Breeding practices and selection criteria of cattle in Bedele Administrative Town and Bedele District, Ethiopia: implications for designing genetic improvement program

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The investigation was directed to portray the breeding practices and selection criteria for selecting a breeding bull, dairy cows and cattle for fattening. A total of 180 structured questionnaires were utilized to gather information from households in the study areas. Under breeding practices, 92.5% and 7.5% of the households were engaged in uncontrolled and controlled mating system in Bedele District, respectively. Alternatively, about 40% and 60% of respondents performed uncontrolled and controlled mating system in Bedele Town, respectively. Generally, the breeding and farming practices were statistically different across the two study areas at p<0.05. The households in Bedele town kept their cattle mainly for milk, cash and investment, whereas milk, draught and cash were identified as the primary purpose of keeping cattle in Bedele District. Based on indigenous knowledge; teat length, the structure of udder and body cavity & pelvic width are used as major selection criteria of dairy cows. For selecting a breeding bull; scrotum size, penis size & neck structure and good temperament traits are used in the study areas. In terms of fattening; flat backbone, body length & muscularity and fit & straighten legs were observed as the major selection criteria. Our results indicated that combination of indigenous knowledge with modern science is important for genetic improvement in the study areas. The study suggests that the purpose of rearing, breeding practices and selection criteria should be considered as basic elements for genetic improvement scheme while creating awareness of the negative impact of uncontrolled mating system.

Keywords: Bedele, breeding, cattle, indigenous Knowledge, selection criteria.

INTRODUCTION

Livestock husbandry and traditional societies of the world have strong relationship mainly on the role of livestock on the societies. Rearing farm animals is a fundamental part of rural development from the time when agriculture started (Banerjee *et al.,* 2014). Different species of livestock have been selected by rearers based on the needs and agro-climatic conditions of the areas. The consideration of needs, adaptation and availability of livestock species help in the development of specific type, which can be improved by artificial method (to fit the particular needs of rearers) and natural selection. The introduction of modern selection criteria and many temperate livestock breeds around the world to Asia, Africa and Latin America has changed the indigenous knowledge of rearers in livestock husbandry and traditional selection practices (Banerjee *et al.,* 2014). Indigenous technical knowledge (ITK) is a vital part of the beliefs and antiquity of indigenous societies and it has advanced over the years of consistent trailing on the routine life and existing assets in the community, it is indispensable for the conservation of genetic

resources for the sustained subsistence of the breed/type (Jena, 2007).

Among African countries, Ethiopia is one of the enriched countries with diverse indigenous cattle genetic resources and is well-known for its varied production systems (DAGRIS, 2007). The estimated population of cattle in Ethiopia is made up of 98.24, 1.54 and 0.22 % of local, crossbred and imported breeds, respectively (CSA, 2018). DAGRIS (2007) reported that Ethiopia is recognized as the homeland for 32 local breeds of cattle and a land for the existence of numerous undocumented native knowledge on genetic resource management. The purposes of keeping cattle in Ethiopia are mainly for milk, meat, income and other social functions. However, the lack of genetic improvement interventions, inputs shortage/lack, and indigenous farming practices as well as other environmental stress are the limiting factors for low production performance of local cattle (Tegegne *et al.,* 2010; Mengistu *et al.,* 2019). In all cases, the local breeds possess economically important traits that are preferred by the keepers such as survivability. This trait enables the breeds to thrive on harsh environment. In dairy cattle breeding, the indigenous

breeding bulls have been used for natural mating (controlled and uncontrolled) and is practiced by most of dairy farmers living in highlands, midland and lowlands of Ethiopia (Gebremicheal, 2009; Mengistu *et al.,* 2019), while some farmers have been used Artificial Insemination (AI) in some areas. The livestock keepers and their trait preferences vary across societies, husbandry systems, and agro-ecological zones (Scarpa *et al.,* 2003; Roessler *et al.,* 2008). The ranking of preferences for a specific trait might be different based on the differences on livestock production systems. It has been reported that production systems have direct influence on some of the economically important traits. Indigenous knowledge implies the scheming of viable farming systems including animal husbandry practices thereby increasing the income of rural inhabitants (Singh and Kumar, 2012). So far there are no studies that have been done regarding indigenous cattle breeding practices and selection criteria in Buno Bedele Zone of Oromia Region, Ethiopia. Thus, the objectives of this study were to explore the traditional breeding practices and selection criteria of cattle by the inhabitants of Bedele Administrative Town and Bedele District of Oromia Regional State of Ethiopia.

