

# Consumers' Perceptions on the Quality Attributes of Buna Qalaa and Its Trend of Consumption in Borana Zone, Oromia, Ethiopia

Abiyot Lelisa

Food Science Research Directorate, Oromia Agricultural Research Institute (IQQO),

Addis Ababa, P.O.Box 81265, Ethiopia

E-mail of the corresponding author: abiyotlelisa@gmail.com

## Abstract

Coffee is consumed worldwide as stimulant, and Ethiopia is the birth place of this important commodity. Coffee is consumed in different formats around the world. For instance, *Buna Qalaa* - form of coffee meal is consumed in Ethiopia. The aim of this study was to investigate consumers' perception on the trend of *Buna Qalaa* consumption and quality in Borana Zone, Oromia. The quality parameter for *Buna Qalaa*, its consumption frequency, forms of coffee preferred by consumers and willingness to buy it if available for sale was assessed. Data were collected through face to face interview and the data were triangulated with group discussion. The data were analysed using SPSS and descriptive statistics were used to assess the respondents' responses. The trend of *Buna Qalaa* consumption (66.7 %) and quality (63.0 %) had decreased in Borana Zone according to the respondents. The decrease in the trend of *Buna Qalaa* consumption was due to preference to drink coffee and scarcity of input (s) for its preparation. Use of vegetable oil instead of butter was the main reason for the decrease in the trend of *Buna Qalaa* quality. About 44.4 % of the respondents consume *Buna Qalaa* on daily basis. According to the respondents the quality parameters for *Buna Qalaa* is crispy texture (67.4 %), black color (70.5 %) and good aroma. Majority of the respondents (85.1 %) preferred to consume *Buna Qalaa* to drink coffee and were not willing to buy (41.8 %) it if available for sale. About 68.4 % of respondents agreed that frequent consumption of *Buna Qalaa* may lead to health complications. There is a difference between current and past *Buna Qalaa* preparation technique according to the respondents. Majority of the respondents agreed that *Buna Qalaa* prepared with only butter could be kept for a month. *Buna Qalaa* is consumed by the community in Borana and it can be availed for sale as a ready to consume food and create new job for the youth (production and distribution). A good quality *Buna Qalaa* could be prepared based on consumers' set parameter from a good quality inputs. Further study on nutrient composition, health effect and shelf life of *Buna Qalaa* need to be conducted.

**Keywords:** *Buna Qalaa*, Traditional food, Borana, Oromo, Perception, Quality, Trend

**DOI:** 10.7176/FSQM/117-01

**Publication date:** July 31<sup>st</sup> 2022

## 1. Introduction

Coffee is a very important commodity in Ethiopia. It is the main source for foreign exchange in Ethiopia and it provides a livelihood income for about 16 % population. About 50 % of the coffee produced is consumed locally (Amamo, 2014). *Buna Qalaa* is the coffee meal which is prepared from dried coffee berries by cooking them with butter after washing appropriately and cutting the tip off each coffee bean with one's teeth (Bacha *et al*, 2018). *Buna Qalaa* has both food and social value. Coffee was previously consumed as food before its use as a drink (Clarke, 1985; Wayessa, 2011). Traditional ghee is added to *Buna Qalaa* (Gemechu and Tola, 2017) which could improve the nutrition supply of individuals. Among the Borana people, *Buna Qalaa* is an integral part of their daily life and practiced by each family (Bacha *et al*, 2018). The traditional *Buna Qalaa* ceremony is presented during public meeting (Elemo, 2006) and served during special occasions and holidays (Gemechu and Tola, 2017)

The use of traditional food/drink may be affected by change in life style of the consumers. This life style may affect its use negatively or positively. It is noted that due to change in lifestyle, traditional foods are at a risk of disappearing in Europe (Trichopoulou *et al*, 2006; Costa *et al*, 2010). Traditionally, *Buna Qalaa* has been used by the rural community in Oromiya especially in Coffee growing areas. Its use and preparation techniques are handed from generation to generation. Traditional food or drink of good quality and safe can be commercialized to generate income for the community. As far as literature is concerned there are no documented information regarding consumers' perceptions on quality parameters of *Buna Qalaa*, its use trends. Therefore, this study will reveal information on the quality parameters of *Buna Qalaa* as identified by the community and its trends of use among the community.

## 2. Methodology

The study was conducted in Borana Zone of Oromia Regional State located in the southern part of the country. Yabelo is the capital city of Borana and located 565 kms away from Addis Ababa. The Zone is inhabited by more

of pastoral and agro pastoral community. The study area is characterized by bimodal rainfall. *Gana*-long rainy season extending from March to May and *Hagaya*-short rainy season extending from September to November (Cossins and Upton, 1987).

Study districts were selected purposefully with *Buna Qalaa* consumption practice (Figure 1). Dubluk, Arero and Gomole districts were selected for the study. From each district three Peasant Associations (PAs) were selected purposefully taking in to considerations availability of *Buna Qalaa* consumption practices. Data were collected using questionnaires - individual interview and triangulated with group discussions. One hundred thirty five (135) respondents were interviewed, about fifteen respondents per PA. Data were analysed using Statistical Packages for Social Science (SPSS version 20.0). Descriptive statistics were used to analyse consumers' perceptions on quality attributes of *Buna Qalaa* and its trend of consumption.



Figure 1. Map of Borana Zone taken from Yeneayehu and Tihunie (2020) with modification

### 3. Results and Discussion

#### 3.1. Demographic Characteristics of the respondents

The participants of the study comprises of 58.5 % male and 41.5% female. Different age groups participated in the study. Of all age groups participated on the survey, age category of 36-45 years was higher. Most of the participants of the study had pastoral livelihoods (Table 1). Majority of the respondents were middle income segment of the community.

Table 1. Demographic characteristics of the respondents

Demographic Characteristics		%
Gender	Male	58.5
	Female	41.5
Age of Respondents	20-35	25.6
	36-45	31.6
	46-55	17.3
	>56	25.5
Respondents' Livelihoods	Pure pastoral	46.3
	Agro-pastoral	51.5
	Others	2.2
Wealth category	Rich	5.2
	Middle Income	60.0
	Poor	34.8

#### 3.2. Consumption frequency of Buna Qalaa

Consumption frequency of *Buna Qalaa* varied from once in a day to once in a week. About 44.4 % of the

respondents consumed *Buna Qalaa* on a daily basis (Table 2.). The consumption frequency of *Buna Qalaa* was lower when compared with normal coffee in which people drink three times per day during non-fasting days (Mohammed and Jambo 2015). The variation in consumption frequency of *Buna Qalaa* by the respondents could be attributed to preference for drinking coffee and absence of inputs such as butter and milk.

