

**A cross sectional study on beef fattening programme conducted in
selected areas of Bangladesh**



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Session: 2016-2017

**A production report submitted to partial satisfaction
of the requirements for the degree of**

Doctor of Veterinary Medicine

Faculty of Veterinary Medicine

Chattogram Veterinary and Animal Sciences University

Khulshi, Chattogram, Bangladesh

August 2022

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selected areas of Bangladesh**



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August 2022

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List of Acronyms Symbols Used

Abbreviation	Elaboration
%	Percentage
etc.	Et cetera
No.	Number
SSC	Secondary School Certificate
HSC	Higher Secondary School Certificate
UMS	Urea Molasses Straw
UTS	Urea Treated Straw
UMMB	Urea Molasses Multinutrient Block

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Abstract

The experiment was conducted to investigate the livelihood improvement of farmers through cattle fattening in six selected areas named Saidpur, Kishorgonj and Nilphamary Sadar Upazilla under the district of Nilphamary, Madhukhali and Faridpur Sadar under the district of Faridpur and last one is Daulodia Upazilla under the district of Rajbari of Bangladesh. Total 60 respondents consisting male and female were randomly interviewed those are involved in cattle fattening. An open and close ended questionnaire was used for collecting the data through face to face interview. I collected the data regarding socio- economic status of the beef cattle owner, general characteristics of the fattened cattle, their feeding and health management. The maximum number of beef fattened farmer is male (55%) and female beef fattened owner is 45%. The highest number of farmers involved in beef fattening are between 36-40 years which is 26.67 percent. Among the respondents, 60% owner completed their primary education whereas only 1.67 percent were post-graduated. About 50.82 percent farmer had taken training on beef fattening and rest of the portion did not have any training on. Local breed those were uncastrated, between 2.1-2.5 years old and reddish color were predominantly selected for fattening programme. Maximum beef cattle (89 percent) were vaccinated whereas 11 percent were not vaccinated. Among four types of commonly used vaccines, FMD vaccine was mostly given to all of the beef cattle. Most of the farmers offered their beef cattle 1-5 kg green roughage (44%). Almost 49% farmer did not give readymade feed but they offer homemade feed and commonly used feed ingredients was wheat, wheat bran, rice polish. Nobody used steroids drug but most of them used feed supplements such as zinc, aminovit, liver tonic, DCP and multivitamin. Around 25% cattle fed UMS but farmer didn't supply UTS and UMMB. Most of the beef cattle were purchased from local market (78%) and some of the farmers selected beef cattle from own farm (22%). The highest number of beef cattle selling through local market and others through online, middle man and directly from farm. Most of the fattened cattle (52%) was sold between 100000 to 200000 taka which makes the owner profitable. Therefore, beef fattening programme can be a profitable business in Bangladesh.

Key words: Beef fattening, socio-economic status, feeding management, Bangladesh

Chapter 1: Introduction

In Bangladesh huge number of farmers including small scale and large scale are started bull fattening just before 3 or 4 months of Eid-UI-Adha, when they sell the animals with profitable prices. In our country, about 80 to 85% of the household's rear livestock in rural areas but they have poor socio-economic condition (**Hossain et al., 2004**). Livestock plays an indispensable role in agriculture and improve the economic condition of Bangladesh (**Haq, 1992**). Bull fattening before Eid-UI-Adha now becoming very popular in our country, that's why many youth persons are engaged themselves in bull fattening and remove their poverty. The present population of livestock in Bangladesh consist 245 lakh cattle, 15 lakh buffalo, 79 lakh sheep and 266 lakh goats (DLS, 2020-2021). Bull fattening is an appropriate tool for poverty alleviation and improvement in food security among the people (**Maikasawa et al., 2012**). Cattle fattening helps to fulfill protein demand and plays a great role in (a) Increase food production (b) Enhance food security (c) Remove poverty line (d) Create the opportunity for youth (e) Decrease the unemployment problem (f) Providing draught power (g) Manure use as bio-gas production.