MATERIALS AND METHODS

***Description of the study areas*:** This study was conducted at Bedele Administrative Town and Bedele District, Ethiopia. Bedele Administrative Town is located at a distance of 480 km from the capital city of Addis Ababa towards the Southwestern direction of the country. It is situated at an elevation range of 2012-2162 m.a.s.l. Bedele District consists of several rural Peasant Associations surrounding the Bedele Administrative Town. The two study areas are located at the longitude of 36°21'E and latitude of 8°27'N (BBZOLF, 2019). Generally, in Bedele District, agriculture is the main source of income among the dwellers. Majority of the population practice mixed crop and livestock farming systems and livestock plays a fundamental role in agricultural activities (Mengistu *et al.,* 2019). Among different cattle breeds existing in the study areas, Horro cattle (Indigenous breed) is the dominant breed and some other crossbred cattle with different blood level and genotypes are also in existence (Mengistu *et al.,* 2019).

***Site selection and sampling technique*:** The two study sites; Bedele Town and Bedele District were purposively selected from Buno Bedele Zone of Oromia Region based on the association of cattle rearing experiences and road accessibility. Bedele District was further classified into lowland (less than 1600 m.a.s.l) and midland (1600-2500 m.a.s.l) based on altitude as criteria for the classification (EFEM, 2002). A representative total of six peasant associations (PAs) were selected from Bedele District using proportional purposive sampling based on density of PAs in the Bedele District. Generally, a total of 180 households were

selected and 60 of the respondents from Bedele Town and 120 from Bedele District. The experience of farmers in rearing cattle and their willingness to participate in the investigation was used as a base to select households using purposive sampling techniques.

***Data collection and analysis*:** Data were collected using a pre-tested structured questionnaire and secondary sources of data. The focus group discussion was held to develop the questionnaire. The data on general household characteristics, breeding and farming practices, indigenous selection criteria of cattle for breeding bull, dairy and fattening were collected from a total of 180 households of the study areas in the study year of 2019. The collected data were entered into MS Excel spreadsheet and the statistical packages for social sciences (SPSS V.20:0) was used for analysis. The descriptive statistic was employed to summarize the general information of the household. The chi-square analysis was used to assess the significant differences of breeding and farming practices across the study areas. Indices were calculated to analyze the ranking of individual response on the purpose of keeping cattle and selection criteria (for selecting a breeding bull, for fattening and dairy purposes). Indices were calculated using the formula as employed by Musa *et al.* (2006) for ranking of different parameters. The formula was:

$$\text{Index} = (R_n * C_1 + R_{n-1} * C_2 ... + R_1 * C_n)/(R_n * C_1 + R_{n-1} * C_2 ... + R_1 * C_n)$$

Where, R_n = the last rank (example if the last rank is 11th, then R_n = 11, R_{n-1} = 10, R_1 = 1). C_n = the frequency of respondents in the last rank, C_1 = the frequency of respondents ranked first. From the above formula; the "numerator" represented for "the sum given for the particular selection criteria" and the "denominator" for "the sum given for all selection criteria".

RESULT

The household characteristics of the two study areas were presented in (Fig. 1). Gender, age and educational status of the respondents were studied as general household characteristics. From Bedele District, 77.5 and 22.5 % of the respondents were male and female, whereas 70 and 30 % were recorded from Bedele Town, respectively. Most of the respondents were aged 31-40 years in both study areas. Regarding the educational status, 30% of the respondents from Bedele District were illiterate while 0% was recorded from Bedele Administrative Town. In general, 47.5 and 55 % of the households from Bedele District and Bedele Town completed their elementary school respectively.

