Fattening Cattle Feeding Practices of urban and Peri-Urban Cattle Fatteners in Dessie and Kombolcha Towns, Ethiopia

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Abstract: The aim of this research was to investigate the feeding practices and equipment’s of urban and peri-urban kebeles of Dessie and Kombolcha towns, Ethiopia where scientific intervention could be initiated for further improvement of fattening practices. In this study, a structured questionnaire administered to a total of 337 cattle fattener households (190 from Dessie and 147 from Kombolcha towns). Complete enumeration techniques were applied to select urban and peri-urban kebeles. Data included feeding practices such as, feed preparation methods, means and ways of feeding, frequency of feeding and determination of required amount per cattle, feeding procedures for fattening cattle, feed cost estimation, experience of hormone usage and feed additives provision and cattle fatteners’ local ration formulation practices. The results indicated that Mixing (100%) different available conventional and non-conventional feed ingredients were the only dominate way to prepare ration for fattening cattle in urban and peri-urban kebeles. In door or stall feeding system (100%) were the only adopted means of feeding for fattening cattle in urban and peri-urban kebeles of both study towns. In Dessie and Kombolcha towns, majority of peri-urban (83.2%, 100%) and urban (80.5%, 48.5%) cattle fatteners provided ration once per day, respectively. As per group discussion and researcher practical observation, in both study towns majority of urban and peri urban cattle fatteners provided a bulk of mixed ration once per day per cattle to decrease labor cost. All cattle fatteners (100%) in both study towns had no feeding program for fattening their cattle. Peri-urban cattle fatteners (100%) in Dessie and Kombolcha towns were unable to estimate the amount of feed cost required for single cattle per fattening duration, while, 97.6 % and 80.3 % of urban cattle fatteners in Dessie and Kombolcha towns, respectively, estimated about 3000 birr/head/fattening duration. Neither urban nor peri-urban cattle fatteners in both study towns used hormone for cattle fattening process. But, as per group discussions, few of peri-urban cattle fatteners in Kombolcha towns used chicken eggs as feed additives. As per group discussions, key informant interviews and researcher practical observations, the entire peri-urban and urban cattle fatteners in Dessie and Kombolcha towns has traditional knowledge on ration preparation practices. Therefore, to boost up the newly emerging urban as well as peri-urban cattle fattening sector and to alleviate feeding difficulties and limitations the newly emerging urban fattening practices should be guided scientifically with skilled expertise with intensive practical training in both study towns.

Key words: Fattening Cattle • Feeding Practices • Peri-Urban • Urban

INTRODUCTION

Cattle fattening is an effective tool for poverty alleviation and has become an important business of the small farmers as well as urban dwellers. Particularly, the sector offers good opportunity for employment and income generation for the rural poor, especially landless, destitute and divorced women [1]. However, expansion and productivity is constrained quantitatively and qualitatively by inadequate and imbalanced nutrition, sporadic disease outbreak, scarcity of water, lack of appropriate livestock extension services, insufficient and
unreliable data to plan the services and inadequate information to improve animal performance, marketing, processing and integration with crop and natural resources for sustainable productivity and environmental health [2].

Improvement in cattle productivity can be achieved through identification of production constraints particularly feeding practices and introduction of new technologies or by refining existing practices in the system. Further work is needed to develop cost effective feeding strategy [3]. Therefore, to plan and develop improved cattle fattening systems, it is very important to investigate the existing cattle fattening practices, particularly feeding [4]. Generally, assessment of fattening cattle feeding practices is a prerequisite to bring improvement in cattle productivity in the low income countries. Hence, the present study was conducted to appraise the cattle fattening feeding practices in urban and peri-urban kebeles of Dessie and Kombolcha towns of Ethiopia.

MATERIALS AND METHODS

Description of the Study Area: The study was conducted in Dessie and Kombolcha towns. Dessie is located in northern part of Ethiopia in Amhara National Regional State, South Wollo Zone at a distance of 400 km from Addis Ababa, Ethiopia. Its astronomical location is at 11°8’N -110°46’ North latitude and 39°38’E- 41°13’ East longitude. Relatively it is bounded by KutabberWoreda in the north, Dessie Zuria Woreda in the east and by Kombolcha town in the south. The topography of Dessie is a highland type surrounded by ‘Tossa’ mountain [5]. Its elevation ranges between 2, 470 and 2, 550 meter above sea level (http://en.wikipedia.org/wiki/Dessie, retrieved in December 2014). Annual maximum and minimum temperatures of Dessie are 23.7 °C and 9 °C, respectively, recorded in 2015 (Kombolcha meteorology station). Dessie is one of the reform towns in the region and has a city administration consisting of municipality, 10 urban and 6 peri-urban kebeles.

