

## Potential of Honey Production and its Utilization for Food Security in Filtu Woreda, Liben Zone, Somali Regional State, Ethiopia

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**Abstract:** Ethiopia is the largest and leading honey producer and bee colonies in Africa and tenth largest honey producer in the world. However, this products are not effectively leveled and utilized for food security. Therefore, this study was conducted to assess the potential of honey production and its utilization for food security in Filtu Woreda, Liben Zone. Data was collected by a total of 180 households' (from nine kebeles) interviews using pre-tested semi-structured questionnaires and analyzed using descriptive statistics by the SPSS software. The survey results showed that there was huge amount of honey bee colonies (e.g. *A. mellifera*) in the study area, but low potential of honey production due to extensive management systems were mainly practiced in the area (no extra food is provided for honey bee, etc.). From the analysis, the respondents were indicated that, 45% were agreed that honey is play a great role for dietary and food security of the producers and consumers and 14% were reflected honey as a medicinal value due to its organic nature and therapeutic effects. To conclude, production of honey is low, but it has direct contributions to the food security of the area.

**Key words:** Honey • Food security • Utilization • Honey bee • Ethiopia

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### INTRODUCTION

Ethiopia is the largest and leading honey and beeswax producer in Africa, own big number of bee colonies and surplus honey sources of flora, honey production potential and tenth largest honey producer all over the world. Also, considerable amount of wax produced due to its forests and woodlands which contains diverse plant species that provide surplus nectar and pollen to foraging bees [1].

The total honey production of Ethiopia is estimated up to 24000 metric tons; only a small amount of this is effectively utilized to alleviate food insecurity [2]. Besides poor utilization, the main reason is that about 80% of the total Ethiopian honey production goes in to the local Tej-preparation, a honey wine, which consumed as national drink in large scale [3]. Honey is an important products that produce from honey bees as it has a great role in livelihood of the bee keeper that primarily focus on it as main production system, as a source of income, source of food, source of medicine and others [4].

Due to its rich in nutrients, minerals and deliciousness, honey is the main diet for nourishing and essential food to alleviate food shortage for human being [5]. However, this products are not effectively leveled and utilized for food security in the study area. Therefore, this study was conducted to assess honey production potential and its utilization for food security in Filtu Woreda, Liben Zone, Ethiopia.

### MATERIALS AND METHODS

**Description of the Study Area:** The study was conducted in Filtu Woreda, which is located in the north east of Liben zone, Somali regional state, Ethiopia. The Woreda has a total population of 130,993, of whom 74,537 are men and 56,456 women. While 4,972 or 3.57% are urban inhabitants, a further 92,041 or 70.26% are pastoralists. 99.15% of the population said they were Muslims. The altitude of this Woreda ranges from 200 along the Ganale Dorya, to as high as 1500 meters above sea level [6].

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**Method of Data Collection:** Data was collected by households interviews using pre-tested semi-structured questionnaires. Data like potential of honey production of the area, method of utilization, amount and type of bee hives exists, number of bee hives (all types) currently available, amount of honey produced per colony and their contribution to food security were also collected for the study.

**Sampling Techniques:** Nine *kebeles* and a total of 180 households (HHs) were selected purposively based on their honey bee keeping, honey production potential, honey consumption and its utilization for different purposes.

**Data Analysis:** The collected survey data was analyzed by using descriptive statistics by the SPSS software [7].

## RESULTS AND DISCUSSION

### General Honey Bee Keeping and Management Practices:

According to household interviews, the selected respondents' revealed that they were engaged in beekeeping activities for a long period of time with the objectives; mainly to get honey for household consumption and to generate cash income from the sale of honey which is in lined with Onwubuya *et al.* [4]. Among the respondents (n=180), 89 % were practicing traditional extensive management system using traditional grass thatch hives for their honey bee colony, where as the remained 11% were practicing semi-extensive management system using traditional and modern hives which is donated by non-government organizations in the Filtu Woreda is shown by Table 1. Due to their management practices, low honey production and poor quality honey was produced which was similar to the report of FAO [8].

### Potential of Honey Production in Filtu Woreda:

Among the respondents, 92% were get their bee colonies by trapping swarms using a decay hives (putting smoked grass thatch hives on branch of trees), 6% of respondents were get bee colonies both by catching wild swarm clusters and trapping swarm using a decay hives, while 2% were get wild bee colony absconded when resting in hallow of caves is presented in Table 1 below. Even though Filtu Woreda have high honey bee colony, almost all respondents were indicated that the production of honey was low. This is due to that, most of the respondents were practice traditional extensive

Table 1: Bee keeping managements system in Filtu Woreda, Liben zone

Parameters	Specific parameters	Percentage of respondents
Management practices	Extensive system	89
	Semi-extensive system	11
	Intensive system	0
Sources of honey bee	Trapping swarms	92
	Catching wild swarm clusters and trapping swarm	6
	Wild bee colony when resting in hallow	2
Form of honey utilizations	Pure honey consumption	44
	Honey with other food	23
	Diluting with water & other liquid	18
	Mixing with traditional medicine	15
	Roles for food security	As food
	As medicine	14
	As income generation	44

Source: Field survey

management system (no extra food provided for bee colony, etc.). Besides, the agro-ecological condition has also significantly affect the level of honey production (i.e. semi-desert, droughty area where there is no enough pollen nectar, etc.).

### Utilization of Honey and its Role for Food Security:

Based on the analysis, 44% of respondents were consume 3 spoons (~2gm) of honey as luxury food after fasting 12 hours during the Ramadan fasting "Aftira", 23% were utilize or consume with other food like bread, 18% were consume by diluting with water or other liquid and 15% were consume with traditional or local medicine for specific disease, respectively is presented in Table 1 above. In addition to utilization form, the respondents was also indicated in Table 1, 45% of respondents were agreed that honey is play role for food security due to its richness in different nutrients for human being, 41% were convinced honey as source of income for producers and merchants and 14% were reflected honey as a medicinal value due to its organic nature and therapeutic effects for human being. Generally, the use of honey as food, drinks, medicine and for cultural ritual or ceremony which is similar to Onwubuya *et al.* [4] and directly contribute to the food security of the study area.

## CONCLUSION

The survey results showed that there was huge amount of honey bee colonies (e.g. *A. mellifera*) in Filtu Woreda, but low potential of honey production due to traditional extensive management systems were mainly practiced in the study area (no extra food is provided for honey bee colony, etc.). From the analysis, the respondents were indicated that, 45% were agreed that the honey play a great role for dietary and food security of the producers and consumers, 41% were convinced honey as source of income for producers' and merchants' and 14% were reflected honey as a medicinal value due to its organic nature and therapeutic effects for human being. Generally, the use of honey as food, drinks, medicine and for cultural ritual or ceremony and directly contribute to the food security of the study area.

**Recommendations:** Based on the finding of this study, the following recommendations were made:

- Study on production of a honey, it is essential to manage apiary in improved and intensive way for high production of honey for different purposes.
- Nutritional evaluation of honey is crucial to indicate each nutrient contained in honey for dietary, food security and food self sufficiency of human being.

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