Besides selling milk, nowadays dairy farmers are also involved in beef fattening specially before Eid-UI-Adha (Muslim festival). For the large population of our country and to fulfill their protein demand beef fattening have a promising future. That's why beef fattening is important in our country for fulfil the demand of animal protein. However, household and large-scale farmers are faced many problems for rearing their beef cattle due to high prices of commercial feed. Farmers in the rural area are not follow the scientific method of beef fattening (**Pandit, 2005**). They reared their beef cattle in traditional ways. Indigenous knowledge of beef fattening such as offer straw by chopping, mixing of green grass with chopping straw, mixing of rice polish with chopping straw (Rahman et al., 1998). Lack of grazing land due to our high population, farmers reared their cattle in intensive system. This is one of the major problems in context of beef fattening because all feed substance is provided artificially. At present in rural areas farmers offer commercial feed of their beef cattle but not in proper amount according to body weight. Some farmers are buying feed ingredient and offer animal by mixing together by dint of readymade commercial feed.

In Bangladesh, farmers faced many problems for selling their fattened cattle. Farmers are selling their beef cattle by different marketing channel. Marketing channel means the alternative routes by which product reach to the customer (**Kohls and Uhl, 1980**). Farmers marketing their cattle by different stages through intermediaries who linked the farmers of fattened cattle with ultimate customer. Main intermediaries are "Dalal" who's main job is bringing the buyers and seller together and help in bargaining. Finally deal take commissions from both buyer and seller. Farmers are not aware about vaccination especially in rural areas that's why disease outbreak is another threat for beef fattening

farmers. Disease outbreak may hamper the health and deteriorate the live body weight. Among many disease FMD is the serious disease that may lead to deteriorate the body weight of beef cattle. Beef cattle fattening has become a profitable business of the farmers. Both villager and urban farmer associated with cattle fattening program for increasing their livelihood. Straw is the important crop residue of tropical and sub-tropical countries. Major portion of fibrous part of the diet of the ruminant are fulfill by rice straw. Farmers in the rural areas use rice straw of traditional verities. Most of the farmers offered their beef cattle rice straw in different ways by mixing with other feed substance like as chopping the straw and mixed with rice husk, chopping straw mixed with green grass, chopping straw mixed with wheat bran and fresh water. They also use green grass, wheat and rice bran, molasses and locally available resources such as vegetable by-products, rice gruel, boiled rice, oil cake etc. for cattle fattening. Rural farmers may not contain available land to cultivate fodder for their beef cattle. The fodder produced in every year in Bangladesh which is very scant from required amount (**Saadullah, 1991**). Rural farmers mainly offered their cattle roadside grass and rice straw is basal feed for their beef cattle. The acute shortage of feeds and fodder has been identified a principal constraint to optimum livestock production in Bangladesh (**Saadullah, 1995**). All respondents use feed additive for their beef cattle due to different kind of feed additive are imported by pharmaceuticals companies and marketing agencies that attract farmers to use them in fattening animals.

1.1. **Objectives:** The study was conducted for following reasons:

- I. To find out the beef fattening farmer's socioeconomic status in Bangladesh.
- II. To know the present situation of the feeding and health management of the beef cattle.
- III. To identify the problems faced by farmer regarding fattening programme.

Chapter 2: Materials and Methods

2.1 Study area: The study was carried out for periods of 6 months. The data was collected from large scale farmers and household farmers in Saidpur upazilla, Kishorgonj upazilla and Nilphamari Sadar under the Nilphamari district and also data was collected from Madhukhali Upazilla, Faridpur Sadar under the district of Faridpur and last one Daulodia upazilla under the Rajbari district.



2.2 Data Collection:

The survey was completed with a pre-structured questionnaire based on farm level epidemiological data through face-to-face interview and observation preparation of a standard questionnaire. Data was collected by face to face interview method with respondents. Interviews were normally conducted on the farms and respondents house during their leisure time.

2.3 Preparation of Standard Questionnaire:

A standard questionnaire was designed and prepared for collecting data in details keeping the views of objectives of the livelihood improvement of farmers through cattle fattening in selected areas of Nilphamary, Rajbari and Faridpur districts of Bangladesh. Following qualitative and quantitative parameters were collected during the study period:

- Socio-economic status of the farmers
- Type of beef breeds
- Animal source for beef fattening
- Feeding Management system of the farm
- Disease among the cattle
- Vaccination and Anthelmintic status of the cattle
- Problems identification during rearing and marketing

Chapter 3: Results

3.1: Socio-economic status and beef fattening experience of the farmer: The socio-economic status included age, sex, educational qualification, monthly income, previous experience of beef fattening is shown in table 1. Table 1 illustrates that maximum farmer were in age category between 36-40 years (26.67%), minimum farmer was in age category between 46-50 (6.67%). Among the farmers 60% were primary educated, 13.33% were SSC, 11.67% were HSC, 13.33% were graduation and 1.67% were postgraduation. Among the respondents 100% were experienced of beef fattening. Of the farmers 55% were male and 45% were female.

