5 | 25 |
| By vets | 8 | 40 |
| All  | 4 | 20 |
| **Vaccination** | Regular | 14 | 70 |
| Irregular | 4 | 20 |
| Not at all | 2 | 10 |
| **Waste disposal****(litter material)** | To open air | 5 | 25 |
| To a pit | 5 | 25 |
| Biogas  | 3 | 15 |
| Sell | 2 | 10 |
| Fish feed | 2 | 10 |
| Use in crop production | 3 | 15 |
| **Biosecurity** |  |  |  |
| Enclosure  | Present | 1 | 5 |
| Absent  | 19 | 95 |
| Footbath | Present | 9 | 45 |
| Absent  | 11 | 55 |
| Disinfectant spray | Use | 10 | 50 |
| Not | 10 | 50 |
| Visitors | Restricted | 5 | 25 |
| Moderately restricted | 8 | 40 |
| Allowed | 7 | 35 |
| Isolation  | Yes | 2 | 10 |
| Not | 18 | 90 |
| Migrating birds | Restricted | 15 | 75 |
| allowed | 5 | 25 |

***3.3.1 Housing***

The poultry houses in the Kishoreganj district, that are found in this study are mainly made of concrete (75% of the broiler and 80% of the layer houses) and remaining are made of mud (25% of broiler and 20% of layer houses). Corrugated iron sheet made roof were found 85% cases of both broiler and layer houses, concrete roof were found 10% of broiler and 15% of layer houses. Roof made of bamboo and leaf was found in 5% cases of broiler house but not found in layer house. In most of the cases sidewall of the house consists of wire netting (95% cases in broiler and 100% cases in layer house). Only one case of broiler (5%) the sidewall consists of bamboo splint netting. (Table 3.3 and 3.4).

In terms of side wall, North and Bell, (1990) suggested that the side wall should remain open. The height of the opening depends on climatic condition. For broiler 1/2 to 2/3 of each side should keep open. In present study the use of wire netting is more or less similar as open side’s house because of free access of air.

In present study there were found most of the roof of farm made of corrugated iron sheets. These findings have similarity with Chabo *et al.,* (2000) who reported that the most common material used in roofing poultry house is corrugated iron sheets.

***3.3.2 Floor management***

In current study it was revealed that in 100% cases broilers are reared in floor and 35% of the layer farm rears their bird in floor (Table 3.3 and 3.4). About 75% of the broiler farmer use rice husk, 15% use saw dust and 10% use wood shavings these findings are found in current study (Table 3.3 and 3.4). Mizu *et al.,* (1998) reported that in Bangladesh different types of litter such as saw dust, sugarcane bagasses, rice husk, wheat straw, sand and ash are used.

***3.3.3 Feeding***

In present study it was revealed that 85% of the broiler and 20% of the layer farmer use hanging plastic feeder, 15% of both broiler and layer farmer use pot / bucket feeder and in 65% of the layer farm the feeder are attached with case (Table 3.3 and 3.4).

In terms of type of feed used, 15% of the broiler farmer used self prepared and readymade mash feed and remaining 70% use readymade pellet feed. In layer none of the farmer use readymade pellet but, 60% use readymade mash and remaining 40% use self prepared feed (Table 3.3 and 3.4). Jahan *et al.,* (2006) in a study found the highest, intermediate and lowest body weight gain by crumble, pellet and mash feeding respectively. Mendes *et al.,* (1995) showed that, bird feed mash diet had a better feed conversion ratio (FCR) than pellet.

In current study it was found that, the broiler are maintained with adlibitum feeding where as the amount of feed per bird per day in case of layer are categories as less than 115 gm (25% of the farm); 115-120 gm (60% of the farm) and more than 120 gm (15% of the farm) (Table 3.3 and 3.4). Mahmud *et al.,* (2008) conducted a study in which all experimental birds were fed a commercial layer ration @ 110 gm per bird per day.

