Traditional Beef Cattle Fattenning System in Melo Koza Woreda Gamo Gofa Zone, Ethiopia

Amare Migibe*   Kebede Minota   Shimelis Gezahegn

Abstract

The study was conducted to assess traditional beef cattle fattening system in Melokoza woreda. Information was collected from 36 households using structured questionnaires. About 94.4% of the farmer used local breeds and 5.6% of the respondents used cross breeds for fattening purpose. About 66.67% of the respondents practiced their animals for 3 to 4 months and 33.33% of them were practiced 3 to 6 months and the fattening length depending on crop residues, wheat bran, grazing land and sweat potato. As a source of water for their cattle 52.8% of the respondent watered their cattle once a day, 36.1% of the respondents watered their cattle twice a day and 11.1% of respondents watered their cattle more than twice a day. With the regard to housing about 61.11% of the respondents used compost barn type of house, 22.22% of the respondents used tie stall house and 16.67% of respondents used free stall barn. Out of the interviewed respondents 38.9% were mentioned foot and mouth disease, 33.3% of respondents mentioned pasteurelousis, 22.2% calf eneristis and 5.6% were mentioned Anthrax occurred on their beef cattle. Furthermore, 33.33% of the respondents reported that shortage of feed and lack of grazing land, 16.667% of the respondents reported that poor extension service, 16.667% of the respondents reported that in inadequate capital and health problem and 33.335% of them were reported that poor veterinary services and low level of technology. So that by considering and give attention the effects of the constraints and use of alternative opportunities to be successful in beef cattle fattening in the study area.

Keywords: Beef cattle, fattening system, production.

1. INTRODUCTION

The agricultural sector plays an important role in the overall development of the economy Ethiopia. The sector plays a major role in the national economy and it is the source of income and employment for the rural population (Belay D, 2013).

Though, Ethiopia is known for its huge cattle population most of the beef is produced under an extensive low in put system. This shows that beef cattle fattening activity to alleviate poverty in the country if considerable attentions are given for this sub sector (Niguse, 2006).

In traditional fattening system, oxen are usually sold after the flowing season when they are in poor condition. Meat yields are low, beef quality is poor and as a result the farmers returns are often in adequate even to by a replacement ox (Seyoum & Zinash 2001).

During poor seasons, when the availability and quality of feed is low, cattle are rarely fattened and often have to be sold in poor condition at low prices (Seyoum & Zinash 2001). The by- products based fattening system is a type of fattening system in which agro-industrial by- products such as molasses, cereal milling by- products and oil seed meals are the main sources of food which is more concentrated along the high way from Addis Ababa to Nazareth, were the market is suitable for both the fattened cattle and molasses resulted from the surrounding sugar factories (seyoum and zinash , 2000). Small holder farmers in Melo koza Woreda has traditional beef cattle fattening of oxen from locally available feeds like crop residues, grazing lands, wheat branes, sweet potato Inset leaves and house wastes. Therefore, this particular study was conducted to evaluate traditional beef cattle fattening system in Melo Koza district Gamo Gofa Zone

3. Materials and methods

3.1. Description of the study area

The study was conducted in Melo Koza district of Gamo Gofa Zone, SNNPR, which is located at 650 km far from Addis Ababa and 375 km from Hawassa the regional city of SNNP. it situate the latitude between 6^046 and 7^026 N latitude and 37^00 and $38'08$ E longitude the study district has three agro ecologies namely the mid altitude which accounts 30%, high altitude which accounts 40% and low altitude constituting 30%. The altitude of the area ranges from 1500-1950 meter above sea level. The mean minimum and maximum temperature is $18c^0$ and $28c^0$ and the annual rainfall is between 1200-1300mm (Melo Koza district office unpublished data).

3.2. Sampling size and sampling techniques

Melo Koza Woreda has a total of 37 Kebeles, out of which 3 Kebeles namely Toba, Laha and Gergeda were selected for the study by using purposive sampling methods based on cattle population and accessibility. From each of the selected Kebeles, 12 representative householders were selected randomly. Thus a total of 36 house hold were interviewed.

3.3. Data collection method

Both primary and secondary sources of data were used for the study. The primary data were collected by using structured questionnaires while secondary data were obtained from agricultural office, Kebeles and administrative office.

3.4. Data Analysis

The collected data were analyzed by using descriptive statistics like mean and percentage and summarized and reported by using Tables & graphs.