Table 2. Consumption frequency of *Buna Qalaa*

		Respondents' Consumption Frequency					Total
		Daily	Three times in a week	Twice in a week	Once in a week	Others	
Study Districts	Gomole	13.3 %	5.9 %	6.7 %	4.4 %	3.0 %	33.3 %
	Arero	14.8 %	5.9 %	6.7 %	3.7 %	1.5 %	32.6 %
	Dubluk	16.3 %	7.4 %	7.4 %	3.0 %	0.0 %	34.1 %
Total		44.4 %	19.2 %	20.8 %	11.1 %	4.5 %	100.0%

### 3.3. Trend of *Buna Qalaa* Consumption

About 66.7 % the respondents agreed that the trend of *Buna Qalaa* consumption had decreased in the study area (Table 3). Few respondents (10.4 %) agreed that there were an increase in *Buna Qalaa* consumption which could be attributed to awareness on culture. Borana people prepare *Buna Qalaa* as sign of peace and people are more accustomed to it according to the respondents.

Respondents gave different reasons for the decrease of the trend of *Buna Qalaa* consumption. Preference to drink coffee, decrease in availability of butter and milk due to recurrent drought in the study area, preference to drink tea, weakening of culture and restriction by religion are the factors that contribute to the decrease in the trend of *Buna Qalaa* consumption. The major reason for the decrease of trend of *Buna Qalaa* differs from district to district according to the respondents (Figure 2a). The difference could be attributed difference in respondents' livelihood (Figure 2b).

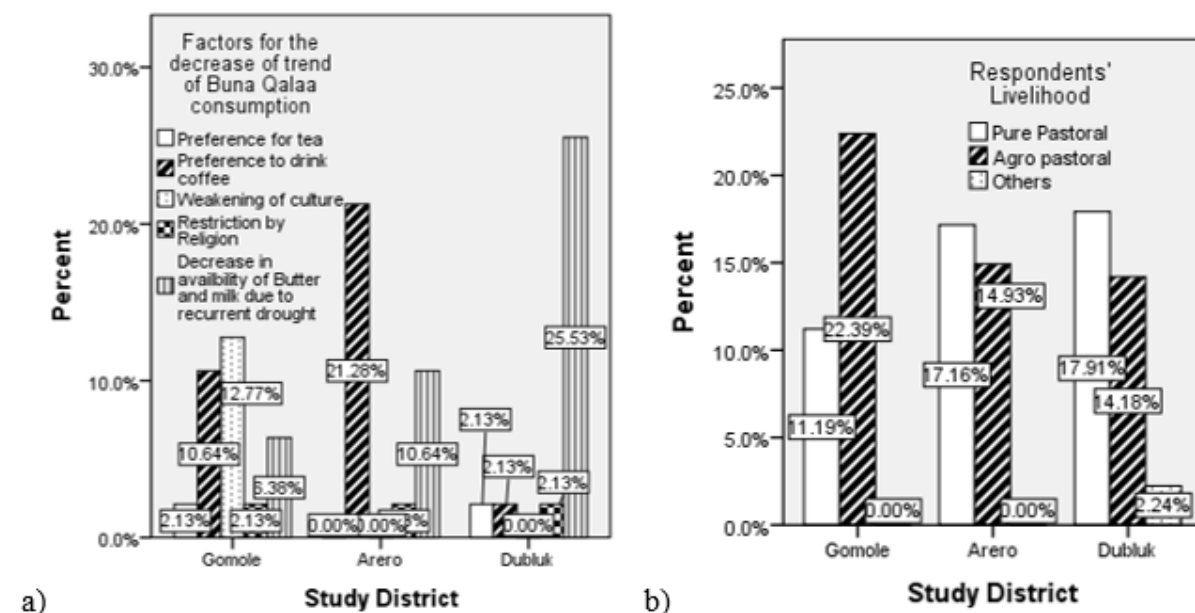


Figure 2. a) Factors for the decrease of trend of *Buna Qalaa* consumption and b) respondents' livelihood system  
 Availability of butter and milk had a lion share for the decrease of *Buna Qalaa* consumption. This might imply that climate change not only affect the availability of dairy products it also could affect cultural practice. The increase in road side coffee stalls (Mohammed and Jambo 2015) may affect consumption of *Buna Qalaa*. Study also showed that consumers may be reluctant in the preparation of traditional food due to unavailability of ingredients (Roudsari *et al.* 2019). The decrease in the consumption of *Buna Qalaa* could be also attributed to change in people's life styles which changes their food consumption patterns (Vasantha1 *et al.* 2015; Tuma 2018) and new generation has less interest on traditional food (Bultosa *et al.* 2020). Study in Ghana showed low consumption of traditional foods (Laryea *et al.* 2016). Consumption of other local stimulants such as *khat* and alcoholic beverages that were practiced could be the reason for the decrease of trend of *Buna Qalaa* consumption (Beyero *et al.* 2004)

Table 3. Trend of *Buna Qalaa* Consumption

		Trend of <i>Buna Qalaa</i> consumptions			Total
		Increase (%)	Decrease (%)	No change (%)	
Study Districts	Gomole	5.2 %	20.0 %	8.1 %	
	Arero	3.7 %	23.0 %	5.9 %	
	Dubluk	1.5 %	23.7 %	8.9 %	
Total		10.4 %	66.7 %	22.9 %	100 %

### 3.4. Season of Consumption of *Buna Qalaa*

*Buna Qalaa* is prepared and consumed for different ceremonial practices in Borana. Its consumption as a stimulant varies along the seasons. In all the studied districts there were more frequent consumption of *Buna Qalaa* (60.6 %) during *Ganna* season (long rainy season-March to May) (Figure 3). Factors that affect the seasonal fluctuation of consumption of *Buna Qalaa* were availability of inputs such as butter and milk. There is a limited supply of milk and milk products during dry season in the study area (Tolera and Abebe 2007). The more availability of butter and milk, more consumption of *Buna Qalaa*. Other factor included was availability of traditional festival.

