



Study on Different Hormones and Feed Additives Used for Cattle Fattening in Mymensingh District

M. A. Rashid, A. S. S. Hossain, A. Roy, T. Hossain and M. M. Hossain*

Department of Animal Science, Bangladesh Agricultural University, Mymensingh-2202

*Corresponding author: mmh_bau2009@yahoo.com

Abstract

To develop a database on growth promoters and feed additives in cattle fattening a purposive survey was carried out. It is done among 30 cattle fattening farmers covering 1 Upazilla under 3 union in Mymensingh district of Bangladesh, who were involved in cattle fattening activities before Eid-ul-Azha (August to November 2015). The survey was done covering farmer's information, livestock population and production system, feed sources, manpower involvement, availability, types of hormones, feed additives use with negative opinion and probable suggestions for controlling whereas the researcher had no control or could not manipulate the variables as the appeared. All the farmers interviewed during the survey period were literates, and about 52% of them had primary education, 27% had secondary school certificates, 14% obtained higher secondary certificate and the rest were graduates and post-graduates, 7%. Irrespective of literacy about 10% of the interviewed farmer had training on cattle fattening and the rest fattened cattle without having any sort of training. About 35% respondents use skilled personal for cattle fattening. In the study areas, most of the farmers (55%) were using roughage and 45% of them use concentrate. The fattened cattle were marketed by farmers is 98% and rest 2% by butcher or others. About 72% of the farmer use Tracoll and 28% use Ketofox as feed additives and as hormone 30% farmers use Betamethasone, 55% use Decasone and 15% use Periactin. In public perception 89% farmers use growth promoters in wrong period and 80% use harmful feed additives, feeding natural feed in low amount is (65%). Consumers are less concern to buy fattened bull (93%). The mean of the suggestions like veterinary services (1.26), doses in proper ages (2.06), feeding balanced feed (1.62), organic growth promoters program (0.60) and knowledge through ICT program (0.03). From the above results it may be concluded that, major number of cattle are fattened by small farmers in the survey area. For this fattening purpose different types of hormones and feed additives available in the market are used by them. It can be concluded that, the percentages of different negative opinions on using hormones and feed additives is higher.

Key words: Cattle fattening, Feed additives and Hormones

Introduction

Bangladesh is a low-lying densely populated country with more than 150 million people where about 75% live in rural areas and the rural poverty rate is 25.6%, of which 12.4% are extreme (Hodson, 2006 and the daily Prothomalo, 2014). In Bangladesh, livestock is one of the most potential sub-sectors of agriculture which plays an indispensable role in promoting human health and national economy of the country. Large ruminants are cattle and buffalo and small ruminants are sheep and goat constitutes the major portion of livestock. Despite the large number of cattle available in the country, the contribution of the livestock sub-sector to the national economy is low. The acute shortage of feeds and fodder has long been identified as a serious constraint to optimum livestock production in Bangladesh (Saadullah, 1995). Farmers use rice straw of traditional varieties, green grass, sugarcane tops, wheat and rice bran, molasses, pulse bran and locally available resources such as vegetable by-products, rice gruel, boiled rice bran, oil cakes etc. for cattle fattening. The present population of livestock is 237.85 lakh cattle, 14.71 lakh buffalo, 257.66 lakh goat and 33.35 lakh sheep (DLS, 2015-16).

More than a decade and a half ago, the cattle fattening technology was developed in Bangladesh Livestock Research Institute (BLRI) on the basis compensatory growth theory to support the traditional cattle fattening farmers of this country for employment and income generation. These farmers used to buy emaciated male or infertile cows and heifers considering their body conformation and size, and having them treated with

better diets and fed for a period of at least 90 days to market live animals, specially targeting the Eid-ul-Azha. Fattening calf is a biological machine that converts feedstuffs into animal products. Its production life is short, so it is general able to withstand strong production stimuli without suffering undue damages, in other words excess nutrition levels capable of ensuring maximum growth rate. The breeder must choose a growth rate by striking a balance between the cost of feed and the price of meat. The information about uses of the feed additives and hormones for cattle fattening. Therefore this present research work is undertaken with the following objectives:

1. To make an inventory of the use of hormones and feed additives in cattle fattening areas.
2. To observe public perception on overall fattening concept.

Materials and Methods

Methods of data collection

The data were collected on the basis of purposive survey.

Study Area

The proposed research was carried out for 90 days during 24th, August, 2015 to 22nd, November, 2015, in Gauripur upazila at Mymensingh, Bangladesh.

