CHAPTHER I: INTRODUCTION

Poultry sector is one of the fastest growing agricultural sub-sectors for global meat production and consumption. Bangladesh posses a large and rapidly expanding poultry sector. There are about 242.86 million chickens are available in Bangladesh (BBS, 2012). The normal requirement of animal protein as meat for a human is about 62.5 gm per day. Poultry rearing plays an important role for improving the nutritional status of the Bangladeshi people through reducing the gap of protein supply within a short period of time. Therefore, to meet up the protein scarcity within shortest possible time, emphasis should be given on intensive poultry farming. Before 3 decades poultry was reared as a backyard farming system and a few numbers of poultry was reared by the rural people for their own consumption of meat and eggs. Nowadays the commercial poultry become popular for income generation, employment opportunity. Poultry plays an important role in the economic development of the country. Bangladesh has a long historical record of raising poultry under traditional back yard system. However, the growth of commercial poultry was started after eighties and then it has been growing very fast. In early nineties a number of private farms started to produce commercial day-old broiler and layer chicks in the country. The commercial poultry farming is getting more popularity, huge employment opportunities are being created among the rural farmers, retailers, traders, various support servicemen, businessmen etc. A total 5 million people are working in this sector of different farm size (Saleque, 2007).

Proper management ensures efficient production and good quality products (meat and eggs). This is accomplished by controlling diseases, maintaining feed efficiency, proper handling of wastes, and proper sanitizing of the poultry house (Islam *et al.*, 2014). The number of poultry grew at an annual rate of 6.7 percent over the period 1990-97. Over 1993-94 there were only 43589 poultry firms, which increased substantially to reach a number of 150,000 by the year 2006-07, but due to either avain infiuenza or higher feed prices, the number of firms reduced to 55000 in 2013 from 115000 in 2007 (Raha, 2007). Another source reported that there were about 65902 poultry farms up to February 2013 in the country (BER, 2013).

Broiler industry is a rapidly growing enterprise in Bangladesh. Among the sector of poultry industry broiler industry are growing fast. Broiler chicken attains 2kg live weight at 6-8 weeks of age. They can be utilized feed efficiently for meat production. The production of meat depends on various factors such as nutrition, feed intake. The feed conversion efficiency is the ratio of amount of feed intake and the total live weight of birds. In Bangladesh on the basis of management and weather condition, the feed conversion efficiency (FCR) of broiler bird is usually 2.00-2.75:1 that is average feed conversion efficiency is 2.75:1.

Currently, about 85% private hatcheries produce only broiler DOC (Day-Old Chicks) whereas 15% hatcheries produce both broiler and layer DOC. The broiler parent stock farms are purchasing Parent Stock (PS) DOC both from home (53%) and abroad (47%). The available breeds are Hubbard classic, Cobb-500, Hybro (PN and PG) and Ross (Saleque, 2007). The commercial broiler day-old chicks produced by the parent stock farms and hatcheries are sold to the farms mainly through agents. The quality of chicks varies from hatchery to hatchery and breed to breed. Presently, poultry industry provides a large number of employment opportunities with annual average growth rate of 15-20% in the commercial broiler production. Poultry enterprise having 100-500 birds are consider as small, 501-5000 birds as medium and more than 5000 as large farms. The commercial farms in our country are usually small to medium with some large farm also. These are concentrated mainly around the large cities and semi urban areas and to some extent to the rural areas. There are about 60-70% are the production costs is feed costs. Mainly the feed utilization by the broilers determines the farming profitability. In broiler feed conversion ratio (FCR), feed conversion rate (FCR) or feed conversion efficiency (FCE) is a measure of bird efficiency in converting feed mass increased body mass. Especially FCR is the mass of the food eaten divided by the body mass gain, all over a specified period of time. FCR is dimension less that is there are no measurements units associate with FCR. Birds that have low FCR are considered efficient users of feed. FCR can be measured as:

FCR (Feed conversion ratio) = Total feed intake in kg/Total weight gain in kg

Feed intake and feed conversion efficiency (FCR) are affected by rate of growth of birds; contents of ration, nutrient adequacy of the ration, environmental temperature, health condition of the birds. The meat production depends on mainly FCR. There are about 220 commercial broiler farms present in the Ramu upazilla, Cox'sbazar. Most of the farmers have small to medium size broiler farm with 1000 to 3000 birds. All farmers rear their bird under intensive farming system. They use the vaccination schedule of that hatchery from where the chicks are brought. Farmer use different company feeds such as Advance feed, ACI feed, Nourish feed, Euro feed, Kazi feed, CP feed, Aftab feed etc. in this upazilla. In Bangladesh, there were abundant study was available on broiler parent stocks and the effects on different feed and nutrients for growth of broiler farm. However, very little number of studies is about the FCR on commercial broiler farms. Therefore, the present study was undertaken with the following objectives

1. To know the feed intake of broilers under different commercial feeds (Advance feed, Nourish feed and Euro feed)

2. To know the live weight and live weight gain of broilers.

3. To estimate the Feed Conversion Ratio (FCR) of broilers.

CHAPTHER II: MATERIALS AND METHOD

3.1 Study area and period

This study was conducted at Ramu upazilla in Cox'sbazar district where broiler farming is growing up. Three medium intensive poultry farms were considered for this study. The study was carried out from 15th February to 29th March, 2016.

3.2 Data collection and analysis

The data were collected from record book of Nazim poultry farm, Akter poultry farm and Absar poultry farm. These three farms used Advance, Nourish and Euro feed respectively. They procured the day old chicks from hatchery. After purchasing the chicks they were reared this broiler under intensive management system up to market. The live weight of chicks was recorded at day old and every week up to 4 weeks of age. Feed intake and live weight gain of each flock were recorded weekly to know the average feed intake and weight gain of the broilers. Feed Conversion Ratio (kg feed/kg wt. gain) was calculated by dividing feed intake with body weight gain (Mwale *et al.*, 2008).

CHAPTER III: RESULTS AND DISCUSSION

3.1 Live weight and live weight gain

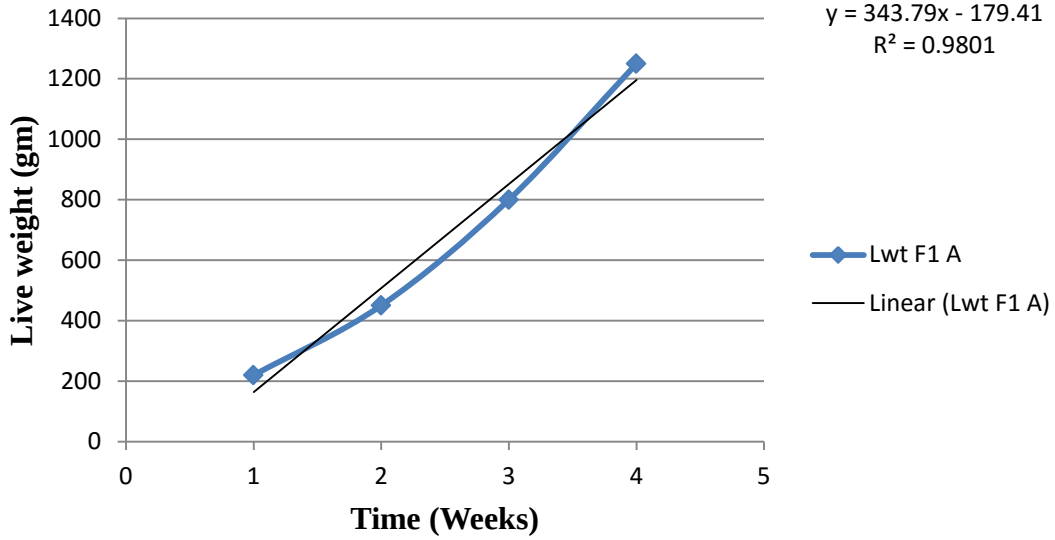
The live weight and live weight gain of broilers under 3 intensive farms who used Advance, Nourish and Euro feed respectively are presented in table 1 and the rate of weight gains (time vs. live weight) are shown in graph-1, graph-2 and graph 3 correspondingly. All 3 graphs shows that live weight of broilers were gradually incline with the increase of age in all farms. The R^2 values were very high (graph 1, 2 and 3), which indicated the weight gain of broilers were steady and good fitted with the liner regression. From this table 1, it was seen that the broilers of all 3 farms were increased live weight with the increases of age. The differences of live weight among three farms may cause the differences for nutrition, management, breeds and age effects of the broilers. Similar factors were reported by other researchers (Saleque, 2007). From the table it was shown that highest body weight was recorded from Absar poultry farm (1650.81 gm/bird) who used Euro feed and lowest body weight in the Nazim poultry farm (1249.58 gm/bird) who used Advance feed after 4 weeks of age. From the table-1, it could be seen that weight gain of broilers in each farms were gradually increase with increase of age. The result was supported by (Hossain *et al.*, 2006) but somewhat varies from (Roy *et al.*, 2006). The overall body weight gain of the Farm-1, Farm-2 and Farm-3 were 312.39 gm/bird, 375.11 gm/bird and 412.75 gm/bird respectively.