Table 1: Socio-economic status and beef fattening experience of the farmer (n=61)

Variables	Category	Frequency	Percentage (%)
Sex	Male	33	55
	Female	27	45
Age (Years)	25-30	6	10
	31-35	14	23.33
	36-40	16	26.67
	41-45	15	25
	46-50	4	6.67
	51-65	5	8.33
Education status	Primary School (level 1-5)	36	60
	Secondary school (SSC) (level 6-10)	8	13.33
	Higher Secondary School (HSC) (level 11-12)	7	11.67
	Graduation	8	13.33
	Post-graduation	1	1.67
Monthly income (Tk/month)	10,000-20,000	9	15
	21,000-30,000	21	35
	31,000-40,000	11	18
	41,000-50,000	6	10
	51,000-60,000	4	6.67
	61,000-70,000	1	1.67
	71,000-80,000	3	5
	1,00,000 - >100,000	5	8.33
Previous experience of beeffattening	Yes	61	100
	No	0	0

Period of training (Days)	3	19	31.15
	30	2	3.28
	Above 365	9	14.75
	No	31	50.82

3.2 Information about breed, age, color, body weight and castration status of the beef cattle:

Most the farmers select local breed almost 81% for beef fattening in rural areas and rest of the portion is cross breed. The color of breed selected by farmers is highest proportion is reddish color (43%) and lowest is brown color (1%). Most of the respondents select the beef cattle between the age of 2.1 to 2.5 years (43%) and initial weight 151 to 250 kg (38%). After completing the beef fattening period, the highest proportion of final body weight was 150 to 250 kg (42%) and middle proportion was 251 to 350 kg (32%). Among the all respondents all are selected uncastrated bull that is 100%.

Table 2: General information including breed, age, color, body weight, and castration status of the beef cattle (n=100)

Variables	Category	Frequency	Percentage (%)
Breed	Cross	19	19
	Local	81	81
Color	Reddish	47	47
	Black	19	19
	Gray/Ash	15	15
	Black and White	14	14
	White	3	3
	Black and Red	1	1
	Brown	1	1

Age (Years)	1.5-2	23	23
	2.1-2.5	43	43
	2.6-3	30	30
	3.1-3.5	4	4
Castration status	Castrated	0	0
	Uncastrated	100	100
Initial weight (kg)	100-150	34	34
	151-200	38	38
	201-250	19	19
	251-300	4	4
	301-350	3	3
	>500-1000	1	1
	>1000-1500	1	1
Final weight (kg)	150-250	42	42
	251-350	32	32
	351-450	20	20
	451-550	3	3
	551-1000	2	2
	>1000-1500	1	1

