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Efficiency of Trained Farmers on the Productivity of Broilers in a Selected Area of Bangladesh

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Abstract: The study was conducted in Jessore District of Bangladesh to observe the efficiency of trained farmers as compared to farmers with out training on the production performances of broilers as well as the net profit from broiler production. Three categories of farmers were considered in the present study, viz., Certificate on Livestock and Poultry (CLP) trained farmers, this category of farmers had 6 months long training on livestock and poultry production, Youth Training Center (YTC) trained farmers, this category of farmers had 3 months long training on livestock and poultry production and General farmers, this category of farmers had no formal training on poultry/broiler production. The production parameters considered in the study were live weight gain (kg bird^{-1}), feed consumption (kg bird^{-1}), feed conversion ratio (FCR) and mortality (%). The overall production performances and net profit was found better in both of the trained farmers categories as compared to general farmers. Therefore, it can be recommended here that the training of farmers is obvious for efficient and profitable broiler production in the country.

Key words: Trained farmers, productivity, net profit, broiler

Introduction

Broiler rearing is being more popular in Bangladesh to meet up the growing demands of animal protein in the country. It can contribute towards the increase of meat production perhaps efficiently and now more economically than indigenous chicken and duck. In Bangladesh more than 130 hatcheries are producing 3.4 millions of day-old-chick (DOC) per week. Thirty thousands commercial broiler and layer farms supplying 0.26 millions metric tons of poultry meat and 5210 millions table eggs per year (Rahman, 2003). This of course is promising as well as encouraging for one of the least developed countries like Bangladesh.

There are 64, in every districts, Youth Training Center under the Ministry of Youth and Sports, Bangladesh are providing training on livestock and poultry rearing with an special emphasis on broiler farming. Similarly Bangladesh Open University is also proving Certificate in Livestock and Poultry (CLP). Broiler farming is very sensitive business and it needs skilled manpower to operate a farm efficiently. Broilers are usually marketed at about 40 to 45 days. Within this short duration special care and attention regarding their housing, feeding, prevention and control of diseases can make this business profitable. In Bangladesh most of the broiler farmers have no formal training. For the consequence production performances are less. To enrich the farmers and other concerned people with up dated knowledge training is needed. Training activities for all concerned people could well be performed in a National Poultry Training Institute since each of the existing training institute/centers is meant for a special group of people. Training of poultry farmers especially on bio-security and management must be emphasized, as the disease in our country are mostly of management origin. Privet sector should also be encouraged to establish Poultry Training Institute in Bangladesh (Chowdhury and Das, 2001). Available of imputes such as feed, vaccine and credit facility and organization of training programme are also essential to support sustainable development of poultry (Huque *et al*., 2001). Considering this view in mind the present study was undertaken to evaluate the efficiency of trained farmers as compared to farmers without training on the production performances of broilers as well as net profit from broiler production.

Materials and Methods

The study was conducted among the farmers of Jessore area of Bangladesh during the period of February to July 2003. Three categories of farmers were considered in the study and 20 farmers were selected randomly from each category. Three categories of farmers were as follows:

1 **CLP Trained Farmers:** The farmers of this category were participated a course on Certificate in Livestock and Poultry (CLP) organized by Bangladesh Open University (BOU). The duration of this course was 6 months and it composed of livestock and poultry production.
2 **YTC Trained Farmers:** The farmers of this category were trained from Youth Training Center (YTC) under

Table 1: Rearing and management pattern of broilers according to three categories of farmers

Types of farmers	No. of birds introduced per batch	Average rearing period (days)	Types of feed (%)		Floor types of houses (%)	
			Ready made feed users	Self-made feed users	Deep litter floor	Ware mash floor
CLP trained farmers	465.16±0.14	39.80±0.71	90	10	70	30
YTC trained farmers	456.40±55.86	40.90±0.81	85	15	75	25
General farmers	438.50±44.17	42.00±0.92	90	10	90	10

the Ministry of Youth and Sports, Bangladesh. The duration of the training programme was 3 months and the main components of the training were livestock, poultry and fisheries.

3 **General Farmers:** This category of farmers had no formal training on broiler rearing.

The survey was conducted among the farmers by a prepared questionnaire. The questionnaire was prepared according to the objectives of the study. The various parameters considered in the study were marketing live weight (kg bird^{-1}), total feed consumption (kg bird^{-1}), feed conversion ratio (FCR) and mortality (%). Feed conversion ratio was calculated by the ratio of total feed consumed and total live weight gain. Net profit from each broiler was calculated by subtracting total investment from total income per bird. Day old broiler chicks were collected from different breeder hatcheries available in the locality. Most of the farmers provided ready-made feed available in the market. However, a small portion provided self-mixed feeds to the broilers (Table 1). Vaccination and medication was provided according to the recommendation of breeder hatcheries. Floor types of broiler houses are shown in Table 1.