This study conducted that the live weight of commercial broiler at 4^{th} weeks of age in Farm-1, Farm-2 and Farm-3 are 1249.58 gm/bird, 1500.42 gm/bird and 1650.81 gm/bird which are varies from the research of (Shahidullah *et al.*, 2008) who found that the live weight of commercial broiler at 4^{th} weeks age is 1450 gm/bird but the study found higher body weight than the report of (Sarkar *et al.*, 2008) who reported 1200 gm/bird at 4^{th} weeks of age.

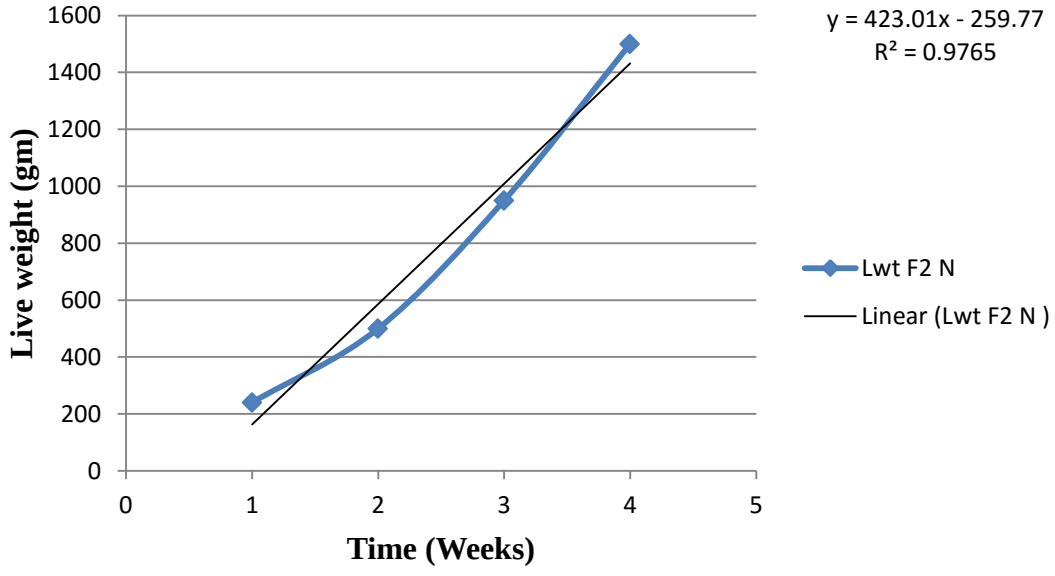
Table 1: Effect of live weight and weight gain of broilers in different farms