Kombolcha is an industrial town found in the north-central part of Ethiopia in South Wollo Zone of the Amhara Regional State of Ethiopia. It is situated at a distance of 377 km from north of Addis Ababa, 505 km from the Regional capital city, Bahirdar, 23 km from the zonal town Dessie and 533 km from port Djibouti. Astronomically, the town is located at about 110°6’ N latitude and 390 45’ E longitudes. The delimitation of the town is bounded by Dessie Zuria Woreda in the North East and North west, Kalu Woreda in the South and Albuko Woreda in the South West [6]. Mean annual rainfall is 1046 mm while annual maximum and minimum temperatures are 28.1 °C and 12.9 °C, respectively, recorded in 2015 (Kombolcha meteorology station). The town is located in a range of altitudes between 1, 500 and 1, 840 meter above sea level. Kombolcha is one of the reform towns in the region and has a town administration municipality, 5 urban and 6 peri-urban kebeles [7].

Sampling Procedure and Sample Size: Based on objectives of the research and the parameter required pre tested structured questionnaire was prepared. The questionnaire comprised data or information on feed preparation methods, means and ways of feeding, frequency of feeding and determination of required amount per cattle, feeding program for fattening cattle, feed cost estimation, experience of hormone usage and feed additives provision and cattle fatteners’ local ration formulation practices. Accordingly, those urban and peri-urban kebeles where a cattle fattening is practiced, were considered in both study towns. Accordingly, 3 and 6 urban, 4 and 6 peri-urban kebeles were selected from Dessie and Kombolcha towns, respectively. Complete enumeration technique was applied to select urban and peri-urban kebeles. Due to manageable number of cattle fatteners, complete enumeration technique was applied to select individuals from urban and peri-urban kebeles of Kombolcha town. While, systematic random sampling technique for peri-urban and complete enumeration technique for urban cattle fatteners was applied to select individual household in Dessie town. In peri-urban kebeles of Dessie town, sampled households were determined based on the principle of probability proportional to size’. The sample size (n) was determined using the formula recommended by Arsham [8] N = 0.25/SE² Where: N: number of sample, SE: standard error, with the assumption of 4% SE. Consequently, 190 (41 urban and 149 peri-urban) from Dessie and 147 (66 urban and 81 peri-urban) cattle fatteners household from Kombolcha town were selected and interviewed.

Data Collection and Analysis: A single visit formal survey was employed to collect all the required data. To strengthen the survey data, group discussions were held with individuals who have knowledge and experience
on cattle fattening practices. In addition, key informant interviews were made with towns and kebeles Agricultural Experts and Development Agents. Field observation was carried out to take different pictures. Researcher personal observation together with his practical experience in the study towns related to cattle fattening were also incorporated. Accordingly, focus group discussions and key informant interviews were conducted between February and April, 2016 whereas the household level surveys were carried out in May, June, July and August of the year 2016. Consequently, all the collected data were coded and entered into a data base using statistical package for social sciences (SPSS). Descriptive statistics such as mean, percentiles and frequencies were used to analyze the data using the SPSS statistical software (SPSS for windows, release 20, 2011).

RESULTS AND DISCUSSION

Feed Preparation Methods: Mixing (100%) different available conventional and non-conventional feed ingredients were the only dominate way to prepare ration for fattening cattle in urban and peri-urban cattle fatteners in both study towns (Table 1). The entire cattle fatteners mixed the concentrate feed resources without water. Mixing manually without water by using shovel and hand in a concert space or plastic cover ground was a common practice in both study towns. Moreover, mixing feed ingredients using water was not common in both study towns. This because the majority of cattle fatteners used poultry litter as feed ingredients. When the poultry litter mixed with water, it creates bad odor and becomes a suitable environment for diseases causing agents. Cattle refused to eat due to its pungent odor. Besides, they provided roughage alone as feed resource.