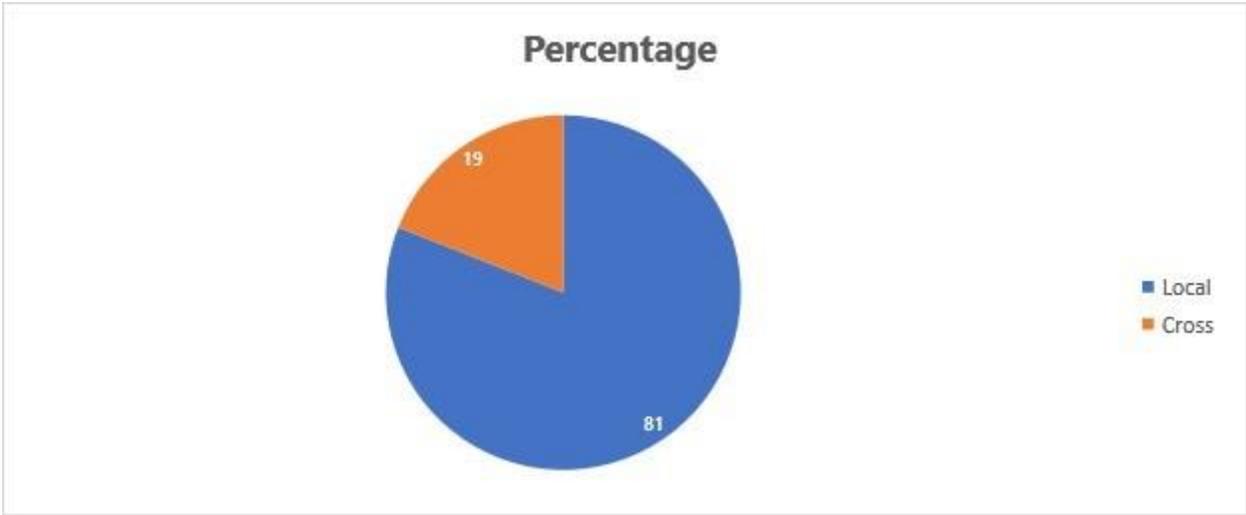


Fig-1: Breeds of cattle

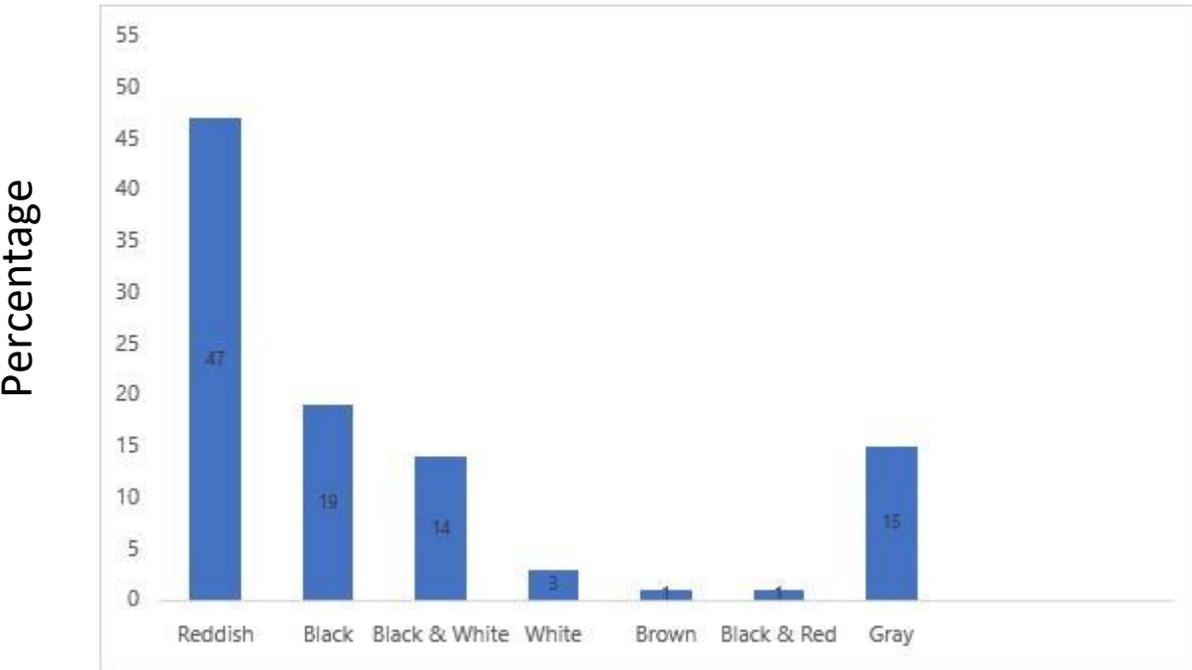


Fig-2: Body color of beef cattle

3.3: General management of the beef cattle farm:

In table 3, The highest amount (78%) of beef cattle purchases from local market and rest of the portion selected from own farm. Beef fattening period varies from farmers to farmers ad its ranges from 3 to 7 months. The highest beef fattening period is 4 months (31%) and lowest is 6 months (1%). About 29% beef cattle selling through online and local market, 28% through online, 23% through local market, middle man and from farm. Beef cattle was sold mostly in between 100,001-200,000 taka which is 52%. Almost all of the house was made by concrete.