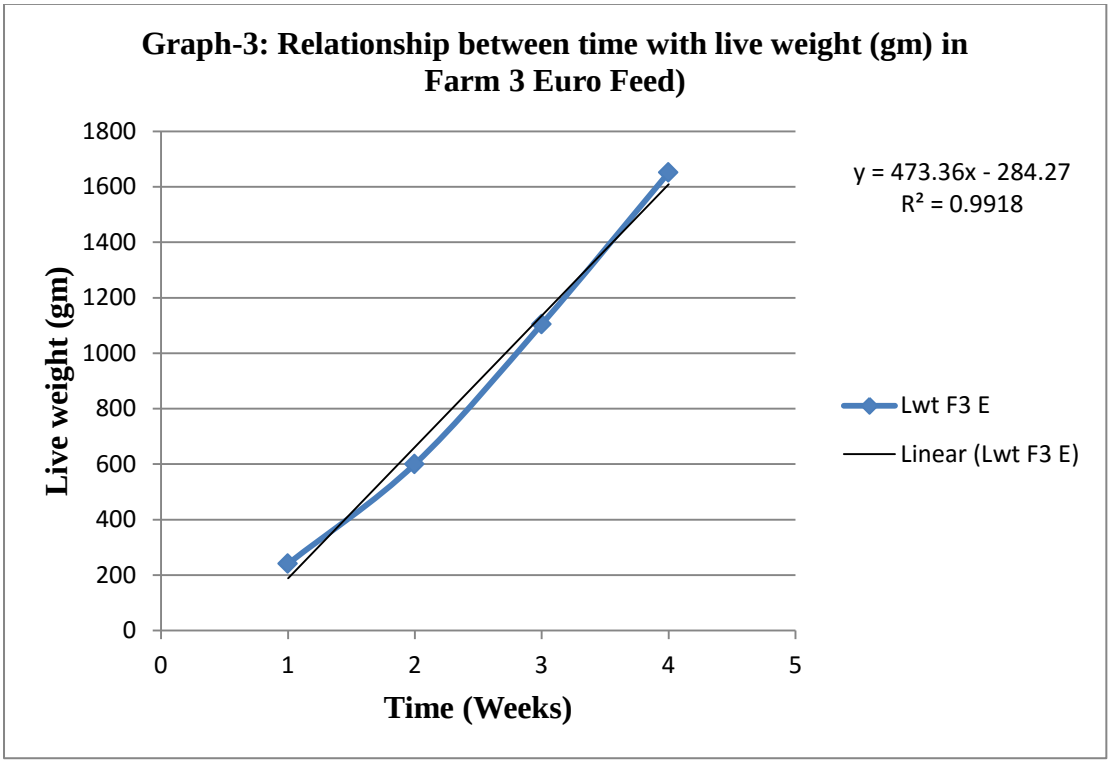
	Mean Live Weight of birds/wk (gm)			Mean live weight gain of birds/wk (gm)		
Age (wks)	Farm 1 (Advance Feed)	Farm 2 (Nourish feed)	Farm 3 (Euro feed)	Farm 1 (Advance Feed)	Farm 2 (Nourish feed)	Farm 3 (Euro feed)
Day old	39.9±0.961	39.87±1.449	40.18±1.207			
1st	220.12±2.566	240.43±3.069	240.99±3.041	180.22±2.361	200.56±2.628	200.81±2.678
2nd	450.53±2.983	500.02±3.159	600.3±3.603	270.31±4.809	299.46±4.103	399.49±5.178
3rd	800.03±3.704	950.14±3.353	1104.47±3.545	349.5±3.493	450.12±6.046	504.34±5.144
4th	1249.58±5.480	1500.42±4.142	1650.81±4.679	449.55±7.394	550.27±6.570	546.34±5.14462

Graph-1: Relationship between time with live weight (gm) in Farm 1 (Advace Feed)



Graph-2: Relationship between time with live weight (gm) in Farm 2 (Nourish Feed)




Graph-3: Relationship between time with live weight (gm) in Farm 3 Euro Feed)
Live weight (gm)
1800
1600
1400
1200
1000
800
600
400
200
0
0
1
2
3
4
5
Time (Weeks)
y = 473.36x - 284.27
R² = 0.9918
Lwt F3 E
Linear (Lwt F3 E)