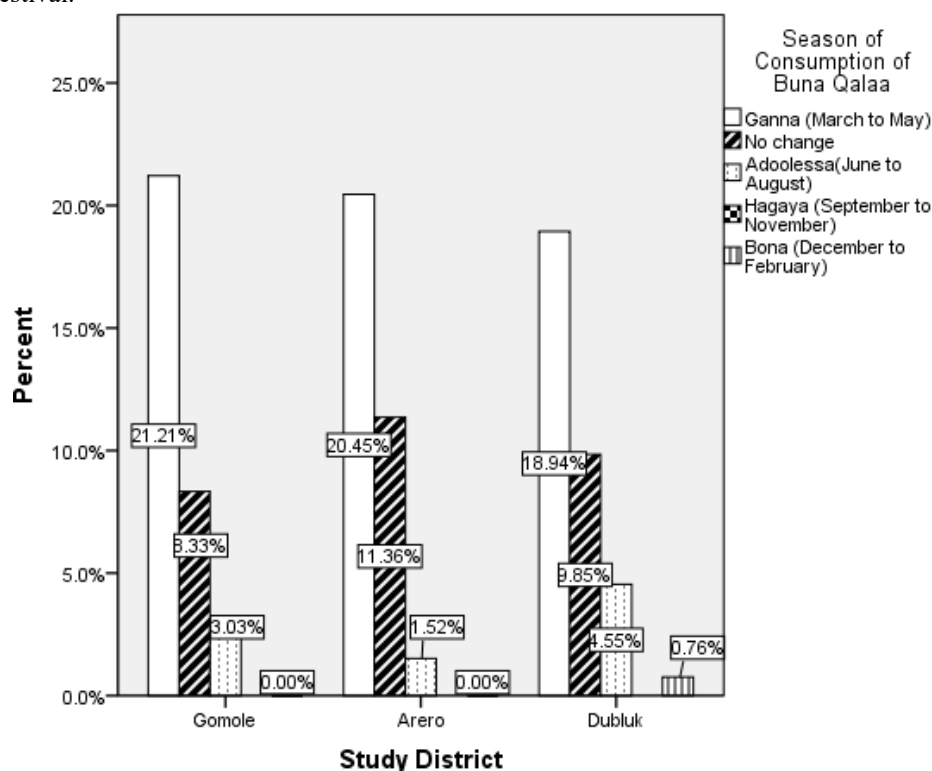


Figure 3. Season of consumption of *Buna Qalaa* as stimulant

The respondents practiced to change *Buna Qalaa* consumption frequency during drought years (Figure 4.) The change in consumption frequency during drought season in all districts were attributed to the availability of the inputs. During the drought year, butter is scarce due to scarce pasture for cattle feeding.

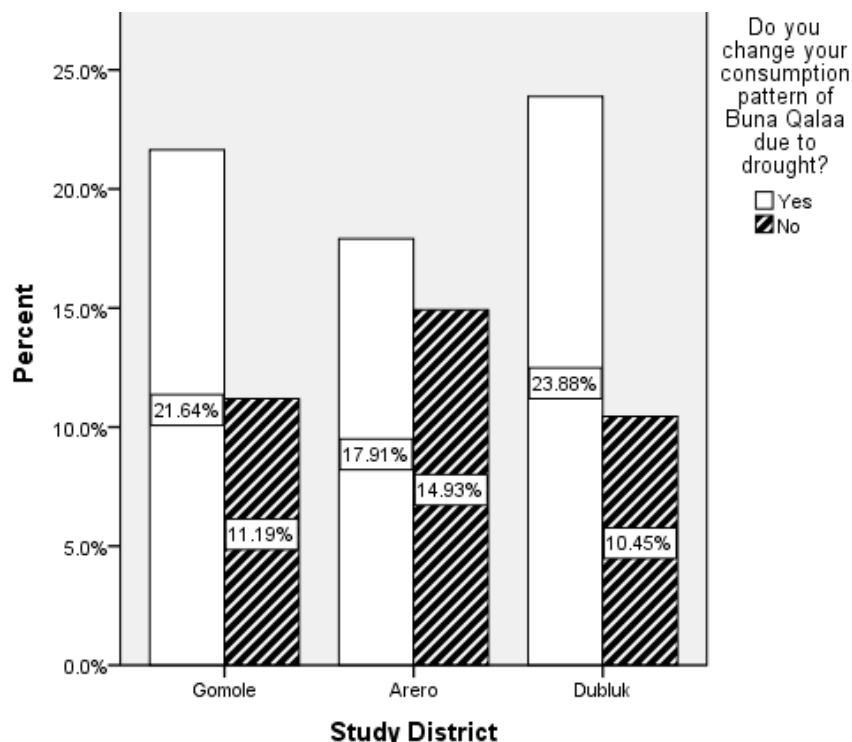


Figure 4. Change of consumption pattern of *Buna Qalaa* during drought years by respondents

### 3.5. Consumers' Perceptions on the Quality Attributes of *Buna Qalaa*

The quality of a food product determines its acceptability among the consumers. For *Buna Qalaa* to be considered as good quality it should be prepared from good quality raw materials and must not be replaced by other raw materials i.e. butter should not be replaced by vegetable oil. Texture, color and aroma of *Buna Qalaa* were considered by respondents as quality attributes. The aroma of the product is expected to be good. Spices need to be added. The textural property of *Buna Qalaa* preferred by consumers according to the respondents (67.4 %) was crispy. The color of *Buna Qalaa* preferred by consumers was black 70.5 % (Table 4). Color affects food acceptability by consumers (Clydesdale, 1993) which is affected by the degree of cooking i.e. monitoring the cooking time and heat intensity applied.

Table 4. Texture and color of *Buna Qalaa* preferred by respondents' as quality indicator

		Texture		Total
		Non- crispy	Crispy	
Study District	Gomole	25.0%	75.0%	100.0%
	Arero	31.0%	69.0%	100.0%
	Dublik	41.3%	58.7%	100.0%
<b>Total</b>		<b>32.6%</b>	<b>67.4%</b>	<b>100.0%</b>
		Color		
		Black	Dark Brown	
Study District	Gomole	77.3%	22.7%	100.0%
	Arero	54.8%	45.2%	100.0%
	Dublik	78.3%	21.7%	100.0%
<b>Total</b>		<b>70.5%</b>	<b>29.5%</b>	<b>100.0%</b>

Respondents in Gomole district preferred crispy texture of *Buna Qalaa* when compared with Arero district - which also preferred more crispy texture than Dubluk district. This could be attributed to livelihood system, pastoral communities (Figure 2b) prefer *Buna Qalaa* that could get masticated. Age group of 36-45 years preferred less crispy than other age groups in the study (Table 5).