Means and Ways of Feeding: In door or stall feeding system (100%) was the only adopted mean of feeding for fattening cattle in urban and peri-urban kebeles of both study towns. Tying cattle to be fatten in the house or shade was the only adopted means of feeding approach in both study towns. Such practice was locally called ‘Majeb’. After tying cattle, all the intended feeds were provided via cut and carry system or take all the feed in to the cattle. The entire urban cattle fatteners and 94 % and 77.8% peri-urban cattle fatteners in Dessie and Kombolcha towns, respectively, provided the mixed ration and roughage feeds separately in the tied shade or house. The rest 6 % and 22.2 % of peri-urban cattle fatteners in Dessie and Kombolcha towns, respectively, provided them together for collective use (Table 1). The survey result agree with Tsegay et al. [9] who reported the farmers used three types of feeding system namely; cut-carry system, only grazing and both grazing and cut-carrying in order of their importance.

Frequency of Feeding and Determination of Required Amount per Cattle: In Dessie and Kombolcha towns, majority of peri-urban (83.2%, 100%) and urban (80.5%, 48.5%) cattle fatteners provided ration once per day, respectively. The rest provided offered it twice or three times per day and depend on the appetite of the cattle. The entire cattle fatteners (100%) in both study towns totally determined the amount of feed required per cattle through guessing by observing the feed appetite of the cattle as well as the amount of feed left in the feeding trough (Table 1). As per group discussion and researcher practical observation, in both study towns majority of urban and peri-urban cattle fatteners cattle fatteners provided a bulk of mixed ration once per day per head to decrease labor cost. They mixed a bulk of supplementary feed ingredients using shovel and /or hand once per day and spread the mixed ration in the feed trough while provision. Guess was the only means to determine the amount of feed required per head at any age.

Few urban cattle fatteners allocated a bulk of feed for group of cattle this is called group feeding. Such approach not economical and only aggressive (dominant animal) prevents others from approaching food. In addition, such practices increase the amount of refusal ration. Such feeding practices have its own negative impact on body weight gain of individual animal and the profitability of the sector. This is due to those cattle which have aggressive behavior earnings the dominant opportunity than the less aggressive cattle. In addition, less aggressive cattle could not gain weight due to fear. Besides, it difficult to calculate the cost benefits analysis regarding feed. Moreover, cattle fatteners in urban as well as peri-urban kebeles of both study towns were applying try and error approach while feeding fattening cattle. This is due to absence of practical technical support related to ration formulation and feeding practices from agricultural experts.

Feeding Programs for Fattening Cattle: All cattle fatteners (100%) in both study towns have no feeding program while feeding fattening cattle (Table 1). They simply provided the mixed feed ingredients, hay and water
Table 1: Feeding practices of fattening cattle in Dessie and Kombolcha towns

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Dessie town n (%)</th>
<th>Kombolcha town n (%)</th>
<th>Overall total n = 337</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ration preparation practice and methods</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixing</td>
<td>149 (100)</td>
<td>41 (100)</td>
<td>190 (100)</td>
</tr>
<tr>
<td>Means of feeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>In door/stall feeding</td>
<td>149 (100)</td>
<td>41 (100)</td>
<td>190 (100)</td>
</tr>
<tr>
<td>Way of feeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Separately</td>
<td>140 (94)</td>
<td>41 (100)</td>
<td>181 (95.3)</td>
</tr>
<tr>
<td>Together</td>
<td>9 (6.0)</td>
<td>0 (0.0)</td>
<td>9 (4.7)</td>
</tr>
<tr>
<td>Frequency of feeding</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once per day</td>
<td>124 (83.2)</td>
<td>33 (80.5)</td>
<td>157 (82.6)</td>
</tr>
<tr>
<td>Twice per day</td>
<td>0 (0.0)</td>
<td>8 (19.5)</td>
<td>8 (4.2)</td>
</tr>
<tr>
<td>Three times per day</td>
<td>16 (10.7)</td>
<td>0 (0.0)</td>
<td>16 (8.4)</td>
</tr>
<tr>
<td>Depend on the appetite</td>
<td>9 (6.0)</td>
<td>0 (0.0)</td>
<td>9 (4.7)</td>
</tr>
<tr>
<td>Amount provided per day</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>By guess</td>
<td>149 (100)</td>
<td>41 (100)</td>
<td>190 (100)</td>
</tr>
<tr>
<td>Feeding procedure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>149 (100)</td>
<td>41 (100)</td>
<td>81 (100)</td>
</tr>
<tr>
<td>Yes</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Feed cost/ duration/ cattle</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000 birr</td>
<td>0 (0.0)</td>
<td>1 (2.4)</td>
<td>1 (0.5)</td>
</tr>
<tr>
<td>2500 birr</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>3000 birr</td>
<td>0 (0.0)</td>
<td>40 (97.6)</td>
<td>40 (21.1)</td>
</tr>
<tr>
<td>They don’t know</td>
<td>149 (100)</td>
<td>0 (0.0)</td>
<td>149 (78.4)</td>
</tr>
<tr>
<td>Hormone usage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>149 (100)</td>
<td>41 (100)</td>
<td>190 (100)</td>
</tr>
</tbody>
</table>