3.2 Feed intake and feed conversion ratio

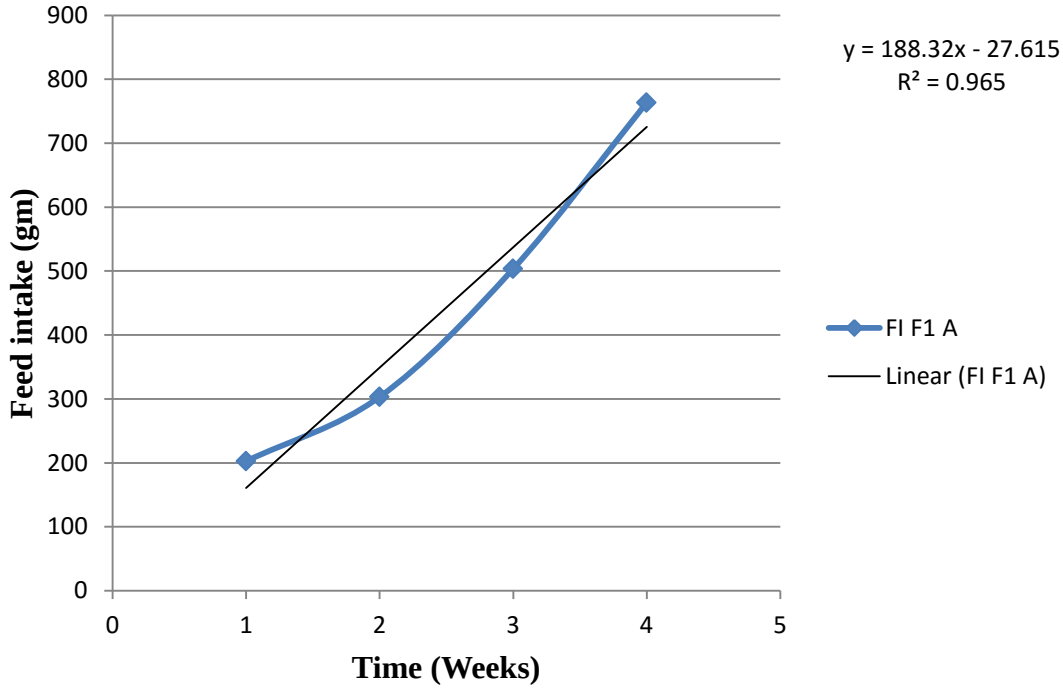
The average weekly feed intake and feed conversion efficiency (FCR) of broilers under 3 intensive farms who used Advance, Nourish and Euro feed respectively are presented in table 2 and the rate of feed intake (time vs. fed intake) are shown in graph-4, graph-5 and graph-6. The graphs show that feed intake of broilers was gradually incline with the increase of age in both farms. The higher R^2values indicated that the feed intake of broilers was good fitted with the linear regression. From this table 4, it was seen that the broilers of Farm-1, Farm-2 and Farm-3 were increased feed intake with the increases of age. However, the broilers of Farm-3 showed higher feed intake than other 2 farms but at 4^{th} weeks of age Farm-2 showed more feed intake (914.1 gm/bird) than Farm-1 (763.53 gm/bird) and Farm-3 (874.92 gm/bird). These differences may cause the differences for nutrition, management, breeds and age effect. Similar factors were reported by (Saleque, 2007). The table-2 shows the feed intake of broilers at 4^{th} of age, among the three farms where highest feed intake was recorded at Aktar poultry farm (Nourish feed, 914.1 gm/bird) and the lowest at Nazim poultry farm (Advance feed, 763.53 gm/bird). From the table-2, it could be seen that FCR of broilers in each farms were gradually incline with increase of age. That indicates that with the increase of age the broiler consume higher amount of feed that conversion into meat. The overall feed conversion efficiency of the Farm-1, Farm-2 and Farm-3 were 1.69:1, 1.66:1 and 1.60:1 respectively. Among them highest FCR was found in Nazim poultry farm and lowest in Absar poultry farm.