Table 5. Texture of *Buna Qalaa* preferred by consumers within gender and respondents' age

		Texture		Total
		Non-crispy	Crispy	
Gender	Male	32.9%	67.1%	100.0%
	Female	32.1%	67.9%	100.0%
Respondents' age	20-35 Years	28.6%	71.4%	100.0%
	36-45 Years	38.7%	61.3%	100.0%
	46-55 Years	25.0%	75.0%	100.0%
	Above 55 Years	34.7%	65.3%	100.0%

Female respondents prefer dark brown *Buna Qalaa* than male respondents (Table 6). This preference could be sweet nature of the product according to respondents. Old aged groups respondents preferred to consume black color *Buna Qalaa*.

Table 6. Color of *Buna Qalaa* preferred by consumers within gender and respondents' age

		Color of <i>Buna Qalaa</i>		Total
		Black	Dark Brown	
Gender	Male	72.8%	27.2%	100.0%
	Female	66.7%	33.3%	100.0%
Respondents' age	20-35 Years	62.1%	37.9%	100.0%
	36-45 Years	67.7%	32.3%	100.0%
	46-55 Years	69.6%	30.4%	100.0%
	Above 55 Years	77.6%	22.4%	100.0%

### Factors that affect the quality of *Buna Qalaa*

There are different factors that affect the quality of *Buna Qalaa* according to the respondents. These factors included the quality of ingredients, hygiene and preparation techniques. The coffee berry quality, butter quality and milk quality were important ingredients whose quality should be controlled (Figure 5). Although there was difference among the districts on the perceptions, the quality of coffee berry plays a crucial role on the quality of the final product, Freshness of the coffee meal was not very important attributes of *Buna Qalaa* according to the respondents. This could be due to the fact that the product could be used with milk or without milk. *Buna Qalaa* with milk is used as soon as it is prepared whereas it can be kept for long time without milk.

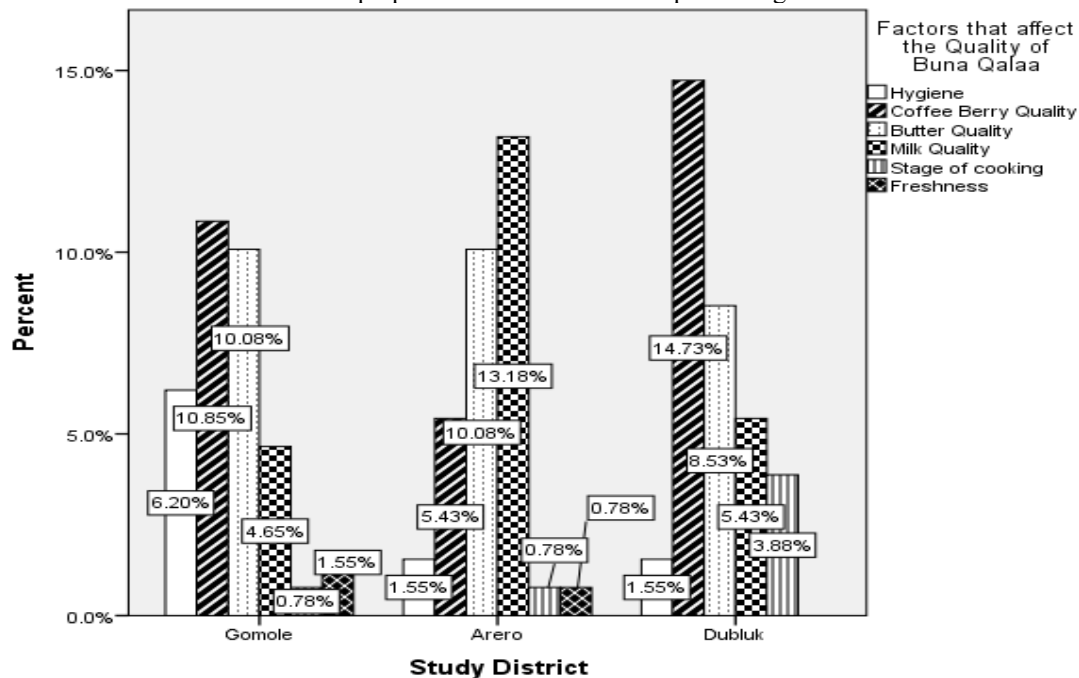


Figure 5. Factors that affect the Quality of *Buna Qalaa* according to the respondents

### 3.6. Trend of *Buna Qalaa* Quality

The trend of *Buna Qalaa* quality had been deteriorating from time to time (63.0 %) according to the respondents



in the study area (Table 7). All age categories agreed on the trend of *Buna Qalaa* quality to decrease and respondents' of age group 46-55 and above 55 years agreed the decrease of quality of *Buna Qalaa* than younger age group. Both male and female respondents agreed that the quality of *Buna Qalaa* was decreasing (Table 8).

Table 7. Trend of *Buna Qalaa* Quality according the respondents

		Trend of Buna Qalaa from time to time			Total
		Increase	Decrease	No change	
Study District	Gomole	24.4%	60.0%	15.6%	100.0%
	Arero	31.8%	50.0%	18.2%	100.0%
	Dubluk	13.0%	78.3%	8.7%	100.0%
Total		23.0%	63.0%	14.1%	100.0%

According to the respondents, the trend of *Buna Qalaa* has been decreasing from time to time due to the use of milk from non-fumigated container, use of non-organic and diseased coffee berry and use of vegetable oil for preparation of *Buna Qalaa* (Figure 6). Of all factors use of vegetable oil for the preparation of *Buna Qalaa* is becoming a common practice in the study area due to low availability of butter which could be attributed to recurrent drought.