***Farming system, mating system and breeding practices*:** The breeding and farming practices of households are presented in Table (1). Mixed livestock and crop farming system was fully practiced by all of the respondents in Bedele District, while

Table 1. Farming system, mating system and breeding practices in the study areas

Variables	Categories	Bedele Town		Bedele District			P - value
		N(60)	%	N (120)	%	X^2	
Farming system	Livestock farming only	54	90	0	0.0	154.30	0.000*
	Mixed livestock & Crop farming	6	10	120	100.0		
Mating system	Controlled mating	36	60	9	7.5	58.80	0.000*
	Uncontrolled mating	24	40	111	92.5		
Breeding practices	Random natural Mating	24	40	111	92.5	60.83	0.000*
	Natural mating by selected bull	9	15	0	0.0		
	Artificial Insemination	27	45	9	7.5		

X^2 = Chi-square. *p<0.05 = significantly different across the column

Table 2. Purpose of rearing cattle as per household ranking

Purposes	Bedele Town				Purposes	Bedele District			
	R1	R2	R3	Index		R1	R2	R3	Index
Milk	60	0	0	0.542	Milk	120	0	0	0.500
Cash	0	54	1	0.328	Draught	0	120	0	0.333
Investment	0	0	27	0.081	Cash	0	0	70	0.097
Draught	0	6	2	0.042	Dowry	0	0	30	0.042
Culture	0	0	2	0.006	Culture	0	0	20	0.028
Meat	0	0	0	0.000	Meat	0	0	0	0.000
Breeding Purpose	0	0	0	0.000	Breeding Purpose	0	0	0	0.000
Manure	0	0	0	0.000	Manure	0	0	0	0.000
Hide	0	0	0	0.000	Hide	0	0	0	0.000
Dowry	0	0	0	0.000	Investment	0	0	0	0.000
Ceremonies	0	0	0	0.000	Ceremonies	0	0	0	0.000

Index= sum of (3 X number of household ranked first + 2 X number of household ranked second + 1 X number of household ranked third) give for each purpose of rearing cattle divided by sum of all purpose of rearing cattle. R1= 1st ranked, R2 = 2nd ranked and R3 = 3rd Ranked.

10 % of the respondents were engaged in this system in Bedele Administrative Town. On the other hand, 90 % of the respondents are involved in livestock farming. The farming system in between the two study areas was statistically different at (p<0.05). The uncontrolled mating system of cattle was dominantly practiced by the respondents in Bedele District. In contrast, 60 and 40 % of the respondents applied controlled and uncontrolled mating system in Bedele Administrative Town, respectively. In breeding practices, random natural mating (40%), natural mating by selected bull (15%) and artificial insemination (45%) are practiced by the respondents in Bedele Administrative Town while in Bedele district, random natural mating is dominantly practiced. Significant differences (p<0.05) was observed in mating systems and breeding practices across the study areas.

Purpose of rearing cattle: The purpose of rearing cattle in the study areas is presented in Table 2. The result pertaining to the purpose of rearing cattle in Bedele Town revealed that; milk, cash and investment were ranked as first, second and third with an index value of 0.542, 0.328 and 0.081, respectively. The milk, draught and cash were ranked in the Bedele District with an index value of 0.500, 0.333 and 0.097, respectively.
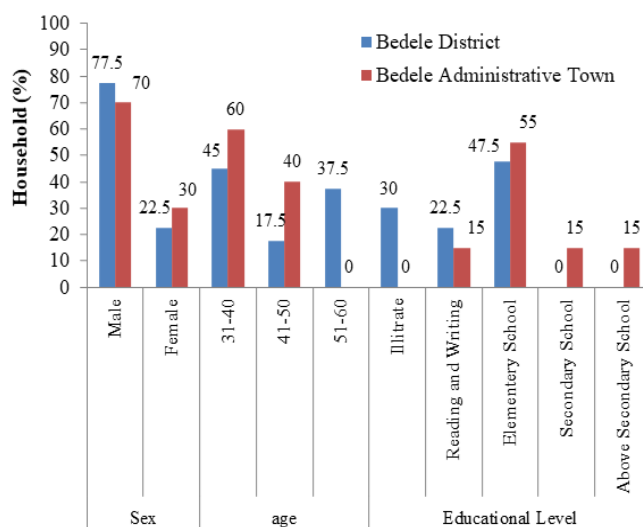
Figure 1. General information of households in percentage