PUK refers to Peri-urban Kebeles; UK denotes to Urban Kebeles

as they like and without feeding sequence. This is attributable to lack of awareness and practical support regarding feeding. This type of feeding approach made the management system as well as the cattle fattening practice more traditional and led to loss of feed resources and cost incurring approach.

**Feed Cost Estimation:** Peri-urban cattle fatteners (100%) in Dessie and Kombolcha towns were unable to estimate the amount of feed cost required for single cattle per fattening duration, while, 97.6 % of urban cattle fatteners in Dessie and 80.3 % Kombolcha towns estimated about 3000 birr/head/fattening duration (Table 1). The current result indicated that the entire peri-urban cattle fatteners were unable to estimate the amount of feeds provided/head/duration. This was because farmers were having no recording system and no documentation culture of the expense and benefit of the fattening process and the feed resources they used either purchased from market or brought from their own farm. The fattening duration changed according to the year and from farmer to farmer. In addition, cattle source also varied and was difficult to estimate. Majority cattle fatteners obtained cattle from their own herd but others purchased them from the market. Additionally, peri-urban cattle fatteners simply reported the gross benefit without consideration of feed resources used particularly from their own farm and labor invested. Some of them calculated the overall fattening expenses starting from calf stage. Others simply expressed the benefit according to the primary objectives they used cattle for draft power service. Literally, they expressed 'I am plowing my farm more than 10 years using a given ox'.

Conversely, in both study towns urban cattle fatteners estimated the feed cost/per cattle/fattening duration. This because urban cattle fatteners performed the fattening activities as a major job opportunities, because of this reason they provided great attention for their expense and profit relative to Peri-urban cattle fatteners. As per group discussions and key informant interviews, the feed cost/head/fattening duration depended mainly on the body condition of the cattle during their purchase, the environmental condition, actual cost of each ingredients while fattening, type of feed used and days of cattle fattening.

**Experience of Hormone Usage and Feed Additives Provision:** Neither urban nor peri-urban cattle fatteners in both study towns used hormone for cattle fattening process. But, as per group discussions, few of peri-urban
Table 2: Cattle fatteners local ration formulation options in Dessie and Kombolcha towns