Table 8. Trend of *Buna Qalaa* Quality within some attributes of the respondents

		Trend of <i>Buna Qalaa</i> Quality			Total
		Increase	Decrease	No change	
Gender	Male	23.5%	61.7%	14.8%	100.0%
	Female	22.2%	64.8%	13.0%	100.0%
Respondents' age	20-35 Years	20.0%	53.3%	26.7%	100.0%
	36-45 Years	41.9%	45.2%	12.9%	100.0%
	46-55 Years	12.5%	75.0%	12.5%	100.0%
	Above 55 Years	18.0%	74.0%	8.0%	100.0%
	Others	16.1%	71.0%	12.9%	100.0%
Respondent's livelihood	Pure Pastoral	29.0%	55.1%	15.9%	100.0%
	Agro pastoral	100.0%			100.0%
	Others				100.0%

*Buna Qalaa* prepared using vegetable oil is of low quality. Study showed that due to decrease in the supply of butter, oil has been used as a replacement of butter (Bacha *et al.* 2018). Respondents also gave reason for a minor increase in trend of *Buna Qalaa* quality due to awareness created on sanitation.

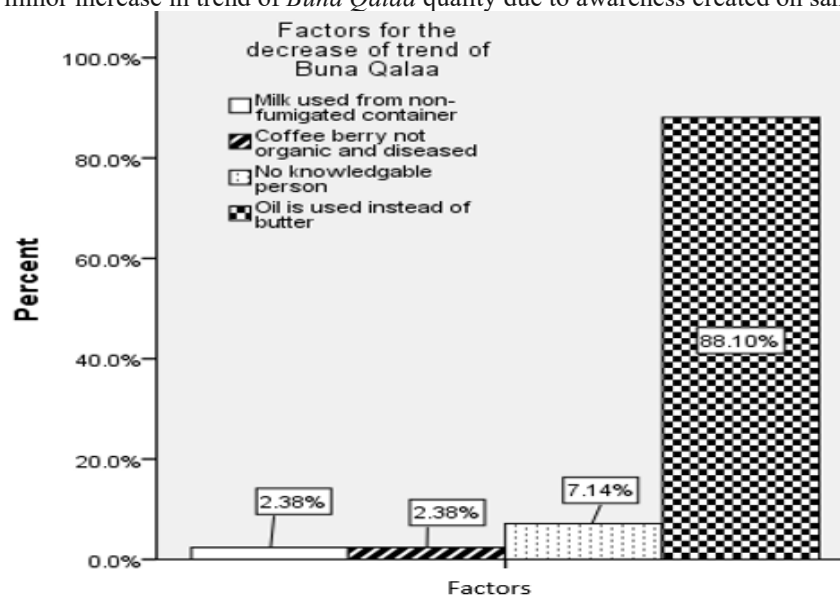


Figure 6. Factors for the decrease of trend of *Buna Qalaa* in Borana according to the respondents

### 3.7. Forms of coffee preferred by the consumers

Coffee can be served in different forms in the community. It can be drunk or chewed as *Buna Qalaa*. Most of the respondents (85.1 %) in the study area preferred to consume *Buna Qalaa* as a stimulant than drinking coffee (Table 9). Within the gender, male respondents preferred to consume it whereas within age groups those of greater than 46 years prefer to consume *Buna Qalaa* than younger ones (Table 9).

Table 9. Forms of coffee preferred by consumers as a stimulant within districts, gender, age and respondents' livelihood

		Forms of coffee preferred by consumers as a stimulant		Total
		Prefer to drink coffee	Prefer to consume <i>Buna Qalaa</i>	
Study District	Gomole	20.0%	80.0%	100.0%
	Arero	14.0%	86.0%	100.0%
	Dubluk	10.9%	89.1%	100.0%
<b>Total</b>		<b>14.9 %</b>	<b>85.1%</b>	<b>100.0%</b>
Gender	Male	12.3%	87.7%	100.0%
	Female	18.9%	81.1%	100.0%
Respondents' age	20-35 Years	17.2%	82.8%	100.0%
	36-45 Years	25.8%	74.2%	100.0%
	46-55 Years	8.3%	91.7%	100.0%
	Above 55 Years	10.0%	90.0%	100.0%
Respondents' livelihood	Pure Pastoral	19.4%	80.6%	100.0%
	Agro pastoral	10.3%	89.7%	100.0%
	Others	33.3%	66.7%	100.0%

*Buna Qalaa* (prepared with butter) could be served with milk, without milk or with honey according to the respondents. Most of the respondents (75.94 %) prefer *Buna Qalaa* with milk (Figure 7). They preferred it because of nutrient content-milk is more nutritious. They also accustomed to consume this type of *Buna Qalaa*. It could also get more masticated. Those respondents who preferred to consume *Buna Qalaa* prepared using only butter appreciated its high stimulating effect.