Indigenous selection criteria of dairy cows: The indigenous selection criteria of cows for dairy purpose are presented in Tables 3&4. The result reveals that long teat & well-

Table 3. Selection criteria of dairy cows in Bedele Town

Traits	Rank											Index
	1	2	3	4	5	6	7	8	9	10	11	
Long teat & well-structured udder	60	0	0	0	0	0	0	0	0	0	0	0.167
Large & hollow body cavity	0	60	0	0	0	0	0	0	0	0	0	0.152
Wide Pelvic width	0	0	40	16	2	0	2	0	0	0	0	0.129
Hipbone & tail bone Prominent	0	0	13	15	31	0	1	0	0	0	0	0.116
Good milk veins	0	0	9	15	27	9	0	0	0	0	0	0.112
Straightened thigh	0	0	0	0	3	33	21	3	0	0	0	0.085
Docility	0	0	0	6	0	18	24	3	3	6	0	0.078
Fine tail (not too long) of a cow	0	0	0	0	3	0	3	54	0	0	0	0.064
Hair whorl at the center of back	0	0	0	0	0	0	9	0	51	0	0	0.050
Hind loin no flesh	0	0	0	0	0	0	0	0	0	51	9	0.028
Thin skin	0	0	0	0	0	0	0	0	6	3	51	0.019

Index = [(11 for rank 1) + (10 for rank 2) + (9 for rank 3)+(8 for rank 4)+(7 for rank 5)+ (6 for rank 6)+ (5 for rank 7)+ (4 for rank 8)+ (3 for rank 9)+ (2 for rank 10)+(1 for rank 11)] for each of the trait divided by sum of all the traits

Table 4. Selection criteria of dairy cows in Bedele District

Traits	Rank											Index
	1	2	3	4	5	6	7	8	9	10	11	
Long teat & well-structured udder	96	24	0	0	0	0	0	0	0	0	0	0.164
Large & hollow body cavity	24	88	4	3	1	0	0	0	0	0	0	0.153
Wide Pelvic width	0	8	68	33	5	0	6	0	0	0	0	0.129
Hipbone & tail bone Prominent	0	0	34	24	62	0	0	0	0	0	0	0.118
Good milk veins	0	0	20	30	52	18	0	0	0	0	0	0.113
Straightened thigh	0	0	0	12	0	48	46	6	6	2	0	0.083
Docility	0	0	0	0	6	54	44	6	0	10	0	0.080
Fine tail (not too long) of a cow	0	0	0	0	6	0	6	108	0	0	0	0.064
Hair whorl at the center of back	0	0	0	0	0	0	18	0	102	0	0	0.050
Hind loin no flesh	0	0	0	0	0	0	0	0	0	102	18	0.028
Thin skin	0	0	0	0	0	0	0	0	12	6	102	0.019

Index = [(11 for rank 1) + (10 for rank 2) + (9 for rank 3)+(8 for rank 4)+(7 for rank 5)+ (6 for rank 6)+ (5 for rank 7)+ (4 for rank 8)+ (3 for rank 9)+ (2 for rank 10)+(1 for rank 11)] for each of the trait divided by sum of all the traits

Table 5. Selection criteria of breeding bull in the study areas

Traits	Bedele Town								Bedele District							
	Rank							Index	Rank							Index
	1	2	3	4	5	6	7		1	2	3	4	5	6	7	
Large scrotum	48	3	0	9	0	0	0	0.232	114	6	0	0	0	0	0	0.248
Long penis and short thick neck	3	39	18	0	0	0	0	0.205	6	78	36	0	0	0	0	0.205
Good temperament	4	17	36	0	3	0	0	0.19	0	36	83	0	1	0	0	0.189
Straight and strong hump	5	1	6	48	0	0	0	0.157	0	0	1	114	5	0	0	0.142
Broader ear	0	0	0	0	57	0	3	0.104	0	0	0	0	105	0	15	0.098
Long tail	0	0	0	3	0	57	0	0.075	0	0	0	6	0	114	0	0.075
Large voice	0	0	0	0	0	3	57	0.038	0	0	0	0	9	6	105	0.043