4. Results and discussion

4.1. Beef cattle production systems in the study area

The types of livestock production system practiced in the study area are presented in Table 1. Three production system namely: mixed crop- livestock, livestock and crop production system were identified. However, 89% of the respondents practice mixed crop livestock production system. Livestock production system and crop production system accounts about 5.5% and 5.5% respectively. Because of shortage of land due to population pressure farmers have to practice in the grated farming activities. This production system i.e the mixed crop-livestock production system is considered to be advantageous if there is strong interdependence between the crop and livestock Zinash *et al.,* (2001). In this cause it can reduce cost feed that would be incurred for fattening activities by small holder farmers.

Table: 1. Type of livestock production system in the study area

Types of production system	Number of respondents (N=36)	Percentage %
Mixed crop-livestock production system	32	89
Livestock production system	2	5.5
Crop production system	2	5.5
Total	**36**	**100**

4.2. Selection of breed for beef cattle in the study area

Table 2 represents that the cattle breeds selected for fattening by the small holder beef producers in the study area. Almost a 94.4% of the respondents use local cattle breeds for fattening purpose while only 5.6% was found to use crossbreds. This facts coincides with general fact that most of the small holder livestock production in Ethiopia keep local breeds as the local breeds are adaptable to the existing environmental conditions in terms of poor quality feed, shortage of water and prevalence of disease in Ethiopia, 99.4% of the total cattle population is composed of indigenous breeds (Belete, 2010).

Table: 2. Types of cattle breeds used by respondents in the study area.

Breed type	Number of respondents (N=36)	Percentage %
Local breed	34	94.4
Cross breed	2	5.6
Total	**36**	**100**

4.3. Fattening season and duration

The season when fattening is practiced in the study area is shown in Table 3. One of the 36 households interviewed, (60%) of them was reported practice fattening during the end of rainy season i.e. during the main ('' *Kiremt*'') rainy season that occurs in summer (roughly) in June July and August) and the small rainy season (*Belg)* that occurs in spring (roughly from mid February to mid May). This may be due to the fact that the area liability of feed in both quality and quantity is plenty on the other hand, 40% of the respondents prepared for fattening on the holly day.

   This means that most of the farmers (60%) preference in the end of rainy season because excess amount of feed was available in quality and quantity and the wet weather conditions created suitable conditions for growth of feed

Tables: 3. Fattening season and duration of the study area.

Fattening season	Number of respondents(N=36)	Percentage %
Main holly days	14	40
End of rainy season	22	60
Total	**36**	**100**
Fattening duration		
3 to 4 months	24	66.67
3 to 6 months	12	33.33
Total	**36**	**100**

   With regard to fattening duration (the length of keeping cattle on fattening), 66.67% of respondents fatten

their animals for 3 to 4 months and the reset of 33.33% of respondents used fattening duration of 3 to 6 months. This showed as more than half of respondents prefer 3 to 4 months because there was high demand on meat of cattle so farmers fatten their cattle in short period of time. The fattening duration in the present study are comparable with the results reported by Wolde *et al.* (2014) who reported the average fattening duration of oxen in Woliata Zone was 3.6 months. But Ayalew *et al* (2013) reported cattle fattening duration of 4-9, 10-15 and more than 16 from different agro ecologies of Iluaba Bora Zone, Oromia region , months which are higher than the fattening duration of the present study.

4.4. Beef cattle management in the study area

Feed resource

Table: 4. Feeding resource for beef cattle in the study area.

Types of feed	Number of respondents (N=36)	Percentage
Inset leaves house waste	3	8.3
Grazing land crop residues wheat brain and sweet potato	33	91.7
Total	**36**	**100**

At the above Table 4 shows that 8.3 % of respondents were used *Inset* leaves and house waste. On the other hand, 91.7% respondents were used grazing land, crop residue, wheat bran and sweet potato for fattening because they got this feed type during the time of end of rainy season with quality and quantity. In addition the respondents revealed that they were kept their fattening animals on land outside the house at day and in the house at night and sometimes graze to near distance field and road side grass.

Table: 5. Sources of feed in the study areas.

Types of feed	Number of respondents (N= 36)	Percentage %
Own farm land	17	47.3
Road side grazing	16	44.4
Purchased	3	8.3
Total	**36**	**100**

The above Table 5 shows that 47.2% respondents were used own farm land as source of feed for their cattle and on the other hand 44.4% of respondents were used road side grazing and the remaining 8.3% of respondents were used purchased feeds.

From this point of view most of the farmer kept their fattening animals on land outside the house and graze to near distance field and road side this cattle did not go far in order to search their feed no loss of energy.

Watering management

The water source and watering frequency of cattle in the study area is given in Table 6. The major water resources for their animal were river (94.4% and pond water (5.6%).

Table: 6. Watering frequency of beef cattle in the study area.