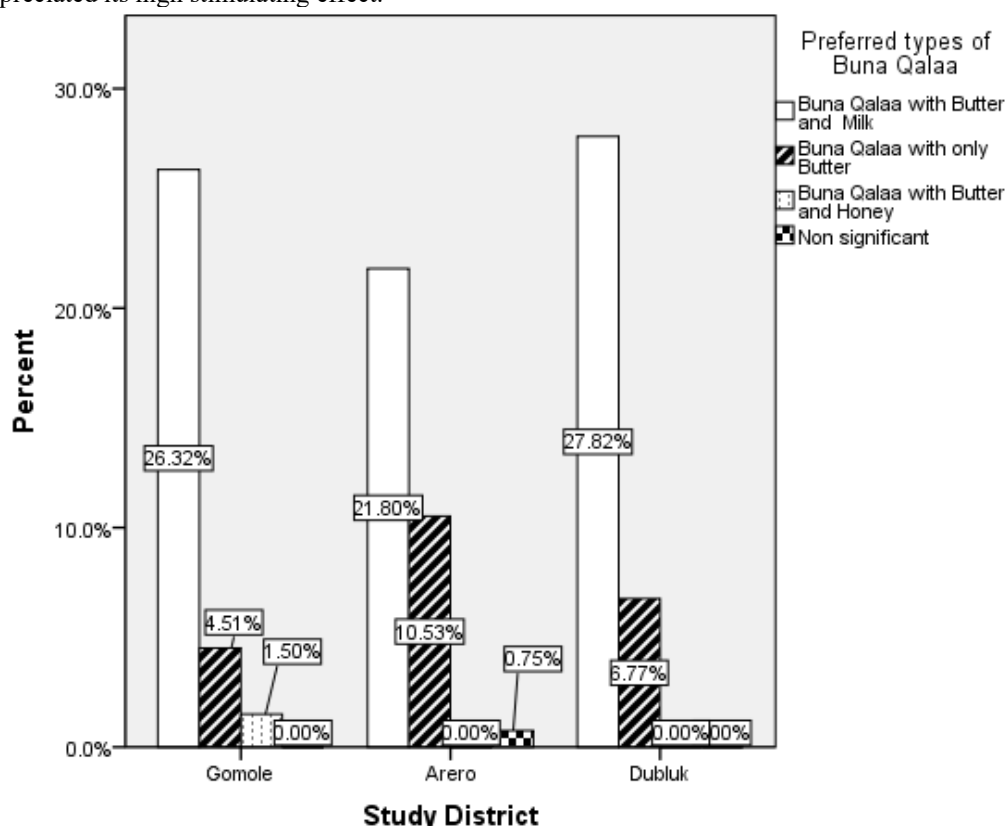


Figure 7. The type /form of *Buna Qalaa* preferred by consumers in Borana

### 3.8. Willingness to buy *Buna Qalaa* if available for sale

In Borana Zone, according to respondents, as far as their knowledge is concerned *Buna Qalaa* was not commercialized. Only 41.8 % of the respondents were willing to buy *Buna Qalaa* if available for sale (Table 10).



The majority of the respondents did not want to buy it if available for sale. In the past, Borana-the pastoral community were not used to sale or buy milk, it was provided free of charge to someone in need. Nowadays milk selling is one of the product by which pastoral community earn income. Therefor the trend that buying *Buna Qalaa* if available for sale may change through time. Female respondents were more reluctant to buy *Buna Qalaa* if available for sale than men. Younger age group respondents were more interested to buy *Buna Qalaa* if available for sale than above 46 years old age. Some respondents were not willing to buy *Buna Qalaa* if available for sale due to non-cultural practice for marketing it. Others feared the safety of the product.

Table 10. Respondents' willingness to buy *Buna Qalaa* (if available for sale) within study districts, gender, age groups and livelihood

		Willingness to buy <i>Buna Qalaa</i> if available for sale		Total
		Yes	No	
Study District	Gomole	46.7%	53.3%	100.0%
	Arero	40.9%	59.1%	100.0%
	Dubluk	37.8%	62.2%	100.0%
Gender	Male	44.4%	55.6%	100.0%
	Female	37.7%	62.3%	100.0%
Respondents' age	20-35 Years	53.3%	46.7%	100.0%
	36-45 Years	54.8%	45.2%	100.0%
	46-55 Years	25.0%	75.0%	100.0%
	Above 55 Years	34.7%	65.3%	100.0%
<b>Total</b>		<b>41.8%</b>	<b>58.2%</b>	<b>100.0%</b>

### 3.9. Health complications due to frequent consumption of *Buna Qalaa*

About 68.4 % of the respondents agreed that frequent consumption of *Buna Qalaa* could lead to health complications (Table 11). These health complications include hypertension, stomach ache and addiction. According to the respondents the problem associated with hypertension is due to the use of vegetable oil instead of butter in the preparation of *Buna Qalaa*. Survey conducted on perception of Italian consumers of coffee showed that coffee consumption could have health effects (Samoggia and Riedel, 2019). Other study showed that coffee consumption does not increase the risk of chronic diseases (Floegel et al, 2012) and at moderate consumption of coffee could be safe and beneficial (George et al, 2008; Chrysant, 2017).

Table 11. Health complication of *Buna Qalaa* due regular consumption

		Does frequent consumption of <i>Buna Qalaa</i> lead to health complications?		Total
		Yes	No	
Study District	Gomole	80.0%	20.0%	100.0%
	Arero	62.8%	37.2%	100.0%
	Dubluk	62.2%	37.8%	100.0%
Gender	Male	68.8%	31.2%	100.0%
	Female	67.9%	32.1%	100.0%
Respondent's age	20-35 Years	64.3%	35.7%	100.0%
	36-45 Years	80.6%	19.4%	100.0%
	46-55 Years	66.7%	33.3%	100.0%
	Above 55 Years	64.0%	36.0%	100.0%
Respondents' livelihood	Pure Pastoral	63.9%	36.1%	100.0%
	Agro pastoral	72.1%	27.9%	100.0%
	Others	66.7%	33.3%	100.0%
<b>Total</b>		<b>68.4%</b>	<b>31.6%</b>	<b>100.0%</b>

### 3.10. Difference between past and current *Buna Qalaa* preparation technique

Respondents (73.39 %) agreed that there was a difference between current and past *Buna Qalaa* preparation techniques (Figure 8). The main raw materials for preparation of *Buna Qalaa* are coffee berry, fresh milk and butter. Besides this some respondents used to add minimum salt. Nowadays people used to prepare *Buna Qalaa* with vegetable oil instead of Butter. They also add sugar. According to the respondents cooking time is

minimum when compared to the past. This could be due the fact that during the past time clay pot/pan was used for the preparation of *Buna Qalaa* but currently aluminium pot is used. The other interesting thing is that people wash coffee berry after cutting the tips, this practice is good to keep it more hygienic. In the past the coffee berry was not washed in some places.

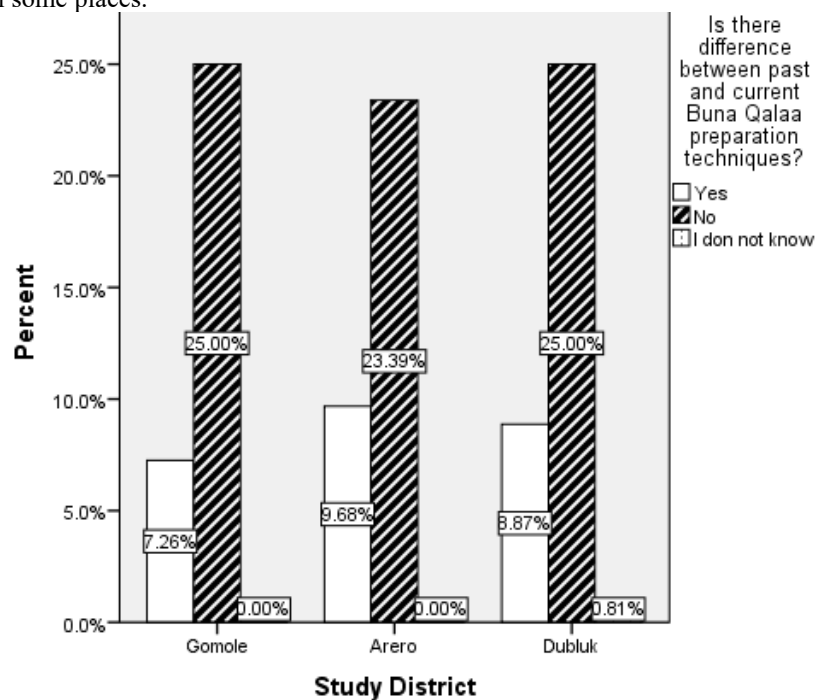


Figure 8. Difference between past and current *Buna Qalaa* preparation technique in Borana