Table 3: Farm management procedures of the cattle for fattening

Variables	Category	Frequency	Percentage (%)
Source of the beef cattle purchase	Local market	78	78
	Own farm	22	22
Period of fattening (months)	4	31	31
	7	28	28
	3.5	12	12
	3	9	9
	5	9	9
	4.5	5	5
	8	5	5
	6	1	1
Places of selling beef cattle	Online and local market	29	29
	Online	28	28
	Local market, middle man, farm	23	23
	Local market	20	20
Selling price of the beef cattle(Tk/animal)	60,000-70,000	12	12
	71,000-80,000	13	13
	81,000-90,000	12	12
	91,000-100,000	8	8
	100,001-200,000	52	52
	200,001-300,000	1	1
	>300,000-800,000	2	2
Housing	Face in	50	50
	Face in and face out	33	33
	No stanchion barn (singerow)	17	17
Floor of the house	Concrete	100	100
	Soil and mud	0	0

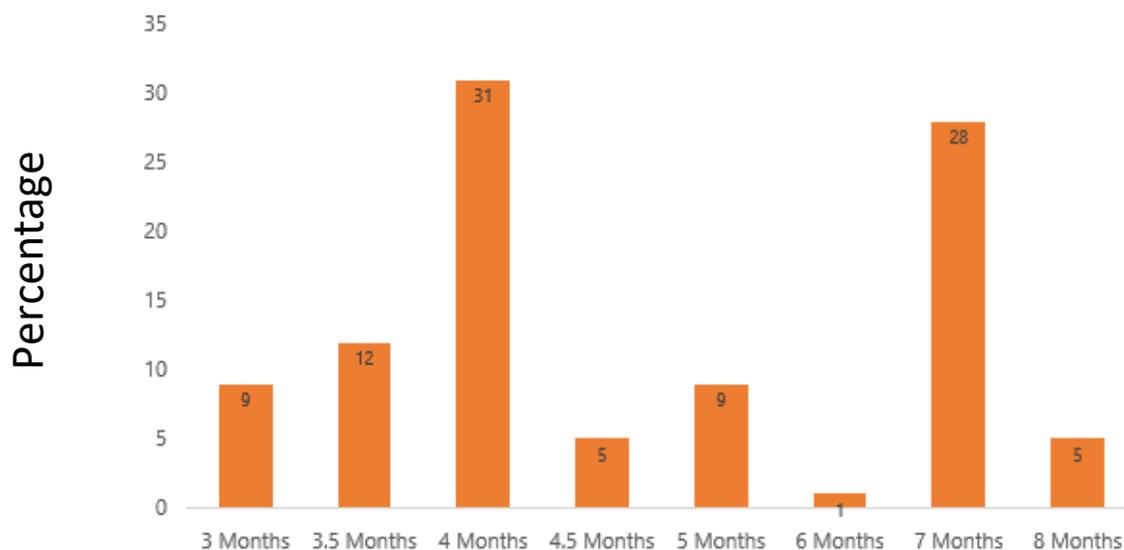


Fig-3: Beef fattening period

3.4: Feeding management of the beef cattle:

Among the 100 beef cattle, 44% cattle are given 1-5 kg green roughage that is highest and 2% cattle given 40 kg green roughage. In case of dry roughage, 32 % beef cattle offered and 68 % beef cattle is not offered. Beef cattle offered 0.5 kg readymade feed which is highest proportion (21%) and 2.5 kg per cattle which is lowest (1%). In case of homemade concentrated 30% cattle are given 1 kg feed daily and given proportion is 5%. Only 20% cattle offered silage among the 100 cattle, 29 % cattle offered UMS and no one respondents offered their cattle UMMB and UTS. Mostly used homemade ingredients (35%) is wheat, wheat bran, broken maize, lentils powder.

Table 4: Feeding management of the beef cattle

Variables	Category	Frequency	Percentage (%)
Green roughage (kg/day)	1-5	44	44
	6-10	3	3
	11-15	36	36

	16-20	2	2
	21-25	4	4
	26-30	4	4
	40	2	2
	Not given	5	5
Dry roughage (straw_ kg/day)	12	32	32
	Not given	68	68
Readymade feed (kg/day)	0.5	21	21
	1.5	3	3
	1	7	7
	2.5	1	1
	2	19	19
	Not given	49	49
Home-made concentrated feed (kg/day)	1	30	30
	3	22	22
	4	31	31
	5	4	4
	>5-10	8	8
	Not given	5	5
Home-made feed ingredients	Broken maize, wheat bran, rice polish	35	35
	Maize, Rice polish, Rice bran, Wheat bran, Mustard oil cake, soya bean meal, DCP, Molasses, Salt	15	15
	Wheat, Wheat Bran, Broken Maize, Lentils powder	28	28
	Wheat bran, Rice bran	8	8
	Wheat Bran, Rice Bran, Mustard oil cake/lentil, chickpea	7	7
	Wheat bran	2	2
	Not given	5	5
Silage (kg/day)	10	20	20
	16	9	9
	Not given	71	71
UMS (Kg/day)	1	29	29
	Not given	71	71
UMMB (Kg/day)	Yes	0	0
	Not given	100	100
UTS (Kg/day)	Yes	0	0
	Not given	100	100