Experimental animal

Male sexed cattle was the experimental animal.

Collection of data

A structured questionnaire was prepared for required data collection. Information were collected from respondents through face to face interview. Just prior to data

collection the objectives of the study were explained to the respondents. Then the questions were asked in a very simple manner with explanation whenever necessary.

Parameters studied

The interview questionnaire contained the major items of information such as farmer’s information, livestock population, production system, feed sources, manpower involvement, availability, types and cost of hormones, feed additives use with negative opinion and probable suggestions for controlling.

Research Design

The research design in the present study will be ex-post as the researcher has no control or could not manipulate the variables as the appeared. Personal observation and discussion with the farmers and companies ,personal exchange of ideas with extension workers, review of literature and opinions of others researchers in home will help the researcher to fulfill the objectives.

Compilation of Data and statistical analysis

The survey on different parameters in this study were explanatory descriptive. Therefore, data were compiled, tabulated and analyzed with simple statistical method to fulfill objectives of the study. Tabular technique was applied for the analyses of data using simple statistical tool like percentage. The process adopted five-point scale to evaluate neutralizing measures for public perceptions and suggestions. The scale was designed as following values: none=1, little=2, more=3, effective=4 and most=5. A mean score 3.0 was obtained. Any item with a score of 3.0 and above was regarded as a neutralizing measure while item with mean less than 3.0 were not taken as neutralizer.

Results and Discussion

Personal Profile

Table 1 shows the results of personal characteristics of livestock keepers at study areas in percentage. Age does not have any role in keeping livestock at the areas. However, young and middle aged person are more active and productive in keeping livestock than the aged groups.

Table 1. Personal profile of livestock keepers (n=30)

Parameter	Percentage (%)
Age	
20-34 years of old	33
35-49 years of old	32
Over 50 years old	35
Gender	
Male	90
Female	10
Educational level	
Primary school completed	52
Secondary school completed	27
Higher secondary completed	14
Graduation and / above	07
Occupation	
Agriculture	65
Business	33
Govt. job	01
Others	01
Household size (Family members)	
2 to 5	40
6 to 10	56
Above 10	04
Land (Katha)	
No land	20
2 to 25	30
26 to 50	40
Over 50	10

Alam *et al.* (2016) reported that innovators are always in their either young or middle age. Most of the livestock keepers just finished primary education (52%). Secondary and higher secondary school completed, and graduate and/ or above are 27%, 14%, and 7%, respectively. The fact that most of them are literate is advantageous to the adoption of any innovation meant to improve livestock keeping in the study area. It has been reported that increased farmer education positively influenced adoption

of improved practices (Agwu and Anyanvuu, 1996). Male (90%) dominates in keeping livestock than female (10%). In case of current occupation, the highest number of animals is kept by farmers who are directly engaged to agriculture (65%). 33% keepers have business and 1% has govt. job. Almost 40% keepers have 2 to 5 family members, 56% have 6 to 10 family members and 4% have above 10 family members.

Profile of livestock reared by keepers

Table 2 shows the results of livestock profile in (65%) over other species, whereas dairy cattle are (35%). In my experimental area there are 70% animals are local and rest 30% are crossbreed. Lupala (2002) found similar categories of animals in their findings (95%) available breeds in urban areas are indigenous and the rest are crossbreed. Indigenous livestock are easily adoptable and

percentage. In study areas, beef cattle share a lion number less risky. Opposite picture are seen to crossbred breeds that might leads more risk to keep more in the area. 70% farmers do fattening to animals by own capital and 17% farmers take NGO loan, some farmers (5%) take bank loan and 8% are lending for cattle fattening.

Table 2. Profile of livestock reared by keepers (n=30)

Parameter	Percentage (%)
Types of animals	
Dairy cattle	35
Beef cattle	65
Breed	
Local	70
Crossbreed	30
Source of capital	
Own capital	70
Bank loan	05
NGO loan	17
Lending	08
Purchase Time	
Around the year	65
Occasionally	35

Most of the livestock keepers practice cattle fattening occasionally (35%) for extra income within a short time. Similar results were reported by Foeken *et al.* (2004) who found that urban farmers' always took advantageous effort to boast up their financial status. About 65% farmers do the fattening around the year.