Index = [(7 for rank 1) + (6 for rank 2) + (5 for rank 3)+(4 for rank 4)+(3 for rank 5)+ (2 for rank 6)+ (1 for rank 7)] for each of the trait divided by sum of all the traits

structured udder, large & hollow body cavity and wide pelvic width were ranked 1st, 2nd and 3rd with an index value of 0.167, 0.152 and 0.129 for Bedele Town and 0.164, 0.153 and 0.129 for Bedele District, respectively. The Hipbone & tail bone prominent, good milk veins, straightened thigh, docility, fine tail (not too long) of a cow, hair whorl at the center of the back, hind loin no flesh and thin skin were ranked from 4th to 11th respectively in both Bedele Administrative Town and Bedele District. However, both Bedele Administrative Town and District showed similar trend with different magnitude towards indigenous selection criteria of cows for dairy purpose.

Indigenous selection criteria of bull for breeding purpose: Indigenous knowledge for selecting a breeding bull in the study areas is presented in Table 5. Large scrotum, long penis & short thick neck and good temperament were the criteria ranked as first, second and third for selecting bull with an index value of 0.232, 0.205 and 0.19 for Bedele Town and 0.248, 0.205 and 0.189 for Bedele District, respectively.

Indigenous selection criteria of cattle for fattening: For indigenous selection criteria of cattle for fattening, Fig. 2 shows that flat backbone, body length & muscularity, fit & straighten legs and castration were ranked from 1st to 4th with an index value of 0.373, 0.275, 0.211 and 0.142 in Bedele Town, respectively. Similar results were observed in Bedele District, respectively.
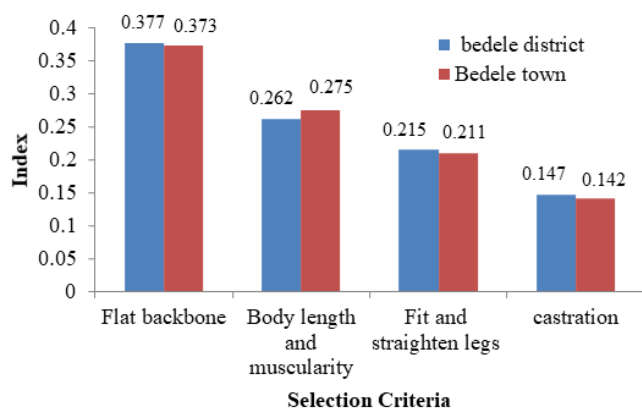
Figure 2. Indigenous selection criteria of cattle for fattening

DISCUSSION

General household characteristics: Among the household characteristics of the study areas, the classification of respondents (house head) indicated that most of the interviewed participants were male in both study areas. Compared with Bedele District, the proportion of male is almost the same in Bedele Town. This implies that the male individuals are stronger than females and can perform difficult task in cattle rearing. Regarding age, most of the participants were between 31 to 40 years of age. This implies that there is possibility of improving the product and productivity from cattle rearing through adoption of new technologies by engaging the active population. The educational status indicates higher proportion of illiterates in Bedele District whereas non was recorded in Bedele Town. The result further revealed that above 47% of the households completed their elementary school in both study areas. In addition, the household owners of Bedele Town completed their secondary school while some attended higher institution. This implies that those participants living in the Town had greater opportunities in terms of schooling.

