

**Short Communication**

# **A Review of Camel Meat as a Precious Source of Nutrition in some part of Ethiopia**

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## **Abstract**

Camel meat is very popular and readily available in certain places of the world. Camel meat is not well known in Ethiopia except in the pastoralist community of Afar, Somali and Negele Borena. The dromedary camel is a good source of meat especially in areas where the climate adversely affects the performance of other meat animals. From the quality point of view, camel carcasses are slender and have less amount of fat when compared to other red meats. Camel production in both the commercial and rural sectors can provide a quick and a most cost effective solutions for this nutritional problem. Camel meat is believed by Somali and Indian people to have remedial effects for as many as 13 different diseases, including hyperacidity, hypertension, pneumonia and respiratory diseases and also to be an aphrodisiac. The taste of camel meat is generally appreciated; slightly tender something between beef and veal if they slaughtered as young as yearling. A little attention has been paid for the benefits of camel meat, especially the chemical composition and its value, although camel meat have shown that it has some distinct qualities which perceive it from other red meat types such as mutton and beef. The consumption of meat has a cultural value. A respectful and careful treatment of all animals for slaughter belongs to the quality of meat.

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**Keywords:** Camel, meat, nutrition, precious, sources

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## Introduction

Camel meat is very popular and readily available in certain places of the world. Camel meat is not well known in Ethiopia except in the pastoralist community of Afar, Somali and Negele Borena. The dromedary camel is a good source of meat especially in areas where the climate adversely affects the performance of other meat animals. This is because of its unique physiological characteristics, including great tolerance to high temperatures, solar radiation, water scarcity, rough topography and poor vegetation (Kadim *et al.*, 2008). Camel meat is more consumed in some parts of Ethiopian regional states such as in Afar, Somali and NegeleBorena Zone of Oromia Regional State which are considered poor in both their agricultural land and water resources as the desert is covering huge parts of the total area. Those Regions are self-sustained in camel meat production. However, they continue to make strides towards achieving self sufficiency in relation meat products by using new agricultural technologies. Hence, food security will remain at the top of their priority list of which securing sufficient animal protein is the most challenging task, compared to all the other nutritional requirements. Camel production in both the commercial and rural sectors can provide a quick and a most cost effective solutions for this nutritional problem. However, camels are one of the underlying elements of the national economy and food security for many regions in the world such as Middle-East, Africa, some Asian countries and Australia. Camel husbandry has been slightly improved, and the domesticated camel in the world tenuously increased from 1978 to 1999 at the rate of 17.0 to 19.0 million heads, respectively (Hertrampf, 1997). In other words, the rate of camels' growth is around 0.5% per year.

## Quality and nutritional background

From the quality point of view, camel carcasses are slender and have less amount of fat when compared to other red meats. The edible meat tissue from camels also contains less cholesterol than beef or lamb, which suggests that camel meat, is healthier (Kadim *et al.*, 2008). The taste of camel meat is generally appreciated; slightly tender something between beef and veal if they slaughtered asyoung as yearling (Huwar). The camel meat color is dark to red (particularly the meat of old camels); in raw condition it is somehow fibrously and requires a special, adequate manufacturing in process.

Most recently, the fact that meat quality has evolved further from just implying lean yield percentage and back fat thickness. For example, quality now refers to all or some of the following: (i) carcass characteristics and composition, such as carcass uniformity and consistency, lean yield, (ii) meat characteristics such as color, marbling, pH, DFD (dark, firm and dry) score, (iii) eating qualitycharacteristics including tenderness, juiciness and flavor, (iv) nutritional characteristics such as protein, vitamin and mineral contents (Grunert*et.al.*, 2004). Camel meat is a good supplier of protein, vitamin A and D and also contains rich amount of efficient fatty acids. Regarding the relative camel species, dromedary meat appears to be not only suitable but also attractive for human consumption, from both the chemical composition and technological meat quality points of view. More specifically, (1) proximate

composition of dromedary muscle was characterized by a relatively low intramuscular fat content (2%) and a high ratio of protein to fat, (2) mineral and amino acid compositions, PUFA:SFA ratio and CLA content were similar to those of beef and sheep meat (Salva *et.al.*, 2009).

A little attention has been paid for the benefits of camel meat, especially the chemical composition and its value, although camel meat have shown that it has some distinct qualities which perceive it from other red meat types such as mutton and beef. The most highly considerable characters of the camel meats are its low fat matter and high moisture content and also considered as rich in protein content and a multi vitamin commodity. Camel meat contains a high ratio of good quality of protein. Generally, vitamin A plays many critical functions, both preventive and therapeutic. Vitamin A helps keep human skin and mucus membrane cells healthy and stimulates immune system response, which helps fight outer infections. Another important function of vitamin A is that it acts as an antioxidant, helping to protect cells against cancer and other diseases. Vitamin is needed to help convert the carbohydrates into glucose. The following B Vitamins are needed at a cellular level to convert glucose into energy. The vitamin B complex is essential for the healthy functioning of the nervous system. A deficiency in any of the vitamin B complex vitamins can lead to feeling stress, anxious and depressed. Excluding camel, all red meat naturally contains more fat, saturated fat and cholesterol than any other food. A chronic access intake to these lipids in the body is directly responsible for numerous cardiovascular diseases, including coronary heart disease and high blood pressure. As camel meat contains less fat, we therefore suggest that eating camel meat is a great factor helps reducing risk of developing life-threatening diseases, such as obesity, cholesterol disease and colon cancer.

Meat and fish provide valuable sources of protein for many populations around the world. Furthermore, meat and fish proteins offer huge potential as novel sources of bioactive peptides (Ryan *et al.*, 2011). The meat protein tended to have a higher percentage of the amino acid proline than the literature values for other red meats, and lower values for tryptophan, aspartic acid and tyrosine (Dawood and Alkanhal, 1995). Since camel meat contains high level of protein compared to beef, it may have many biological active peptides after it is being degraded by the human digestive system.

Bioactive peptides from food proteins offer major potential for incorporation into functional foods and nutraceuticals (Royan *et al.*, 2011). Moreover, camel meat is believed by Somali and Indian people to have remedial effects for as many as 13 different diseases, including hyperacidity, hypertension, pneumonia and respiratory diseases and also to be an aphrodisiac (Kurtu, 2004). Reasons contributed to consider camel meat as precious nutrition and healthy muscles food lie in (1) high in protein content and its uniqueness, (2) low in fat and cholesterol, (3) multivitamin muscle food (especially tocopherol group), (4) provides the essential amino acids (arg, his, ile, leu, lys, phe, thr, trp, val, met), (5) distinguished meat from other red meat types (tender and easy to chew, which is good for elderly people; juicy that enhances flavor for soups; tasty in which considered as umami substance enhancer).

## Conclusions

The consumption of meat has a cultural value. A respectful and careful treatment of all animals for slaughter belongs to the quality of meat. As for the camels, it seems that this requirement is less fulfilled than for other animals with some negative hypothesis remains, which must be overcome gradually. The authors of this article are engaged to positively review and to further propagandize nutritional value of the camel meat. We suggest that camel meat may have remedial effects for many different life-style related diseases, including, hypertension and cardiovascular diseases.

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