Distribution of respondents according to production system and use of hormones and feed additives

Table 3 shows the results that, 55% feeds are roughage and 45% are concentrate. The majority (70%) depends on natural feed, and 30% depends on only market feed. Only 5-10% keepers follow higher technologies for their animals. This is due to lack of farmer education and transfer of technology and training. In marketing system 98% respondents said that they directly sale their animal. On the other hand, butchers, local market and neighbors buy 2% of meat from those livestock. Minerals and vitamins are needed as a very small percentage of dietary nutrients, they are very important in beef cattle nutritional programs for proper animal function, such as bone development, immune function, muscle contractions, and nervous system function (Parish, 2008).

Antibiotic use as growth promoter is widely accepted both in the USA and Australia. The European Union (EU) countries banned its use. The government of the People's Republic of Bangladesh declared "The Fish and Animal Feed Act" that prohibits use of antibiotic in animal diets. However, the marketing entrepreneurs raised their voice to accept the beneficial antibiotics for feeding animals to have extra growth of animal.

Public perception

Table 4 shows that, almost 99.5% people are denying the bad effect of the hormones uses. They are using growth of those promoting agents on animal body 93%. To get

Table 3. Distribution of respondents according to production system and use of hormones and feed additives (n=30)

Parameter	Percentage (%)
Types of feed	
Roughage	55
Concentrate	45
Source of feed	
Naturally found	70
Market feed	30
Preservation /Treatment	
Hay	02
Silage	03
Others(Rice straw)	95
Manpower involvement	
Skilled	35
Unskilled	65
Training	
Trained	10
Untrained	90
Marketing	
Direct sale	98
Through Butcher/ others	2
Feed additives	
Tracollvit-min premix	72
Ketofoxvit-min premix	28
Hormones	
Betamethasone	30
Decasone	55
Periactin	15

promoter in high level of 89% and feed additives in 80%. In spite of that, people and butchers are ignoring the use more profit within short time 98% farmers are

withdrawing antibiotics, which is about 70%.

Table 4. Public perception (n=30)

Types of negative opinion	Ranking (%)	Percentage
1. Insufficient knowledge on carcinogenic effect of steroid hormone	99.5	
2. They want to get more profit within short time	98	
3. Consumers are less concern to buy fattened bull	93	
4. Growth promoter using in wrong period	89	
5. They have less idea about health status	83	
6. Harmful feed additives	80	
7. Withdrawing antibiotics	70	
8. Feeding natural feed in low amount	65	

Suggestion from farmers

From the survey a suggestion taking program was run. The farmers are little shy to give the suggestions. From the table we see that percentage was calculated on the

basis of suggestion from the attendants. Some good point was noted like regular health checkup (40%), balanced feed supply (48.6%), and continuous fattening has improved their background knowledge is about (63.6%).

Table 5. Suggestions (n=30)

Parameter	Percentage
1. Improvement of farmer background knowledge	63.6
2. Proper doses of growth promoters in appropriate age	61.8
3. Feeding animals with balance and safe feed	48.6
4. Regular health check via veterinary services	40.0
5. Strengthening rules and policy development for livestock keepers	24.0
6. Organic growth promoter program	18.0
7. May be initiated training program	5.00
8. Create beef cattle management knowledge bank.	5.00
9. Knowledge bank through ICT program	0.90
10. Others program	0.00

From the above results it may be concluded that, major number of cattle are fattened by small farmers in the survey area. For this fattening purpose different types of hormones and feed additives available in the market are used by them. And from public perception it is also concluded that, the percentages of different negative opinions on using hormones and feed additives is higher. And the use was assigned by a scale. The scale was designed as following values: none=1, little=2, more=3, effective=4 and most=5. A mean score 3.0 was obtained. Any item with a score of 3.0 and above was regarded as a neutralizing measure while item with mean less than 3.0 were not taken as neutralizer.

Conclusions

For this fattening purpose different types of hormones and feed additives available in the market are used by them. And from public perception it is also concluded that, the percentages of different negative opinions on using hormones and feed additives is higher.

Conflict of interest statement

The authors declare that they have no conflict of interest.

Acknowledgements

The authors thank goes to the personnel who were directly involved to conduct the research

