



MODULE NO. 02: COMPOSITION AND NUTRITIVE VALUE OF MEAT FROM DIFFERENT SOURCES



Goat meat has been established as a lean meat with favorable nutritional qualities

Nutrient	Goat	Chicken	Beef	Pork	Lamb
calories	122	162	179	180	175
Fat(g)	2.6	6.3	7.9	8.2	8.1
Saturated fat(g)	0.79	1.7	3.0	2.9	2.9
Protein(g)	23	25	25	25	24

Regarding essential amino acid composition, goat meat closely resembles that of beef and lamb.



- ❑ Goat meat has higher levels of iron (3.2 mg) when compared to a similar serving size of
- Beef (2.9 mg),
 - Pork (2.7 mg),
 - Lamb (1.4 mg), and
 - Chicken (1.5 mg).



- ❑ Fat, however, is not only a concentrated source of energy for the body, but also improves meat palatability as it affects texture, juiciness and flavor as well as being important for meat preservation.

- ❑ All unsaturated fatty acids and stearic fatty acid are categorized as desirable fatty acids (DFA). The average percentage of DFA in goat meat was estimated between 61 and 80%



- Camels are used as a source of meat for both humans and pets.
- Camel steak has protein levels similar to beef and has significantly less fat than lamb and chicken
- Camel steak also contains less cholesterol: 61mg of cholesterol per 100g of uncooked camel meat compared with 70 mg, 130 mg, and 100 mg for beef, lamb chops and chicken meat respectively.
- The fat and ash content of camel meat is lower than that of beef.

Comparison of the basic nutritional value of camel and beef

	Water (%)	Protein (%)	Fat (%)	Ash (%)
Beef :bull	76.4	20.9	1.2	1.05
Beef: cow	75.5	21.2	4.0	1.02
Beef: steer	73.0	20.4	4.9	0.97
Camel>5 yrs	76.2	22.0	1.0	0.86
Camel<5 yrs	78.2	20.1	0.9	0.76

Comparison of camel and other



meats

Per hundred grams uncooked mass

	Energy (KJ)	Protein (g)	Fat (g)	Cholesterol (mg)
Lean camel steak	420	20.7	1.8	61
Lean beef steak	600	21.0	12.0	70
Lamb chop	840	12.0	15.0	130
Chicken meat	710	19.0	15.0	100



- Camel carcasses contain about 57% muscle, 26% bone and 17% fat
- Camel lean meat contains about 78% water, 19% protein, 3% fat, and 1.2% ash with a small amount of intramuscular fat
- The amino acid and mineral contents of camel meat are often higher than beef, probably due to lower intramuscular fat levels
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- ❑ Chemical intramuscular fat levels in camel meat vary greatly. However, the maximum value of fat (10.5%) is present in camel between 5 and 8 year-old, while 4.4% in 1–3 year-old camel.
- ❑ Camel meat like other red meats contains high levels of potassium followed by phosphorus, sodium, magnesium and calcium, respectively, plus smaller percentages of other elements.



- ❑ Calcium content of camel meat is higher than that of beef which may partly explain the tight structure of some cuts of camel meat.
- ❑ The most abundant essential amino acids in camel meat and other meats are lysine, leucine and arginine
- ❑ The ratio of linoleic acid metabolites to linolenic acid metabolites in camel meat is about 10.9 which is much higher than the ratio for cattle, sheep and goat (2.0, 2.4 and 2.8, respectively)



- ❑ Poultry meat has a significant content of vitamins; however, the quantity of vitamin E of poultry meat is low
- ❑ Poultry meat and other meats are good sources of high biological value protein vary between 17-22%.
- ❑ The highest content of protein is in chicken muscles.



Suggested readings:

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- Daniel Franco, Santiago Crecente , José Antonio Vázquez , María Gómez , José M. Lorenzo (2010). Effect of cross breeding and amount of finishing diet on growth parameters, carcass and meat composition of foals slaughtered at 15 months of age. *Meat Science* 93 (2013) 547–556
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- Paula Manuela de Castro Cardoso Pereira , Ana Filipa dos Reis Baltazar Vicente.(2013). Meat nutritional composition and nutritive role in the human diet. *Meat Science* 93 (2013) 586–592
- Dalle Zotte A., Szendrő Z . (2011). The role of rabbit meat as functional food. *Meat Science* 88 319–331