<table>
<thead>
<tr>
<th>Formulated ration options</th>
<th>Number of feed used</th>
<th>Feed ingredients and amount incorporated per day in kg</th>
<th>By whom</th>
<th>Where</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>13 in 1</td>
<td>(Poultry litter + grass pea leftover + different feed left over + oat hull + grass pea hull + wheat bran + milling house leftover + dried brewery grain + barley leftover + barley hulls + oat leftover + 200 gram salt) + grass hay. The amount for each feed was unknown, simply they were provided by guess)</td>
<td>UCF</td>
<td>KT</td>
</tr>
<tr>
<td>Option 2</td>
<td>5 in 1</td>
<td>(2.5 kg wheat bran + 2.5 kg pea leftover + 2.5 kg milling house leftover + 1.5 kg corn grain + 200 gram salt) + unknown kg of grass hay</td>
<td>UCF</td>
<td>DKT</td>
</tr>
<tr>
<td>Option 3</td>
<td>6 in 1</td>
<td>(2 kg grass pea left over + 2 kg wheat bran + 2 kg pea left over + 2 kg bean leftover + 200 gram salt + 2 kg linseed cakes) + unknown kg of grass hay</td>
<td>UCF</td>
<td>DKT</td>
</tr>
<tr>
<td>Option 4</td>
<td>7 in 1</td>
<td>Bean leftover + linseed cakes + wheat bran + corn grain + linseed cake + available hulls + salt + grass hay (the amount is unknown simply they were provided by guess)</td>
<td>UCF</td>
<td>DKT</td>
</tr>
<tr>
<td>Option 5</td>
<td>4 in 1</td>
<td>Wet dried brewery grain + dried brewery grain + powdered salt + grass pea left over + hay (the amount was unknown simply they were provided by guess)</td>
<td>UCF</td>
<td>KT</td>
</tr>
<tr>
<td>Option 6</td>
<td>5 in 1</td>
<td>(2 kg grass pea leftover + 2 kg poultry litter + 3 kg dried brewery grains + handful of powdered salt + 2 kg oat leftover) + unknown kg of grass hay</td>
<td>UCF</td>
<td>DKT</td>
</tr>
<tr>
<td>Option 7</td>
<td>4 in 1</td>
<td>(3 kg Dried brewery grain + 2 kg grass pea left over + 2 kg poultry litter + handful of powdered salt) + unknown kg of grass hay</td>
<td>UCF</td>
<td>KT</td>
</tr>
<tr>
<td>Option 8</td>
<td>6 in 1</td>
<td>(1.5 kg corn grain + 1 kg barely hulls + 1 kg barley left over + 1 kg grass pea leftover + 1.5 kg poultry litter + handful of powdered salt) + unknown kg of grass hay</td>
<td>UCF</td>
<td>KT</td>
</tr>
<tr>
<td>Option 9</td>
<td>6 in 1</td>
<td>3 kg poultry litter + 3 kg grass pea leftover + molasses one litter dilute with 5 litter water + 3 kg dried brewery grain + 1 kg linseed cake + handful of powdered salt) + unknown kg of grass hay</td>
<td>UCF</td>
<td>KT</td>
</tr>
<tr>
<td>Option 10</td>
<td>6 in 1</td>
<td>Barley grain + Barley hulls + wheat bran + grass pea leftover + maize stover + block of salt + grass hay (the amount was unknown simply they were provided by guess)</td>
<td>PUCF</td>
<td>DKT</td>
</tr>
<tr>
<td>Option 11</td>
<td>7 in 1</td>
<td>‘Wokiyu’ + green feed + crop residues during harvesting + maize stover and/or sorghum Stover + 3-4 kg wheat bran + grass hay + block of salt (amount was unknown)</td>
<td>PUCF</td>
<td>DKT</td>
</tr>
</tbody>
</table>

Cattle fatteners reported the amount of feed used for ration formulation by guess using different equipment. For this study purpose the amount of feed in equipment quantified via scale into kilogram; UCF= urban cattle fatteners; PUCF= peri-urban cattle fatteners; DKT= Dessie and Kombolcha Towns; DT= Dessie town; KT= Kombolcha town.

Cattle fatteners in Kombolcha towns used eggs as feed additives (Table 1). Peri-urban cattle fatteners in Kombolcha towns provided and drenched diluted 10 to 18 chicken eggs for two to three phases for fattening cattle at the commencement of fattening. They believed that provision of eggs at the commencement of fattening motivate the cattle to take large quantity of feed with better appetite and to kill internal parasites that hinder the fattening process. The current finding agreed with Tsegereda [10] who revealed that Hararghe farmers used common baking yeast such as *Saccharomyces cerevisiae*, Abish flour (Fenugreek) and fermented dough or their combination for fattening purpose as additional feed resources and fed to the animal mixed with additional fresh flour of maize or wheat bran or alone.

**Cattle Fatteners’ Local Ration Formulation Practices:**
As per group discussions and researcher practical observation peri-urban and urban cattle fatteners in Dessie and Kombolcha towns developed different ration formulation options for fattening their cattle. Accordingly the dominate local ration formulation options which was invented by peri-urban and urban cattle fatteners in Dessie and Kombolcha towns and identified during the study periods is described in Table 2.

As per group discussions, key informant interviews and researcher practical observations, the entire peri-urban and urban cattle fatteners in Dessie and Kombolcha towns has traditional knowledge on ration preparation practices. While purchasing and formulating ration, the type and amount of feed ingredients incorporated in each ration option were determined based on influential and model cattle fattenner’s previous experiences, feed availability and cost of feed. They simply followed a given practiced accustomed by model or influential cattle fatteners. Moreover, while they were preparing different ration options, they did not consider the nutrient composition of feed ingredients, the cattle requirement
and energy and /or protein sources of the feed. Simply they collected the available feed resources based on the least cost of marketing price per kg.

