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## **EVALUATION OF MICROBIAL QUALITY OF FRESH BEEF MEAT SOLD IN HAMA GOVERNORATE, SYRIA**

***Abstract:** Eighty raw beef meat samples were collected from different butcher's shops in Hama city. Aerobic Plate Count (APC) > 106 CFU/g were obtained 81% of beef meat samples. *E. coli*, *S. aureus*, and *Salmonella* were isolated from 40 (50%), 29 (36%), 12 (15%) samples respectively.*

***Keywords:** Raw beef meat, *E. coli*, *Staphylococcus aureus*, *salmonella*.*

## **ОЦЕНКА МИКРОБНОГО КАЧЕСТВА СВЕЖЕЙ ГОВЯДИНЫ, ПРОДАВАЕМОГО В Г. ХАМА, СИРИЯ АННОТАЦИЯ**

***Аннотация:** Восемьдесят образцов сырого мяса коровы были собраны в разных мясных магазинах города Хама. Количество аэробных микроорганизмов посевом (APC) > 106 CFU/g было получено в 81% образцах мяса говядины. *E. coli*, *S. aureus* и *Salmonella* были выделены из 40 (50%), 29 (36%), 12 (15%) образцов соответственно.*

***Ключевые слова:** Сырое мясо коровы, кишечная палочка, золотистый стафилококк, сальмонелла.*

## INTRODUCTION

Meat considered the most important items of human food because of high nutritional value; it is a good source of protein, essential amino acids, fatty acids, vitamins and minerals 1. The microbial status of fresh meat depends on the physiological state of the animal at slaughter, cutting, in addition to the sanitary conditions in the abattoir environment 2. Meat is a medium rich medium for the growth of microorganisms, and it is a common source of food-borne diseases 3,4 The most important foodborne bacterial pathogens associated with meat are Salmonella, Campylobacter jejuni, Yersinia enterocolitica, Escherichia coli, Staphylococcus aureus, and Listeria monocytogenes 5.

**Objective of the research:** Determine the bacteriological quality of marketed raw beef meat with a special emphasis on isolation of Salmonella, Escherichia coli, and Staphylococcus aureus in raw beef meat Sold in Hama governorate.

**Results and Discussion:** The result of this study showed that revealed that retail raw meats are often contaminated with food-borne pathogens. Aerobic Plate Count (APC)  $> 10^6$  CFU/g were obtained 81% of beef meat samples. E. coli was found in 50% samples, S. aureus was found in 36% samples and Salmonella (S. Typhimurium) was isolated from 40% sample. Obtained isolates were characterized by Gram's Staining and biochemical characterization Using the (KB003: Hi25 Enterobacteriaceae, HiMedia) to identify salmonella and E.coli, and (KB004: HiStaph, HiMedia) to identify Staphylococcus.

**Conclusions:** All the meat samples that found contain high microbial load. This study showed that Aerobic Plate Count (APC) were  $> 10^6$  CFU/g in 81% of beef meat samples, which is mainly due to the level of hygienic conditions during slaughtering. E.coli was found in 50 % samples, E.coli on meat signals faecal contamination 6. S. aureus was found in 36% samples, the higher prevalence of S. aureus could be due to food handlers, animal or environmental sources 7. In addition, Salmonella was found in 15% samples. Meat contamination with Salmonella often occurs by poor hygiene practices and puncture of the viscera resulting in contamination of carcasses by intestinal contents 4,8.

The presence of pathogenic bacteria may pose a risk for public health Therefore, strict sanitary measures throughout the slaughtering steps.

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