### 3.11. Shelf life of Buna Qalaa

*Buna Qalaa* is consumed freshly or can be kept for a long period of time for future consumption. When prepared with butter and milk it should be served immediately, delay in consumption without appropriate storage will lead to deterioration of the product due to microbial growth favoured by milk. Therefore, *Buna Qalaa* prepared with milk will not be stored according to the respondents. *Buna Qalaa*, without addition of milk, can be stored for a long period of time with traditional container. About 42.27 % of the respondents said that *Buna Qalaa* could be stored for about a month with significant effect on its quality. According to the respondents it could be stored for a minimum of one week (13.4 %) to a maximum of one year (11.34%) (Figure 9).

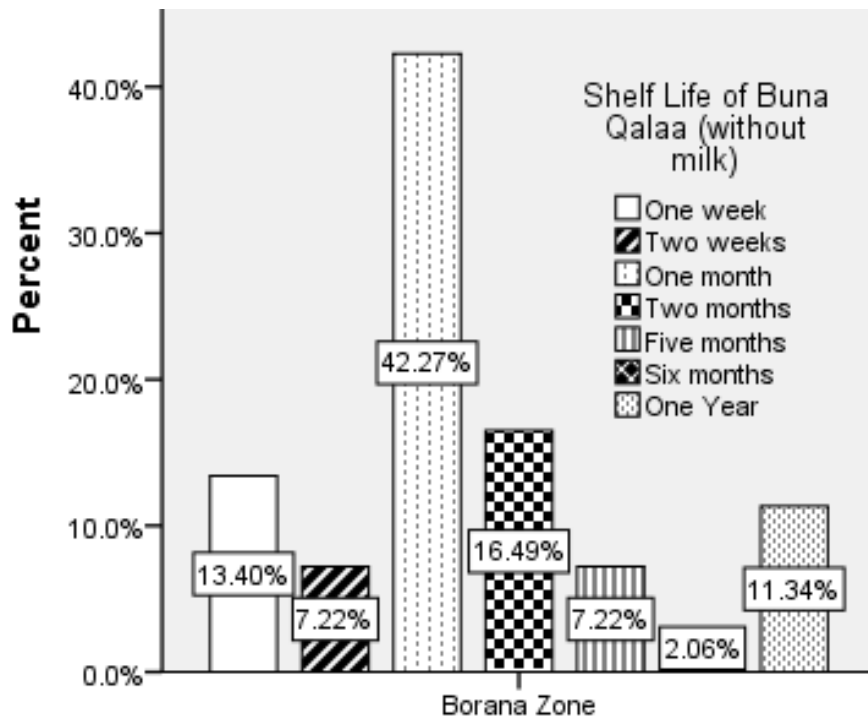


Figure 9. Respondents' perception on the shelf life Buna Qalaa

Of all respondents 58.2 % of them used to keep *Buna Qalaa* for future consumption (Table 12). The shelf life of *Buna Qalaa* is affected by different factors. Of which milk or water should not be added to *Buna Qalaa* that is to be stored. Others include hygiene of storage material and preparation techniques.

Table 12. Respondents who practiced to keep *Buna Qalaa* for a long time

		Respondents who keep <i>Buna Qalaa</i> for long time		Total
		Yes	No	
Study District	Gomole	40.0%	60.0%	100.0%
	Arero	36.4%	63.6%	100.0%
	Dubluk	48.9%	51.1%	100.0%
Total		41.8%	58.2%	100.0%

*Dibbee* (Fig 10 a.), *Budunuu* (Fig 10 b.), *Baaqicha* (Fig 10 c.) and *Qorii* (Fig 10 a.) are the traditional containers for the storage of *Buna Qalaa*. The traditional containers are preferred for the storage of *Buna Qalaa* for different reasons. They can be fumigated to elongate the shelf life of *Buna Qalaa*. The other reason is that its lid fit well and prevents spoilage of the product. It is also cultural to use the containers for *Buna Qalaa* storage.

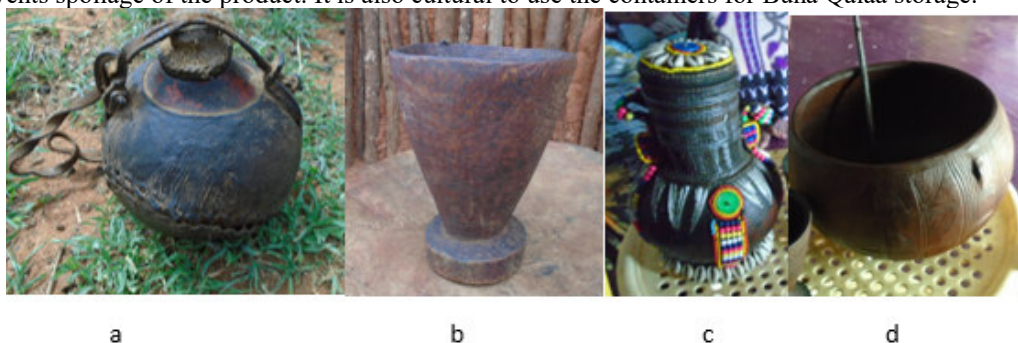


Figure 10. Traditional containers to keep *Buna Qalaa* for a long time a-*Dibbee*, b-*Budunuu*, c-*Baaqicha*, d-*Qorii*

#### 4. Conclusions

*Buna Qalaa*, form of coffee meal, is a traditional non-alcoholic beverage prepared from coffee berry and consumed among Oromo community of Ethiopia. It is a comfort coffee form consumed most of the time on daily basis in Borana Zone of Oromia. The trend of consumption of *Buna Qalaa* and its quality decreasing in Borana Zone. These are due to different factors. The preference to drink coffee is the main reason for the decrease of *Buna Qalaa* consumption where as its quality is affected by input (s) used for preparation. *Buna Qalaa* prepared

using vegetable oil is of low quality. *Buna Qalaa* with crispy texture, black color and good aroma are good quality. Use of *Buna Qalaa* is affected by season due to scarcity of raw materials. It is consumed more during rainy season. *Buna Qalaa*, a form of coffee, is preferred by the consumers most of the time. The majority of the consumers in the study area are not willing to buy *Buna Qalaa* if it is available for sale due non cultural practice. *Buna Qalaa*, without milk, can be kept for a month without significant change. There are perceptions by community that if *Buna Qalaa* is frequently consumed it could lead to health complications such as stomach ache, hypertension and addiction.

