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Quality Assessment of Nutritional Value and Safety of Different Meat

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Fresh meat considering one of the very important perishable food due to its composition which, rich in protein, omega-3 polyunsaturated fats, vitamin and minerals, in addition to wide range of endogenous antioxidants and other bioactive substances including carnitine, taurine, carnosine, ubiquinone and creatine. These chemical components of meat vary according to the difference such as; animal species, age, breed, sex, feed and body weight. Normally, the quality of the meat is dependent upon changes in its chemical components; protein, moisture, fat and ash.

The abattoir is an important step in the production of meat as it presents some of the preferable opportunities for contamination. Physical and chemical hazards may be encountered at an abattoir. The most important microbial contamination sources arise from endogenous sources as the microbial load of meat mainly due to its high-water activity, high protein content and approximately neutral pH. Exogenous sources of meat were occurred during or after slaughtering, processing, abuse storage conditions including; and/or during the meat transportation.

Controlling the quality of meat aimed to assessment of the quality control of slaughter animals and meat, which provide wholesome and safe meat for human consumption and achieved by abattoir meat inspectors (veterinarians) who is representing the authorities of public health.

Over all 30 musculus Biceps femoris muscles (breed: Egyptian sheep, cattle; camel: male, one-day postmortem, muscle pH: 5.75-5.95, 250 g weight) were purchased from Ismailia city abattoir. The mean moisture, fat, protein and ash content for mutton were 73.4, 3.2, 22.3 and 1.1 respectively, for beef meat respectively and for camel meat.

Determined using the AOAC, A clean Soxhelt's flask was placed in a hot air oven at 105°C for 30 min, and then it was placed in desiccator and weighed just after cooling. The flask was fitted with a Soxhelt's extractor and secured in a stand on the bench. Mould a filter paper on a large test-tube and the homogenate meat sample was transferred into the paper and then plug the top of the paper with de-fattened cotton wool and push it into the lower part of the extractor. Then, light petroleum ether was added through the top of the extractor. A suitable condenser was attached, and heating was applied to the flask in the apparatus on special water bath. The extraction was begun and continued for about 16 h.

Protein was determined using the AOAC [23] 2fficLal Method 992.15 as follow: Digestion: One gram of the homogenate meat sample was placed in Kjeldahl's flask with 8 g catalyst mixture (96% anhydrous Sodium Sulfate, 3.5% Copper Sulfate and 0.5% Selenium Dioxide). Then, 20 ml of conc. H2SO4 were poured on the sample and vigorous shaking was applied. Vigorous boiling was carried out till the mixture become clear and transparent then allowed to cool. HLs is called "digestion mixture".

In Meat the chemical compositions of mutton and camel were significantly higher ($P<0.05$) in mutton followed by beef then camel meat.

The mean moisture, fat, protein and ash values for the meat of slaughtered animals at Ismailia abattoir. The mean moisture content for mutton, beef and camel meat were 73.4, 68.5, and 75.8 respectively. The mean fat content mutton, beef and camel meat were 3.2, 12.3, and 1.7 respectively. The mean protein content of mutton, beef and camel meat were 22.3, 18.1, and 21.3 respectively. The mean ash content of mutton, beef and camel meat were

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1.1, 1.3, and 1.5 respectively. The results of meat chemical compositions of mutton and camel meat were significantly\ higher ($p<0.05$) than recorded for beef meat. FAO, recorded the moisture content for beef and mutton meat are 74.7 and 76.4 respectively. Protein, fat and ash content for beef should be 16.5, 28.0, and 0.8 respectively.

The results of this study recommend that more stringent inspection and regular supervision and/or monitoring of hygiene practices in the abattoir to ensure production of good quality meat of high nutritive values.

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