This study found that the FCR of broilers in Farm-1, Farm-2 and Farm-3 are 1.69:1, 1.66:1 and 1.60:1 respectively at 4^{th} weeks age which are less than the research of (Goliomytis *et al.,* 2003) who found the FCR 1.78:1. Sarkar *et al.,* 2008 reported that the FCR of commercial broiler is 1.62:1 at 28 days but this study found that the FCR of commercial broilers are 1.69:1, 1.66:1 and 1.60:1 at 28 days whereas Farm-1 and Farm-2 shows higher and Farm-3 presents lower FCR than (Sarkar *et al.,* 2008)

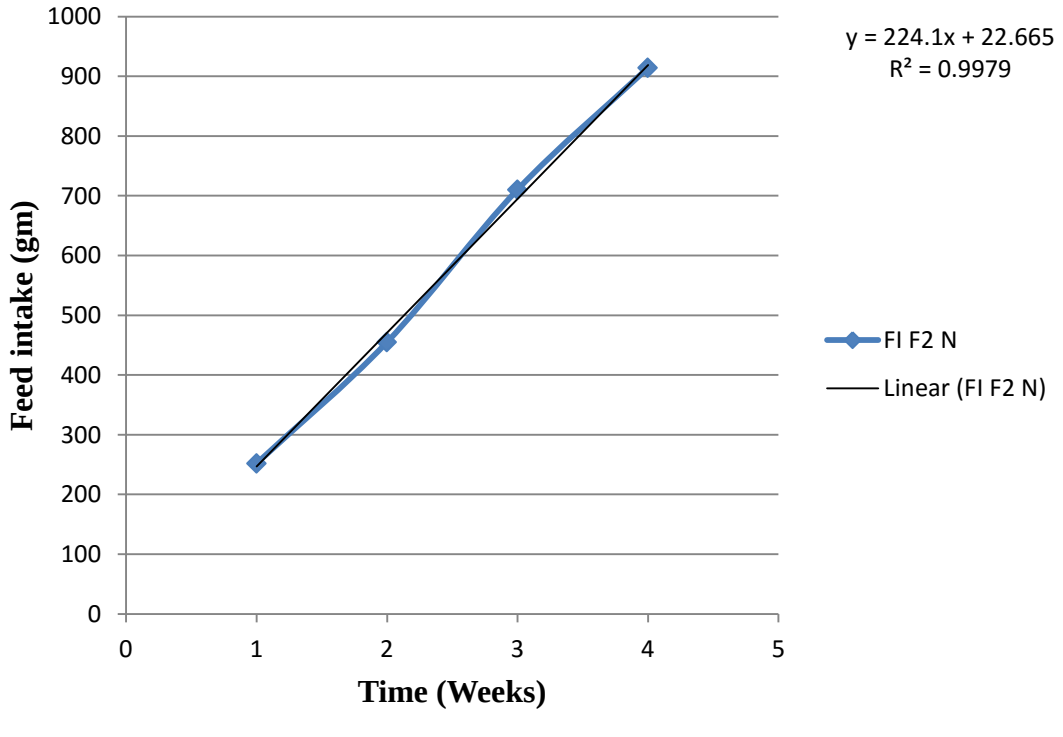
Table 2: Effect of feed intake and FCR on different farms