The average number of birds introduced per batch for CLP trained farmers, YTC trained farmers and General farmers were 465.16, 456.40 and 438.50, respectively (Table 1). The rearing period of broiler for each batch was almost similar for each category of farmer and the average rearing period for CLP trained farmers, YTC trained farmers and General farmers were 39.80, 40.90 and 40.90 days, respectively (Table 1). Collected data were analyzed by SPSS (SPSS, 1999) computer program.

Results and Discussion

Marketing live weight (kg bird^{-1}): The marketing live weight per broiler for CLP trained farmers, YTC trained farmers and General farmers were 1.68, 1.93 and 1.64 kg during the rearing period of 39.80, 40.90 and 40.90 days, respectively. The marketing live weight per broiler was found higher in YTC trained farmers (1.93 kg) among three different categories and the difference was significant (P<0.01) (Table 2). These results were better than other workers. Sarker (1998) observed 1.30 and 1.38 kg live weight during 8 weeks period for traditional feed and vitamin mineral supplemented feed, respectively. Rasool *et al.* (1998) found 1.58, 1.67, 1.72 and 1.56 kg live weight in a broiler flock providing different levels of microbial culture (EM_4) in feed. Das *et al.* (1996) found the live weight gain of 1.62 and 1.53 kg for two different rations having 12% soybean meal and no soybean meal, respectively.

Total feed consumption (kg bird^{-1}): Total feed consumption per bird for CLP trained farmers, YTC trained farmers and General farmers were 3.25, 3.90 and 3.71 kg, respectively and the differences were significant (P<0.01). Sarker (1998) found the feed consumption of 3.27 and 3.29 kg per broiler during the period of 8 weeks for traditional feed and vitamin mineral supplemented feed, respectively. Rasool *et al.* (1998) found 3.49, 3.54, 3.54 and 3.48 kg feed consumption per broiler in a flock providing different levels of microbial culture (EM_4) in feed. Rahman *et al.* 1996 observed 3.12, 3.95 and 4.32 kg feed intake per broiler in summer, rainy and winter season, respectively. Das *et al.* (1996) found the feed consumption per bird was 4.35 and 4.28 kg for two different rations having 12% soybean mean and no soybean meal, respectively.

Feed conversion ratio (Feed intake/live weight gain): Feed conversion ratio (FCR) was found lower in CLP trained farmers (1.93) and higher in general farmers (2.13) among three different categories of farmers and the variation was significant (P<0.01) (Table 2). This factor is mainly deepens on the quality of feed, genetic quality of broiler and management practices. Rahman *et al.* (1996) observed feed conversion ratio of 3.09, 2.96 and 2.98 in summer, rainy and winter season, respectively. Das *et al.* 1996 observed FCR of 2.69 and 2.79 in two diets containing 12% soybean meal and no soybean meal, respectively. Sarker (1998) found the FCR of 2.51 and 2.39 for traditional feed and vitamin mineral supplemented feed, respectively.

Mortality (%): The mortality percentage for CLP trained farmers, YTC trained farmers and General farmers were 4.36, 4.19 and 7.95%, respectively and the difference was significant (P<0.01) (Table 2). The broiler mortality percentage was much more higher in case of unskilled farmers (General farmers). Mortality in a broiler flock is very important consideration for successful and profitable broiler production and it should minimize within 5.0 percent. Islam *et al.* (1998) found average mortality of 2.33% in a broiler flock providing different types of ration. Sarker (1998) observed the effect of feeding vitamin mineral premix on the mortality of broiler and found the mortality of 3.33 and 1.66% for traditional

Table 2: Broiler production performances according to three different categories of farmers

Parameters	Types of farmers	Number of farmers	Mean	F-value	Level of significance
Marketing live weight (kg bird^{-1})	CLP trained farmers	20	1.68±0.12^{a}	7.12	**
	YTC trained farmers	20	1.93±0.25^{b}		
	General farmers	20	1.64±0.30^{a}		
	Total	60	1.75±0.50		
Total feed consumption (kg bird^{-1})	CLP trained farmers	20	3.25±0.11^{b}	5.22	**
	YTC trained farmers	20	3.90±0.18^{a}		
	General farmers	20	3.71±0.14^{a}		
	Total	60	3.62±0.16		
Feed conversion ratio (Feed intake/ live weight gain)	CLP trained farmers	20	1.93±0.11^{a}	5.38	**
	YTC trained farmers	20	2.00±0.14^{a}		
	General farmers	20	2.13±0.19^{b}		
	Total	60	2.02±0.15		
Mortality (%)	CLP trained farmers	20	4.36±0.53^{a}	4.34	**
	YTC trained farmers	20	4.19±0.77^{a}		
	General farmers	20	7.95±1.49^{b}		
	Total	60	5.50±0.62		

^{ab} Mean with uncommon superscripts for each parameter differ significantly, NS= Non-significant, * P<0.05, ** P< 0.01, ** P<0.001

feed and vitamin mineral supplemented feed, respectively. However, Rahman *et al.* (1996) observed higher mortality of broiler in different season. They found the broiler mortality of 24, 24 and 25 percent in summer, winter and rainy season, respectively.