***3.3.4 Water management***

In this study it was found that, 85% of broiler and 20% of layer farmer, 15% of both broiler and layer farmer use hanging plastic feeder and pot/bucket respectively. In 65% of the layer farms, the drinker is attached with the cage(Table 3.3 and 3.4).The scenery of water supply is that, 40% of broiler and 30% of layer farm perform water supply manually and 60% of broiler and 70% of layer farm use pump**.**

***3.3.5 Biosecurity***

The Biosecurity practices of the farms involved in present study is not so good. In broiler farms there is no enclosure found, footbath present only in 10% of the farm, disinfectant spray use only 25% of the farm, in about 35% of the farm the visitors are allowed, 90% of the farm have no isolation facilities and about 35% of the farms have chance to entry of migrating bird. In layer farm these parameters are 5%, 55%, 50%, 35%, 90%, and 25% respectively(Table 3.3 and 3.4).

**3.4 Economic analysis**

***3.4.1 Per bird annual gross cost (Average)***

Per bird average annual gross cost for rearing of broiler and layer are 925.5 BDT. and 1332.5 BDT respectively (Table 3.5).

**Table 3.5: Per bird annual gross cost (Average)**

|  |  |
| --- | --- |
| **Items** | **Expenditure** |
| **Broiler** | **Layer** |
|  | **Per bird cost in one batch** | **Total cost****(BDT.)** | **Per bird annual cost** | **Total cost****(BDT.)** |
| **Gross****Cost (BDT.)** | **Depreciation** **cost (BDT.)** | **Gross** **cost (BDT.)** | **Depreciation** **cost (BDT.)** |
| DOC | 45 | - | 55 | 50 | - | 50 |
| Feed  | 81 | - | 81 | 1259 | - | 1259 |
| Labor  | 8 | - | 8 | 10 | - | 10 |
| Medication  | 8 | - | 8 | 10 | - | 10 |
| Housing  | - | 2 | 2 | - | 3.00 | 3 |
| Equipment  | - | 0.25 | 0.25 | - | 0.50 | 0.5 |
| Total gross | 142 | 2.25 | 154.25 | 1329 | 3.50 | 1332.5 |
| Total gross cost for 6 batch in a year:154.25\*6= 925.5 |  |

\*DOC:Day Old Chick

Islam, J., (1995) studied economic analysis of poultry farms of different sizes in some selected area of Dhaka district. He found that the total costs of per poultry bird per year were BDT. 406.17, 373.86 and 347.54 for small, medium and large poultry farms respectively. Alam, J., (1997) found the cost per bird was BDT. 106.68 for intensive farm. The higher value of cost in the study due to recent increase of price of feed and other raw materials.

***3.4.2 Per bird annual gross return (Average)***

Per bird gross return of broiler and layer are shown in the Table 3.6. Per bird gross return of broiler and layer are BDT. 1080 and BDT. 2210 respectively which is higher than per bird net cost. Islam, J., (1995) found average gross return per poultry bird per year stood at BDT. 614.15, 599.67 and 351.69 for small, medium and large farm respectively. Alam, J., (1997) found the return per bird was BDT. 129.5 for intensive farm. The higher value of return in my study due to recent increase of price of chicken meat and eggs.

**Table 3.6:** **Per bird annual gross return (Average)**

|  |  |  |
| --- | --- | --- |
| **Items** | **Broiler (BDT.)** | **Layer (BDT.)** |
| Selling of bird (broiler/spend hen) | 1080 | 180 |
| Selling of eggs (290 pieces) | - | 2030 |
| Total gross return | 1080 | 2210 |
| Per bird annual benefit cost ratio. | 1: 1.17 | 1: 1.66 |

**Figure 3.1:** **Gross return, gross cost and net profit of per broiler and layer.**

The figure 3.1 shows that gross return, gross cost and net profit is higher in layer than broiler. This indicates that although rearing cost is high in layer farm but it is more profitable than broiler farming.

***3.4.3 Benefit Cost Ratio***

The benefit cost ratio is shown in Table 3.6. The result of cost benefit ratio is 1:1.17 in broiler and 1:1.66 in layer. The benefit cost ratio value in my study more or less close to the findings of Alam, J., (1997), he found 1:1.22 cost benefit ratio for intensive broiler farms.

**Figure 3.2: Benefit cost ratio for broiler and layer (Per bird).**

**LIMITATIONS**

There were some limitations in the study. The study period was limited and study area restricted to a particular district, for this reason the findings may not reflect the whole country. There was limited recording system in poultry farms under study as a result it was difficult to select valid data. Some of the farmers were not cooperative to give information.