3.5: Health management of beef cattle:

For health management most the respondents given FMD vaccine which is 55%, 31% given (FMD Anthrax and BQ) and 11% respondents not given any kind of vaccine. Around 44% cattle offered feed supplement which is highest and the feed supplements are catophos, liver tonic, zinc, multivitamin and DCP Whereas 31% cattle not offered any kind of feed supplement for fattening. Among the respondents, nobody used steroid drug for fattening their cattle. Among the respondents 62% were taken incentive from DLS (Anthelmintic, vaccine and primary treatment) and 38% respondents did not taken incentive from DLS.

Table 5: Health management of the beef cattle

Variables	Category	Frequency	Percentage
Vaccination	FMD	55	55
	FMD, Anthrax	3	3
	FMD, Anthrax, BQ	31	31
	No	11	11
Medication	Yes	100	100
	Not given	0	0
Feed supplements	Catophos, liver tonic, DCP	44	44
	Catophos, Multivitamin, Zinc, Liver tonic	8	8
	Zinc, Liver tonic	8	8
	zinc, Burga vet	2	2
	Zinc, Aminovit	2	2
	Zinc, Liver tonic, AD3E	2	2
	Zinc, AD3E	1	1
	Zinc, Liver tonic, Catophos, Aminovit	1	1
	Zinc, liver tonic, Catophos	1	1
	Not given	31	31
Steroid Drugs	No	100	100
	Yes	0	0
Incentive from DLS	Anthelmintic, Primary treatment	33	33
	Anthelmintic, vaccine	29	29
	No	38	38