Cost of day old chick (Taka bird^{-1}): A significant difference (P<0.001) in chick cost was observed among three categories of farmers (Table 3). The general farmers bought day old chick by lowest cost and YTC trained farmers bought it by highest cost.

Feed cost (Taka bird^{-1}): Feed costs for each bird among three categories of farmers are shown in Table 3.
Highest and lowest feed costs per bird were found in general farmers (52.83 Taka) and CLP trained farmers (45.35 Taka), respectively. Category of farmers had a significant (P<0.01) effect on feed cost (Table 3). Cost of feeding constitutes more than 75% of the total expenditure in the poultry entrepreneurship, therefore, any endeavor to reduce the feeding cost reflects greatly on the profitability (Sapcota, 2001). Pillet form ready feed for broiler in generally for its color, moisture, texture and purity is better than self-mixing feed. Supply of feed ingredients like wheat, maize, fishmeal etc. was very unstable that causes difficulties in formation low-cost balanced ration (Howlidar, 2000). Trained farmers had better idea about the quality control of poultry feed.

Management cost (Taka bird^{-1}): Management costs per bird for three different categories of farmers are shown in Table 3. The effect of farmers' category was found significant (P<0.001) on this parameter (Table 3). Management cost included labor cost, litter cost, transport cost, vaccination and medication cost.

Total production cost (Taka bird^{-1}): Production cost per bird was highest in YTC trained farmers (96.74 Taka) and lowest in CLP trained farmers (85.09 Taka) among three categories of farmers (Table 3). Category of farmers had a significant effect (P<0.01) on the production cost. Rahman *et al.* (1996) found comparatively lower production cost of 45.15, 60.55 and 63.50 Taka per bird in summer, rainy and winter season, respectively.

Sale value (Taka bird^{-1}): Sale value per bird was highest in YTC trained farmers (113.23 Taka) and lowest in General farmers (96.87 Taka) among three categories of farmers (Table 3). Category of farmers had a significant effect (P<0.01) on the production cost. Sale value per broiler depends on individual live weight and market price per kg live broiler. Rahman *et al.* (1996) found less sale value of 50.50, 67.00 and 72.50 Taka per bird in summer, rainy and winter season, respectively.

Net profit (Taka bird^{-1}): Highest net profit per bird was found in YTC trained farmers (16.48 Taka) and lowest in general farmers (7.29 Taka). However, Rahman *et al.* (1996) found comparatively less profit of 5.32, 6.45 and 9.0 Taka per bird in summer, rainy and winter season, respectively. The effect of category of farmers was found significant (P<0.05) on net profit.
Broiler rearing is a good source of income generates, self-employment and animal protein especially for the small farmers for alleviating their poverty. This business becomes more popular due to short rearing period, comparatively small investment and lower risk. Trained farmers know how to operate a broiler farm efficiently by providing better ration, management, vaccination and medication. To enrich the farmers and other concerned people with up dated knowledge training is needed.
Training activities for all concerned people could well be performed in a National Poultry Training Institute since each of the existing training institute/centers is meant for

Table 3: Cost benefit analysis for broiler rearing according to three different categories of farmers

Parameters	Types of farmers	Number of farmers	Mean	F-value	Level of significance
Cost of day old chick (Taka bird^{-1})	CLP trained farmers	20	21.10±0.22^{a}	15.26	***
	YTC trained farmers	20	21.40±0.16^{a}		
	General farmers	20	20.00±0.18^{b}		
	Total	60	20.83±0.13		
Feed cost (Taka bird^{-1})	CLP trained farmers	20	45.35±1.60^{b}	6.35	**
	YTC trained farmers	20	56.21±2.75^{a}		
	General farmers	20	52.83±2.11^{a}		
	Total	60	51.46±1.38		
Management cost (Taka bird^{-1})	CLP trained farmers	20	18.63±0.40^{a}	13.58	***
	YTC trained farmers	20	19.14±0.34^{a}		
	General farmers	20	16.77±0.26^{b}		
	Total	60	18.18±0.23		
Total production cost (Taka bird^{-1})	CLP trained farmers	20	85.09±1.75^{a}	6.81	**
	YTC trained farmers	20	96.74±2.81^{b}		
	General farmers	20	89.60±2.06^{a}		
	Total	60	90.48±1.42		
Sale value (Taka bird^{-1})	CLP trained farmers	20	98.66±±3.01^{a}	6.99	**
	YTC trained farmers	20	113.23±4.01^{b}		
	General farmers	20	96.87±3.06^{a}		
	Total	60	102.92±2.15		
Net profit (Taka bird^{-1})	CLP trained farmers	20	13.07±2.21^{a}	3.62	*
	YTC trained farmers	20	16.48±2.17^{b}		
	General farmers	20	7.29±2.88^{a}		
	Total	60	12.28±1.47		

^{ab}Mean with uncommon superscripts for each parameter differ significantly, *P<0.05, **P< 0.01, **P<0.001, 1 US Dollar=61 Taka (approx.)

a special group of people. Training of poultry farmers especially on bio-security and management must be emphasized, as the disease in our country are mostly of management origin.

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