**CHAPTER-IV**

**CONCLUSION**

Poultry farming is a great opportunity for the rural people and youth as a means of income generation. Socioeconomic development might be achieved with the help of household poultry farming. There is a wide scope for the development of poultry farming in the countrywide because rural poor people have enough time for rearing poultry. It would be really very helpful for income generation, women empowerment, and fill up nutritional gap for the rural family. Socio-economic position on subsidiary occupation, monthly household income and expenditure, cash in hand, savings with bank, household assets, number of school going children, monthly consumption of meat, eggs, vegetables, milk and fish, sources of drinking water, condition of latrines and health status of farmers were improved and the annual cost for treatment is reduced after adopting farming. Since most of the people irrespective of caste and religion prefer chickens and eggs, its demand is and price is gone up. Most of the poultry farmers were small farmers while some of them were landless. It was also revealed that layer farming is more profitable than broiler, so farmers can adapt layer farming for maximum profit. In the present study, in terms of overall socio-economic improvement it was found that poultry farming helped to improve their socioeconomic condition. As a result, tendency to initiate poultry farming is widely observed in rural areas.

**REFERENCES**

Abreu, V.M.N., Abreu, P.G. de., Jaenisch, F.R.F., Coldebella, A., Paiva, D.P. de., Suínos, E. and Aves 2011. Effect of Floor Type (Dirt or Concrete) on Litter Quality, House Environmental Conditions, and Performance of Broilers. *Brazilian Journal of Poultry Science*, 13(2):127-137.

Ahmed, J.U., Mozumdar, L., Farid, K.S. and Rahman, M.W. 2009. Broiler farming: An approach to improve rural livelihood. *Journal of Bangladesh Agricultural University*, 7(2): 395-402.

Alam, J. 1995. Livestock resources in Bangladesh: Present status and future potential. University Press Limited, Dhaka, Bangladesh.

Alam, J. 1997. Impact of smallholder livestock development project in some selected areas of rural Bangladesh*. Livestock for Rural Development*, 9(3).

Alam, J., Sayeed, M.A., Rahman, S.M.A., Yasmin, F. and Begum, J. 1998. An economic study on poultry farms in Bangladesh. *Bangladesh Journal of Livestock Research*, 2:1-5.

Alam, S.M. 2004. A study on backward and forward linkage of poultry farming in some selected areas of Savar Upazila under Dhaka district. M.S. Ag. Econ. thesis, Department of Agricultural Economics, Bangladesh Agricultural University, Mymensingh.

Ali, MA. 1993. An economic analysis of poultry farming in some selected areas of the Dhaka city. M.S. thesis, Bangladesh Agricultural University, Mymensingh, Bangladesh.

Austic, E. Richard and Nesheim, C. Malden, 1990. Poultry production. Thirteenth edition, Lea and Febiger publication, pp: 172,250.

Banerjee, G.C.1998. A text book of animal husbandry. Eighth edition, Oxford and IBH publishing Company Private Limited, New Delhi, pp: 880-899.

Barnett, V. 1991. Sample Survey Principles and Methods. Third edition, Edward Arnold Publisher Ltd, London. 1991.

BAU-FSRDP, 1986. Farming System Research. Annual report, Bangladesh Agricultural University, Mymensingh, Bangladesh.

BBS, 2010. Statistical Year Book of Bangladesh. Bangladesh Bureau of Statistics, Statistical Division, Ministry of Planning, Government of the People's Republic of Bangladesh, Dhaka, Bangladesh.

Bhuiyan, A. H. 2003. A Comparative Economic Analysis of Poultry Under Supervision of AFTAB Bahumukhi Farm and own Management in Some Selected Areas of Kishoreganj district. M.S. Ag. Econ. thesis, Department of Agricultural Economics, Bangladesh Agricultural University, Mymensingh.

Farooq, M., Zahir-ud-Din, Durrani, F.R., Mian, M.A., Chand, N. and Ahmed, J. 2002. Prevalent diseases and overall mortality in broilers. *Pakistan Veterinary Journal*, 22(3): 112-115.