*Buna Qalaa* could be prepared in small-size formats and be availed in supermarket as ready-to eat food. It also can create new job for the youths. This should take in to account the quality of the ingredients and preparation techniques for good quality *Buna Qalaa*. The nutrient composition and health issues of *Buna Qalaa* need further study.

## References

- Amamo, AA. (2014), "Coffee Production and Marketing in Ethiopia." *European Journal of Business and Management* 6(37) <https://www.iiste.org/Journals/index.php/EJBM/article/viewFile/18697/18853>
- Bacha, A., Kuto, L., Fufa, D. & Mohammed, K. (2018), "*Buna Qalaa* Ritual of the Boorana Oromo." *Üniversitepark Bülten*. 7(1). 26-39. <http://dx.doi.org/10.22521/unibulletin.2018.71.3>
- Beyero, T., Alem, A., Kebede, D., Shibire, T., Desta M, Deyessa N. (2004), "Mental disorders among the Borana semi-nomadic community in Southern Ethiopia." *World Psychiatry* 3(2).
- Bultosa, G., Molapisi, M., Tselaeesele, N., Kobue-Lekalake, R., Haki, GD., Makhabu, S., Sekwati-Monang, B., Seifu, E. and Nthoiwa, GP. (2020), "Plant-based traditional foods and beverages of Ramotswa Village, Botswana." *Journal of Ethnic Food* 7(1) <https://doi.org/10.1186/s42779-019-0041-3>
- Chrysant, SG. (2017), "The impact of coffee consumption on blood pressure, cardiovascular disease and diabetes mellitus." *Expert Review of Cardio Therapy*. <http://dx.doi.org/10.1080/14779072.2017.1287563>
- Clarke, RJ. and Macrae R. (1985), "*Coffee Volume 1: Chemistry*." Elsevier Science Publishers.
- Clydesdale, FM. (1993), "Color as a factor in Food choice." *Critical Reviews in Food Science and Nutrition* 33(1).
- Cossins, N J. and Upton, M. (1987), "The Borana pastoral system of southern Ethiopia." *Agricultural Systems* 25, 199-218.
- Costa, HS., Vasilopoulou, E., Trichopoulou, A. and Finglas, P., (2010), "New nutritional data on traditional foods for European food composition databases." *European Journal of Clinical Nutrition* 64, 573-581.
- Elemo, IA. (2006), "Socio-cultural factors affecting sexual & reproductive Health: the roles of traditional institutions among the Borana pastoralists of Oromiya, Southern Ethiopia." A Thesis submitted to the School Of Graduate Studies Of Addis Ababa University in Partial Fulfilment of the Requirements for the Degree of Master of Public Health, Addis Ababa
- Floegel, A., Pischon, T., Bergmann, MM., Teucher, B., Kaaks, R., and Boeing, H. (2012), "Coffee consumption and risk of chronic disease in the European prospective investigation into cancer and nutrition (EPIC)–Germany study." *American Journal of Clinical Nutrition* 95, 901:908
- Gemechu, AT. and Tola, YB. (2017), "Traditional butter and ghee production, processing and handling in Ethiopia: A review." *Africa Journal of Food Science* 11(4), 95-105
- George, SE., Ramalakshmi, K. and Mohan Rao, LJ. (2008), "A Perception on health benefits of coffee." *Critical Review in Food Science and Nutrition* 48(5), 464-486. <http://dx.doi.org/10.1080/10408390701522445>
- Laryea, D., Akoto, EY., Oduro, I. and Appaw, WO. (2016), "Consumer perception of traditional foods in Ghana A case-study in Kumasi and Sekondi." *Nutrition & Food Science* 46(1), 96-107 <https://doi.org/10.1108/NFS-05-2015-0051>
- Mohammed, A. and Jambo, A. (2015), "Importance and characterization of coffee berry disease (*Colletotrichum kahawae*) in Borena and Guji Zones, Southern Ethiopia." *Journal of Plant Pathology and Microbiology* (6)9. <http://dx.doi.org/10.4172/2157-7471.1000302>
- Roudsari, AH., Vedadhir, A., Rahmani, J. and Bonab, AM. (2019), "Explaining the barriers and facilitators of ethnic and traditional food choices from the viewpoints of women." *Journal of Ethnic Food* 6(33) <https://doi.org/10.1186/s42779-019-0034-2>
- Samoggia, A. and Riedel, B. (2019), "Consumers' perceptions of coffee health benefits and motives for coffee consumption and purchasing." *Nutrients* 11(653). <https://dx.doi.org/10.3390/nu11030653>
- Tolera, A. and Abebe, A. (2007), "Livestock production in pastoral and agro-pastoral production systems of southern Ethiopia." *Livestock Research for Rural Development* 19(12)
- Trichopoulou, A., Vasilopoulou, E., Georga, K., Soukara, S. and Dilis, V. (2006), "Traditional foods: Why and how to sustain them." *Trends in Food Science and Technology* 17,498-504. <https://doi.org/10.1016/j.tifs.2006.03.005>
- Tuma, NM. (2018), "Guji Girja Gada system and contemporary challenges." *International Journal of Innovation*

Research & Development 7(12), 43-51

- Vasanthal, S., Vijaylakshmi, S. and Kiranl, P. (2015), “Review on impact of changing lifestyles on dietary pattern.” *International Journal of Current Research and Academic Review* 3(6), 135-147.
- Wayessa, BS. (2011), “*Buna Qalaa*: A Quest for traditional uses of coffee among Oromo people with special emphasis on Wallaga, Ethiopia”. *Africa Diaspora Archaeology Newsletter* 14(3).  
<https://scholarworks.umass.edu/adan/vol14/iss3/3>
- Yeneayehu, F. and Tihunie, F. (2020), “Socio-economic profile of arid and semi-arid agropastoral region of Borana rangeland Southern, Ethiopia.” *MOJ Ecology & Environmental Sciences* 5(3).