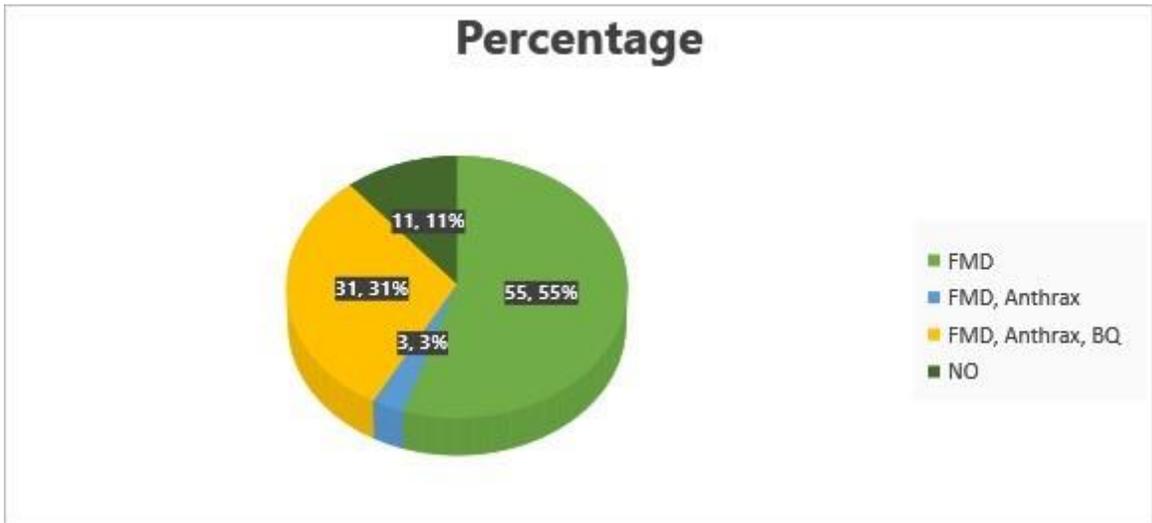


Fig-4: Vaccination of beef cattle

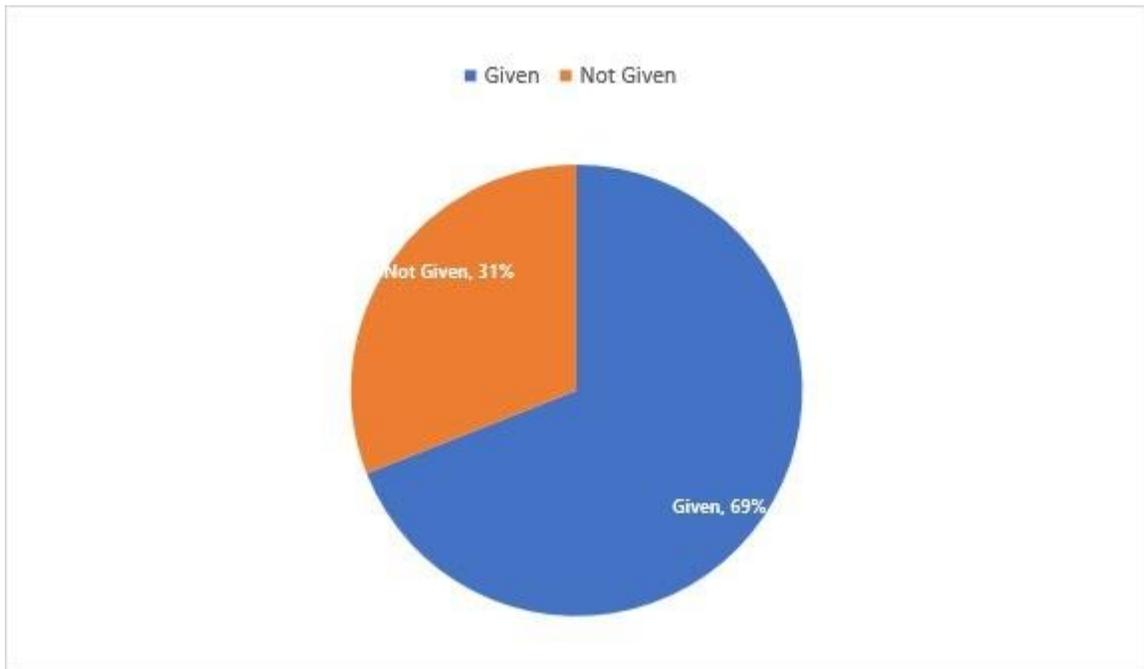


Fig-5: Percentage of using feed supplements

Chapter 4: Discussion

Curry (1996) stated that in order to come up with recommendation for specific strategies of improve management of beef cattle and to predict the effect of improved production system on the livelihood of livestock keepers, it is important to first understand the socio-economic factors driving household members to undertake this enterprise. Table 1 illustrate that average age category of farmers between 36-40 years that is almost similar to Hossain et al. (2002) where he found that the average age of the farmers 27 to 40 years. The maximum respondents are lies between 36-40 years because in this stage of age people engaged in government or non- government service and some of developed own business that's why they have money to developed farming. Under the age of 25 in context of Bangladesh people are not enough money or financial support to build up farming. Among the respondents 60% are primary level educated that are nearly similar result with Hossain et al. (2016). Currently in rural area, primary educated and secondary level educated people are become attracted in beef fattening, this result is differed from Rahman et al. (2012) reported that higher educated (graduation) people are attracting towards beef fattening then before. Female respondents are mostly didn't complete their secondary education because of their early marriage. Due to early marriage, they didn't get chance to receive higher education. Most of the farmers (55%) are male and female farmers is lower in beef fattening which is similar with Islam et al. (2012).

Rural farmers selected local breed for beef fattening (81%) and only 19% is crossbreed. Rural farmers thought that the crossbreed beef cattle require more feed and more space for rearing and also a wrong idea grew in themselves that crossbreed cattle are more affected in disease rather than local beef cattle. From this point of view, they are select local breed for fattening. In this study, most of the farmers fattened cattle 4 months before Eid-UI-Adha that are differed from Rashid et al., (2017) result of beef fattening study. In case of Bangladesh most the respondents start beef fattening to focuses on the Eid-UI- Adha due to high demand of beef cattle on this time. This point of view most of the respondents buying beef cattle and rearing before 4 months of Eid-UI-Adha. In case of training, 49% respondents had cattle fattening training and 51% respondents had not any training on cattle fattening and corroborated with earlier findings (Ahmed et al., 2010., Rahman et al., 2012., Islam et al., 2012). The number of non-trained beef fattened farmers is high due to their lack of proper awareness because every year government and also non-government organization has arrange different programme about beef fattening and created different training facilities on beef fattening. Islam et al. (2012) reported that 80.7% farmers selected uncastrated bull for fattening andrest of the portion is castrated but in this study all the farmers selected uncastrated bull (100%) forfattening. All the respondents both higher and lower educated beef fattening farmers nobody selectcastrated bull for fattening purpose due to local people are prefer uncastrated bull for their sacrifice.For a period of time people continued this practice and they always select uncastrated one for their sacrifice and they also treated the castrated bull as a deformity because lack of scrotum. That's why all respondents select uncastrated bull for beef fattening.