Islam, M.A. 2003. Poultry Products Processing and Marketing System in Bangladesh. *Pakistan Journal of Biological Science*, 6(10): 883-886.

Islam, M.S. and Sasaki, T. 2009. Socio-economic development of small scale broiler farmers in rural areas of Bangladesh: A case study of Mymensingh district. *Journal of Rural Problems*, 45:88-93.

Islam, M.S., Takashi, S. and Chhabi, K.Q.N. 2010. Current Scenario of the Small-scale Broiler Farming in Bangladesh: Potentials for the Future Projection**.** *International Journal of Poultry Science*, 9 (5): 440-445.

Islam, S.M.F and Jabbar, M.A. 2005. Smallholder poultry model for poverty alleviation in Bangladesh: A review of evidence on impact. *Livestock Research for Rural Development*, 17(10).

Jabbar, M.A, Islam, S.M.F., Delgado, C., Ehui, S., Akanda, M.A., Khan,I. and Kamruzzaman, M. 2005b. Policy and scale factors influencing efficiency in dairy and poultry production in Bangladesh. ILRI (International Livestock Research Institute), Nairobi, Kenya: 89.

Jahan, M.S., Asaduzzaman, M. and Sarkar, A.K. 2006. Performance of Broiler Fed on Mash, Pellet and Crumble. *International Journal of Poultry Science*, 5 (3): 265-270.

Mahmud, S., Yaseen, M., Yasmeen, F., Hasan, M. and Akter, N. 2008.Comperative productive performance and egg characteristics of pullets and spent layers. *Pakistan Veterinary Journal*, 28(1): 5-8.

Mandal, M. A. S., Bairagi, S. K. and Rahman, M. Saidur. 2005. Vertical Integration in Bangladesh Agriculture: The Case of Contract Farming for High Value Food Products. *Bangladesh Journal of Political Economy*, 22(1 and 2): 1-12.

Mizu, M. M. R., Chowdhury, S. D., Karim, M. J. and Debnath, S.C. 1998. Influence of rice husk litter on broiler performance , litter dampness and its Coccidial oocysts population during winter. Asian-*Australasian* Journal of *Animal Sciences*, 11(4): 450-454.

Rahman, M. M., Islam, M.R., Ullah, M.N., and Adeyl, F.M.M. 2002. Study on the Scientific Knowledge and Managemental Skill in Commercial Broiler Farming Programme at the Farmers Level of Rajshahi District. *OnLine Journal of Biological Sciences*, 2(11): 767- 768.

**ACKNOWLEDGEMENT**

At first I am really thankful to almighty Allah who has given me strength and opportunity to complete the report – Socio-economic condition of farmers and management practices in poultry farming at Kishoregonj district in Bangladesh.

Completion of any work or responsibility gives nice feelings but the accomplishment of this work as the partial fulfillment of the requirements for the degree of Doctor of Veterinary Medicine(DVM) in (CVASU), not only has given me the pleasure but also given me the confidence to move ahead and showed me a new opening to knowledge. Standing at this opening, it is an honor to revoke the names of the person and the organization I am grateful to.

I would like to extend my gratitude to my supervisor Meherunnesa Chowdhury Sumy, Associate Professor, Dept. of Agricultural economics and social sciences, CVASU. My heartfelt thanks to her for support and creative directions. I had autonomy to decide my ways with the progress under her persistent feedback.

Special thanks to Dr. Mohammad Ali, District Livestock Officer, Kishoreganj and Dr. Bahadur Ali, Veterinary Surgeon, Kishoreganj district veterinary hospital for their cordial cooperation at the time of conducting the research work.

Author

**Biography**

I am Md. Ashiqur Rahman, son of Md. Saidur Rahman and Dilruba. I passed my Secondary School Certificate (SSC) from Kadamtala Purbo Bashabo High School, Dhaka and Higher Secondary Certificate (HSC) from Cantonment Public School and College, Mymensingh in 2010 (G.P.A-4.50). Now I am an intern veterinarian under the faculty of Veterinary Medicine in Chittagong Veterinary and Animal Sciences University. I am interested to work in the field of Animal Nutrition.