Parameter	Number of respondents (N= 36)	Percentage
Water source		
River	34	94.4
Pond	2	5.6
Total	**36**	**100**
Watering frequency		
Once	19	52.8
Twice	13	36.1
More than twice	4	11.1
Total	**36**	**100**

With regard to watering frequency, majority (52.8%) of the respondents provided water to their cattle once a day 36.1% watered their animal twice a day while only 11.1% of watered their animals more than twice a day.

Housing management

Table 7 shows the types of beef cattle housing in the study area. Below the Table indicated 61 .11, 22.22%and 16.67% of the respondents use compost barn, tie stall barn, and free stall barn, respectively, to house their beef cattle. House is basically important to protect animals from predators, thief and from adverse weather conditions (Seid and Berhan, 2014)

Table: 7. Type of house for beef cattle in the study area.

Types of house	Number of respondents	(N= 36)	Percentage
Tie stall house	8		22.22
Compost barn	22		61.11
Free stall barn	6		16.67
Total	**36**		**100**

Health care management

Disease is one of the main factors impeding animal productivity in Ethiopia. Disease can reduce the growth, productivity reproductively and at sever condition it may end up with death of an animal in Melo Koza Woreda. The common cattle disease in the study area presented in below Table 8. About 38.9% and 33.3% of the respondents reported foot and mouth disease and posteurelusis, respectively were the common disease affecting their cattle.

On the other hand calf entersitis and anthrax, respectively, were reported by 22.2% and 5.6 % of the respondents as the common disease affecting their cattle. Seid and Brhan (2014) reported foot and mouth disease the most prevalent) and other different disease were reported by cattle producers in Burji district, Segen Zone of southern Ethiopia. Etafa *et al*. (2015), reported different disease, among them foot and mouth disease, anthrax, pasteurollosis and pneumonia were the major disease affecting cattle production in the west Hararghe of Oromia Regional state.

Table: 8. Common disease of beet cattle in the study area.

Type of disease	Number of respondents	(N=36)	Percentage (%)
Foot and mouth	14		38.9
Pasteureuosis	12		33.3
Calf enteristis	8		22.2
Anthrax	2		5.6
Total	**36**		**100**

4.5. Constraints of beef cattle production

The major constraints for livestock production in the study districts are provided in Table 9: About 33.3% of the respondents reported that shortage of feed and lack of grazing land is the main constraints in the study area. 16.67% of the respondents reported that poor extension service was the main constraint for livestock production. While, inadequate capital and health problem (16.67%) and poor veterinary service and low level of technology (33.37%) were the main constraints to livestock production in the study districts. In support to the present study Belete *et al*. (2010), reported the major constraints for cattle production in Fogera Woreda of Amhara region were: shortage of feed, disease challenges and weak veterinary services, weak extension services, shortage of working capital and shortage of improved.

Table: 11. The major feed constraints of cattle production in the study area.

Constraints	Number of respondents	(N=36)	Percentage (%)
Shortage of feed and lack of grazing land	12		33.33
Poor extension service	6		16.67
Inadequate capital and health problem	6		16.67
Poor veterinary service and Low level of technology	12		33.34
Total	**36**		**10**

4.6. Opportunities of beef cattle production

The most important opportunities for cattle fattening in the study area from the considerable potential and indigenous knowledge further exploration.

Opportunity for development enhanced by the raid responses of farmers to expand their fattening operation with improved practices such as provision of the proper housing number with good qualities and increase number of animals fattened.

The major opportunities are indentified as follows.

- The availability of large cattle stock in the area
- Water accessibility in the area.
- Utilization of crop residues from farm land wastes.
- Environmental condition of the area like climate and available feed.

5. Conclusion

The study indicated that most of the farmers fatten their steers after served for traction purpose in end of the rainy season and during the time of raining season. Furthermore respondents revealed that predominantly fattening was

used crop-livestock production system and local breeds were used for fattening. The major feed resource used by respondents in the study area for beef cattle production were crop residue, Grazing land, Wheat brain, Sweet potato, and *Inset.*

The major disease that was existing in the study area for beef cattle production was foot and mouth, anthrax and pasteurellosis. Shortage of beef, poor extension service, in adequate capital poor veterinary services, low level of technology, health problem and shortage of industrial by products were the major constraints in beef cattle production while availability of large cattle stock in the area, seasonal availability of feed and water access and good environmental condition were the opportunities of beef cattle production.

Based on the above conclusion, it can be made the following recommendations:

- Farmers should use young age animals so as to be good and effective in meat production.
- Farmers should be emphasized to use animals for fattening purpose as much as possible rather in use for dual purpose.
- Development agents should give extension service for the farmers about beef cattle.
- The livestock and fishery office and development agents should provide training in use of different beef cattle fattening, feed management provision of house.

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