Urban cattle fatteners in both study towns used different types of feed ingredients to formulate their indicated ration options in the result section, while, peri-urban cattle fatteners commonly used different feed resources from farm, flour factory byproducts and grass pea leftover. To prepare a single ration options cattle fatteners in the current study towns used at a minimum of 4 and maximum of 13 feed ingredients (Table 2). In both study towns, the overall cattle fattener had strong believe and practical experience on grass pea leftover (Yeguwayaduka) on its ability to fatten cattle while the feed incorporated with different concentrate feeds. Accordingly, from different feed ingredients, exceptionally, they used grass pea leftover feed dominantly. While urban cattle fatteners mainly focused on wheat bran, corn grain, poultry litter, wet and dried brewery grains, grass pea left over and hay. The profitability of locally formulated ration options was evaluated through continuous try and error approach. Therefore, it is advisable to do experiment to evaluate and confirm the effect of different concentrate feeds and economic feasibility for sustainable and profitable cattle fattening practices.

As per group discussions, Inadequate and limited feed resources access were the pronounced major limitations for the cattle-fattening sector in both study towns. This is due to absence of fundamentally established feed supplier to provide feed for cattle followed by difficulties related to transportation and cost to collect different feeds from different feed suppliers, recurrent drought, feed shortage, price increment and unpredictable feed cost variation, lack of governmental feed processing factories and suppliers, poor distribution of the available feed resources, illegal cattle feed traders and cost increment problems, difficulty to access molasses, limited access of poultry litter due to illegal traders, limited experience to use poultry litter by peri-urban cattle fatteners, limited access of brewery grain due to presence of high demand, limited production potential of feed suppliers, great variation in availability, distribution and price due to limited supply and transportation problem across the seasons. Generally in the current study towns, majority of feed resources showed great variation in availability, distribution and price. There were by product base feed suppliers in both study towns. Nevertheless, none of them was primarily established to provide feed for cattle. Rather they provided their byproduct.

**CONCLUSION**

Mixing of different feeds and guessing by observing the feeding appetite of fattening cattle was the dominant feeding practices in the study towns. Moreover, a collective feed provision practice also practiced. Guessing and a collective feed provision practice had negative impact on body weight gain of the cattle, the profitability of the sector and the difficulty to calculate the cost benefits analysis. Therefore, to alleviate such difficulties and limitations, the concerned body should give consideration. Peri-urban cattle fatteners (100%) in Dessie and Kombolcha towns were unable to estimate the amount of feed cost required per cattle per fattening duration. As a model practices, peri-urban and urban cattle fatteners in Dessie and Kombolcha towns developed different ration formulation options for fattening cattle. However, while formulating ration, the type and amount of feed ingredients incorporated did not consider the nutrient composition of feed ingredients, the cattle requirement and energy or protein sources of the feed. Simply they collected the available feed resources based on lower marketing price. Therefore, such practices should be corrected for increasing profitable cattle fattening practices.

Inadequate and limited feed resources access were the pronounced major limitations for the cattle-fattening sector in both study towns. Therefore, governmental and non-governmental organizations, private owners should act to solve the bottleneck of the sector. Consequently, feed shortage solving activities should get the first and foremost considerations.

- To alleviate feeding difficulties and limitations the newly emerging urban fattening practices should be guided scientifically with skilled expertise with intensive practical training in both study towns.
Consequently, tying cattle individually and provision of ration based on its requirement should be widely experienced and such practices should be supported with strong extension services. Moreover, ration preparation ways should be guided to consider the nutritive value of ingredients.

- To improve the traditional cattle fattening practices and handling culture: (i) cattle fatteners traditional feeding practices such as guessing and collective feeding approach should be guided to be based on live-weight.
- Consequently, fattener’s fattening cattle feeding practices should be supported with scientific knowledge; and (ii) development agents and experts with strong extension service should initiate the cattle-fattening sector to follow scientific feeding approach.

ACKNOWLEDGEMENT

The authors would like to acknowledge College of Veterinary Medicine and Agriculture of Addis Ababa University and Arba Minch University, Ethiopia for funding the study. We also acknowledge the urban and peri-urban cattle fatteners, Agricultural Experts, Development Agents in Dessie and Kombolcha towns for their willingness to provide the necessary information.

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