Farming system: The present study indicated that there is a significant difference (p<0.05) in farming system between Bedele District and Bedele Town. Mixed crop and livestock farming was dominant in Bedele district compared with Bedele Town. This implies that, there is vast land in the rural areas which encourages such farming system. These results supported an earlier study done by Mengistu *et al.* (2019). The authors added that almost all the farmers rearing livestock in Bedele, Chora and Gechi were engaged in mixed farming. However, the authors acknowledged that the District produced some of the economic crops such as chat (*Catha edulis*) coffee and other annual and perennial crops besides livestock farming. On the other hand, few individuals were engaged in mixed farming in Bedele Town. This is attributed to lack of land as well as urbanization which exists in Township.

Mating system and breeding practices: Mating system and breeding practices play a vital role on livestock improvement scheme. As shown in Table 1, the result revealed that most of the farmers engaged in uncontrolled mating system in Bedele District. In Bedele Town, a higher proportion of farmers practice controlled mating system. This indicates that some of the farmers are into improvement scheme, which gives quicker genetic gain. The use of natural bull service through uncontrolled and unplanned mating is rampant in Bedele District compared with Bedele Town. Similar results have been reported by those of Mekonnen *et al.* (2012) in Western Oromia, Ethiopia. Tegegne *et al.* (2013) made similar observation in the rural area of Ethiopia where free range mating is predominant in the region. This could also be attributed to lack of awareness, shortage of information as well as lack of implementing the advice provided by agricultural extension workers, loss of trust in using AI and absence of selected bull for natural mating system. Mengistu *et al.* (2019) earlier reported similar findings. Compared with Bedele Town, most of the farmers are engaged in controlled mating due to the animals are kept under control environment. This approach has additional advantage that it does in improving economically important traits.

For those farmers engaged in controlled mating system, it was observed that 15% and 45% used selected natural bull and artificial insemination in Bedele Town, respectively. On other hand, few farmers practiced controlled mating with artificial insemination (AI) in Bedele district. Similar observations have been reported in Hulet Eju Enese District of East Gojjam Zone of Ethiopia (Zewdu *et al.*, 2018). In contrast, a higher proportion of farmers practiced random natural (uncontrolled) mating system in Bedele District. The present findings revealed a higher proportion of farmers in Bedele District compared with those reported by Misganaw *et al.* (2014). The high proportion of using AI in Bedele town is probably because there is accessibility of AI services and also improved selected bull for controlled natural mating services. However, the selected natural bull in Bedele district is not frequently

used due to the bull is not kept for breeding purpose. Also, lack of awareness and ability to reduce inbreeding in the cattle population were among the reasons. For the purpose of using AI in Bedele District, small proportions of farmers were engaged and this could be due to loss of trust while using technology for genetic improvement. More so, lack of interest, low efficiency of AI services, religion and traditional beliefs contributed to limited proportion of using AI in the study areas.

*Purpose of rearing cattle***:** Cattle's rearing in the study areas has significant importance in day to day life of the inhabitants. The result of this study indicated that milk, cash and investment were ranked 1st, 2nd and 3rd purpose of rearing cattle in Bedele Administrative Town. The result of this finding is in agreement with the study reported by (Hailemariam and Tsehay, 1995). The authors added that the primary purpose of rearing cattle was for milk production as well as generating income. In Bedele District, farmers kept cattle for the purpose of milk, draught and cash. Similar observations were reported by Mengistu *et al.* (2019) in Bedele District, Ethiopia. Although, this result does not fully agree with Bayou *et al.* (2014), who observed a slight difference from Midland area of Bench Maji Zone that Sheko cattle were primarily used for draught followed by milk and income. The results further revealed that the primary purpose of rearing cattle in both study areas was somewhat different due to the farming system. Nevertheless, these differences in results may be due to land shortage and methods of rearing cattle (intensive, semi-intensive and free range).