References

- Ahmed, T.; Hashem, M. A.; Khan, M.; Rahman, M. F. and Hossain M. M. 2010. Factors Related Jo Small Scale Cattle Fattening In Rural Areas Of Bangladesh. *Bangladesh Journal of Animal Science*, 39(1&2): 116-124.
- Amanullah, S. M. and Huque, K. S. 2008. Study on the effect of using different forms of vitamins and minerals on cattle fattening. *Bangladesh Journal of Livestock Research*, 1(1&2): 53-58.
- Amanullah, S. M.; Huque, K. S. and Sunarna, R. N. 2007. Study on existing cattle fattening and marketing systems in some selected regions of Bangladesh. Annual Research Report. pp 42-43.
- Azwu, A. E. and Anyanwu A. C. 1996. Socio-cultural and environmental constraints in implementing the NALDA program in Southern Nigeria: A case study of Abia and Enugu State. *Journal of Agricultural Technology and Education*, 1: 68-72.
- Beeson, W. M. 1959. Professor of Animal Science, Purdue University. Presentation at the National Feed Ingredients Association Convention October 1-2, 1959, Chicago, Illinois. *Canadian Journal of Comparative Medicine*, 24(2).
- Binnert, C.; Nicod, N. and Tappy, L. 2004. Dexamethasone induced insulin resistance shows no gender difference in healthy humans. *Diabetes Metab* 30: 321-326.
- Brethour. 1972. Effects of acute injections of dexamethasone on selective deposition of bovine intramuscular fat. *J. Anim. Sci.*, 35:351-356.
- Church, D. C. and Pound, W. G. 1988. Basic Animal Nutrition and Feeding. John U'iley and sons. New York. pp. 267- 273.
- Dallman, P. R. 1990. Iron in Present knowledge in Nutrition. M. L. Brown. ed. International Life. pp. 251-260
- El Hassan, S. M.; Newbold, C.; Edward, I. E.; Topps, J. H. and Wallace, R. J. 1996. Effect of yeast culture on rumen fermentation, microbial protein floti from the rumen and live weight gain in bulls given high cereal diets. *Animal science*, 62: 43-48.
- El-Ashry, M. A.; El- Serafy, El-Basiony, A. Z. and Sadek M. F. 1993. Probiotic (LB in buffalo heifer's rations: 1- Effect on productive and reproductive performance. *Egypt. J. Anim. Prod.* 30(2): 103-115.
- El-Basiony, A. Z. 1994. Performance of growing lambs and buffalo calves given flavomycin as feed supplement. *Annuals of Agric. Sci., Moshtohor.* 32(4): 1511-1520.
- El-Basiony, A. Z.; Ragheb, E. E.; Nahas, H. M. E. and Abdel-Rahman G. A. 2003. A comparison among some growth promoters for fattening Egypt. Buffalo calves Egypt. *I. Nutr. And Feeds.* 6: 685-692.
- Foeken, D.; Sofer, M. and Mlozi, M. 2004. Urban agriculture in Tanzania. Issues of sustainability. African study center: The Netherlands.
- Gaughan, J. B.; Kreikemeier, W. M. and Mader, T. L. 2005. Hormonal growth-promoting effects oil grain-fed cattle under different environments, *International Journal of Biontelenrolngy*, 49: 396-402.
- Hashem, M. A.; Moniruzzaman, M.; Akhter, S. and Hossain, M. M. 1999. Cattle fattening by rural farmers in different districts of Bangladesh. *Bangladesh Journal of Animal Science*, 28(1&2): 81-88.
- Hodson, R. 2006. The Char Livelihood Program, the story and strategy so far CLP Secretariat, RDA Campus, Bogra.
- Lupala, A. 2012. Scoping study on urban and peri-urban livestock keepers in Dar es Salaam City. University College of Lands and Architectural Studies, Dar es Salaam, Tanzania.
- Maikasuwa, M. A.; Ala and Daouda, M. A. 2012. Impact of "IrkoyGomni" Micro-Credit on Poverty Alleviation among Cattle Fatteners in Kollo LGA of Tillabery region Niger Republic. *American International Journal of Contemporary Research*, 2(4): 130-135.
- Saadullah, M. 1995. Integrated farming system for rural poor. (Livestock based) Report. No. R. BRDB. Dhaka. Bangladesh. pp. 14-17.
- Song, M. K. and Choi, S. H. 2001. Growth promoters and their effects on beef production. *Asian Australasian Journal of Animal Sciences*, 14(1): 123-135.
- Sujan, O. F.; Siddque, M. A. B. and Karim, M. F. 2011. Study on cattle fattening practices of some selected areas of Rangpur district in Bangladesh. *Bangladesh Research Publications Journal*, 5(2): 125-132.
- Tareque, A. M. M. 2001. Animal nutrition, feeds and feeding. Agricultural Research in Bangladesh in 29 Century. Bangladesh Agricultural Research Council and Bangladesh Academy of Agriculture. pp. 448.
- Thomke, S. and Elwinger, K. 1998. Growth promoters in feeding pigs and poultry with mode of action of antibiotic growth promoters. *Annales de Zootechnie*, 47: 153-167.