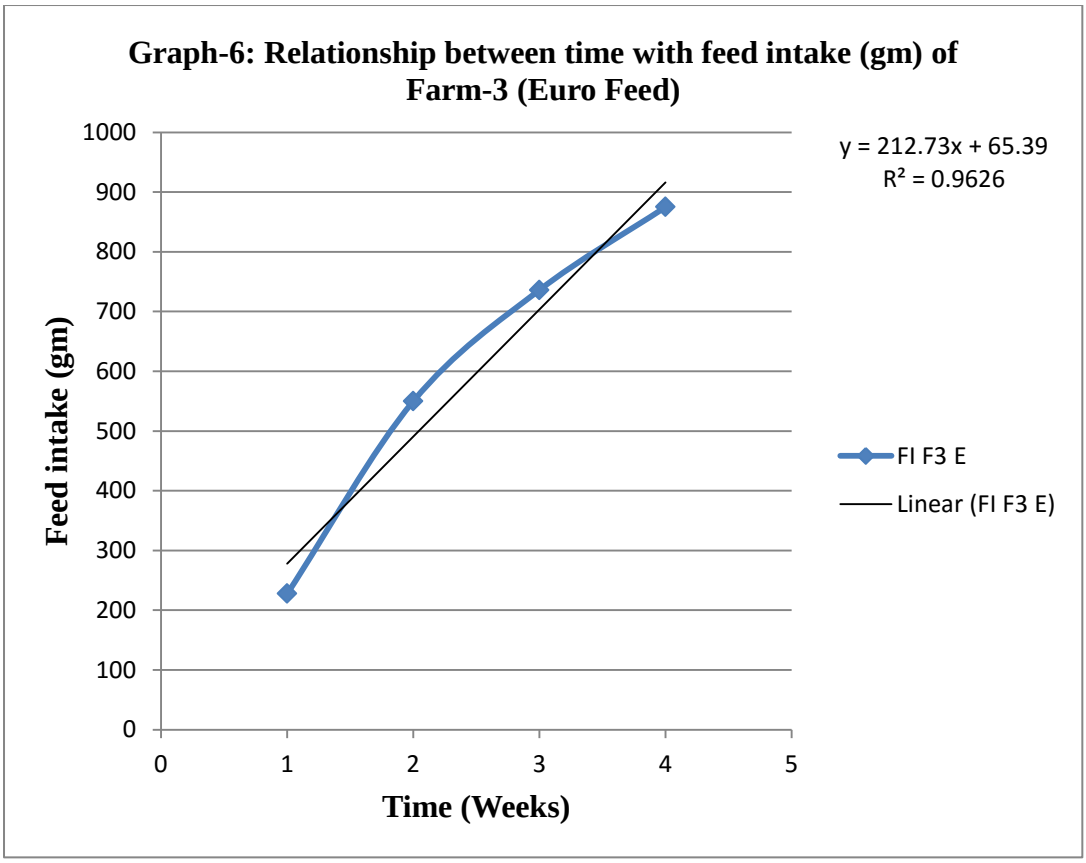
	Mean Feed intake of birds/wk			FCR		
Age (wks)	Farm 1 (Advance Feed)	Farm 2 (Nourish feed)	Farm 3 (Euro feed)	Farm 1 (Advance Feed)	Farm 2(Nourish feed)	Farm 3 (Euro feed)
1st	202.55±1.036	252.14±1.357	227.83±0.958	1.124	1.257	1.134
2nd	303.2±2.142	455.15±1.111	550.04±1.770	1.121	1.521	1.377
3rd	503.49±1.105	710.31±1.199	736.07±0.982	1.441	1.578	1.460
4th	763.53±0.899	914.1±0.648	874.92±0.988	1.699	1.661	1.601

Graph-4: Relationship between time with feed intake (gm) of Farm-1 (Advance Feed)



Graph-5: Relationship between time with feed intake (gm) of Farm-2 (Nourish Feed)




Graph-6: Relationship between time with feed intake (gm) of Farm-3 (Euro Feed)
Feed intake (gm)
1000
900
800
700
600
500
400
300
200
100
0
0
1
2
3
4
5
Time (Weeks)
y = 212.73x + 65.39
R² = 0.9626
FI F3 E
Linear (FI F3 E)

CONCLUSION

Feed conversion ratio (FCR) is affected by the intake of feed, rate of growth of birds, contents of ration, efficiency of feed, nutrient adequacy of the ration, management of poultry, environmental temperature, health condition of the birds. The meat production depends on mainly FCR. FCR increased with the age. Problems of FCR represent a real waste to the broiler farmer and have a significant economic impact. Any factor which reduces the feed intake, growth or health of the broiler will worsen flock FCR. Correcting FCR problem requires communication and coordination across the whole production unit, from manufacture to farmer and processor. Euro feed gives good result in compare to other two feeds. It has lower FCR (1.60:1) and higher weight gain (1650.81 gm/bird) than remaining two feeds.

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My Goal

As a human being, I have a long cherished dream to serve my nation through my knowledge, creativity and profession. As a veterinarian, I think I have a great opportunity to fulfill my dream by developing my career in the field as a veterinary practitioner. By dealing as a veterinary surgeon, I would be able to expand and spread my knowledge also.

I have also a high interest in Medical Research, Wildlife Conservation and Eco health approach.