Indigenous selection criteria of dairy cows: For the purpose of indigenous selection criteria of dairy cows, it is evident that cows with long teat & well-structured udder, large & hollow body cavity and wide pelvic width were ranked as 1st, 2nd and 3rd in both study areas (Table 3 & 4). Our results agree with those of Banerjee *et al.* (2014), who reported that long teat is an indicator for dairy cows. The authors added that the trait is of great importance in selecting dairy cows. Morse *et al.* (1988) in this regard agreed with our results by showing that cows with long teat are less susceptible to mastitis. For this reason, long teat channel helps to prevent infectious diseases due to the teat channel cessations after milking and stopping the association between udder tissues and external environments (Alphonsus, *et al.,* 2010; Yakubu, 2011). Several authors have reported that udder size and pelvic width are used for selecting dairy cows in Northern Amhara Region and East Gojam Zone of Ethiopia (Misganaw *et al.,* 2014; Zewdu *et al.,* 2018). The present finding also revealed that farmers preferred cows with wider pelvic size as one of the major selection criteria for dairy cows. This is because cows with wider pelvic size may not have difficulties during calving (dystocia). Similar observations have been reported by those of Misganaw *et al.* (2014) and Zewdu *et al.* (2018). Udder size was found as one of the selection criteria in the study areas. More recently, udder size has been reported by

Soeharsono *et al.* (2020), who observed correlation between udder size and milk production. This correlation is due to milk secretion is highly associated with the development of mammary gland of the udder, and it is in line with the previous findings of Gowen and Tobey (1927) and Gorewit (1979). Large & hollow body cavity was observed as a selection criterion for dairy cows in the study areas. Banerjee *et al.* (2014) reported similar result in several southern indigenous communities of Ethiopia.

*Indigenous selection criteria for breeding bull***:** The first three ranked major selection criteria of bulls for breeding purpose were large scrotum, long penis & short thick neck and good temperament (Table 5). Our results agree with those of Banerjee *et al.* (2014) in the indigenous community of Southern Ethiopia. Normally developed and large equal scrotum is an indicator of good and fertile bull. This implies that well-developed and large scrotum is expected to produce large amount of sperm cells. Hammond *et al.* (1971) in this regard, previously reported similar findings. Length of the penis was important in the study areas and majority of the respondents further selected bulls with long penis. This implies that bulls with long penis would have easy penetration in the female genital organ thereby increasing the chances of fertility and conception. In contrast, loss of fertility and misconception is associated to bulls with short penis. Several authors have reported similar results (Hussen, 2007; Bruce, 2012; Banerjee *et al.,* 2014). The correlation between length of penis and fertility may be related to the role of cremaster muscle, which controls the movement of the penile sheath for proper mating and deposition of sperm cell at the proper reproductive tract of cows for better fertility. Furthermore, bulls with short and thick neck were considered as good breeding bulls in the study areas, and this is in accordance with those of Banerjee *et al.* (2014). It has been reported that bulls with short and thick neck is an indicator of good libido (Hammond *et al.,* 1971). A bull with good temperament is another indicator for selecting breeding bulls. Similar findings have been reported (Banerjee *et al.,* 2014; Hamlyn-Hill, 2014).

*Indigenous selection criteria of cattle for fattening***:** The result presented in Fig. 2 indicated that flat backbone, body length & muscularity, fit & straighten legs were the major selection criteria of cattle for meat purpose in the study areas. Previous studies have reported flat backbone, body length and muscularity as indicators for muscle confirmation (By Farmers for Farmers, 2017). The authors suggested that the first class of carcasses have a bulge at the hock and hindquarter, which are desirable traits for selecting cattle for fattening. Banerjee *et al.* (2014) also reported that fit & straighten legs are associated with meat-type cattle.

*Conclusions***:** In conclusion, the study revealed that the farmers in Bedele Town and Bedele District practice controlled and uncontrolled mating systems. However, the

majority of the respondents in Bedele District are engaged in uncontrolled mating system using unselected natural bulls. This study further revealed progress in using AI and selected bull in terms of controlled mating system in Bedele Town. The use of indigenous knowledge for selecting dairy, breeding and fattening cattle was common among the farmers in the study areas. The purpose of rearing cattle, breeding practices and indigenous selection criteria of farmers should be considered as the basic for genetic improvement scheme in the study areas. The study suggests that awareness should be created on the impact of uncontrolled mating system across production and reproduction performances of cattle and its consequences.

*Conflicts of Interest***:** The author declares no conflicts of interest.

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