In the study area, the respondents found using urea molasses straw technology to fatten their cattle which was only 3.3% that mean 29 cattle offered UMS among the 100 beef cattle. Among many problems, cattle feed is the greatest problem for beef fattening. This result of this study differed from Ali and Anwar (1987) where they found that shortage of animal feed was the greatest problem for the farmers for rearing beef cattle. Different kind of problem facing by beef fattened farmers such as lack of proper marketing system, lack of credit facilities, dalal, middle man, price variation in different market and disorganized marketing system. This result is also similar to Hashem et al., (1999). Above this reason farmers are cheated during selling of their beef cattle. All the respondents of Faridpur and Rajbari districts, they offer their cattle plenty of green grass because farmers of this region cultivated more fodder even they are plant green fodder both side of the road. Farmers use concrete floor (100%) because it is suitable for drainage and also for cleaning. Farmers are not used soil and mud floor due to different problems. They said that soil and mud floor is not suitable for beef cattle due to cleaning problem, the floor become muddy and urine is not easily drainage. Most of the farmers reported that concrete floor without bedding material is injurious for health and this result similar with Coenn (1980). Mamaton (1987) reported that concrete floor without bedding material is causes leg injury. About 89% farmers practiced vaccination regularly to their beef cattle which differed from Mamun et al. (2018) reported that 26.75 % farmers practiced vaccination and 73.3% farmers didn't practiced vaccination. Among the respondents no one practiced steroids drug for beef fattening programme that is not similar with Rahman et al. (2012) who reported that 34.7% farmers use beef fattening tablets. Farmers not use steroid drug due to they know about the bad effect of steroid drug and buyer also identified which cattle are treated by steroid drug. That's why farmers not use steroid drug for fattened their cattle. From this study more than 50% respondents reported that feed is not available. The result of this study agreed with Rahman et al. (2001) where 70% respondents reported that feeds are not available. Although most of the farmers were trained and time consuming. They apply conventional knowledge for fattened their cattle (Rahman et al., 1998). Beef cattle are selling through online 28%, middle man 23%, local market 29% and also from farm. Selling the beef cattle are completed through bargaining. In the process of beef cattle how to prepare UMS, UTS and UMMB but they did not practice because they think that it is difficult marketing middle man and butchers are involved which agrees with Rashid (1996).

Chapter 5: Conclusion

Nowadays, beef fattening programme become more popular due its profitability and short time rearing with few capitals for starting this fattening programme. If proper training of the farmers, optimum cost of feed and proper marketing channel can be provided then it became a great option for reducing unemployment and poverty as well as fulfilling protein demand for the people of our country.

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Acknowledgement

All praises are due to “Allah” who has created everything of the nature and who enable me to complete this study. I feel great pleasure to express my deepest sense of gratitude and indebtedness to my supervisor Dr. Priunka Bhowmik, Assistant Professor department of Animal Science and Nutrition, Chattogram Veterinary and Animal Sciences University for his scholastic guidance, valuable suggestion, constant inspiration and encouragement throughout the entire period of my study.

I would like to express my deep sense of gratitude and thanks to Vice Chancellor, Professor Dr. Gautam Buddha Das, Professor Dr. Alamgir Hossain, Dean, Faculty of Veterinary Medicine, Chattogram Veterinary and Animal Sciences University. I would like to express my special gratitude and love to my 22 Batch, Faculty of veterinary Medicine, Chattogram Veterinary and Animal sciences university.

Biography

I am Mahafuzul Alam, from Nilphamary. I passed Secondary School Certificate in 2014 (G.P.A-5.00) and Higher Secondary Certificate examination in 2016 (G.P.A-5.00). I am a student of 22 Batch and now I am an intern student under the faculty of Veterinary Medicine in Chattogram Veterinary and Animal Sciences University. In future I would like to a field Veterinary Practitioner.