

Meat Cooking, Importance and Hazards

Fahim Aziz Eldein Shaltout

Department of Food Hygiene and Control (Meat hygiene), Faculty of Veterinary Medicine, Benha University, Benha 13736, Egypt.

***Correspondence Author:** Fahim Aziz Eldein Shaltout, Department of Food Hygiene and Control (Meat hygiene), Faculty of Veterinary Medicine, Benha University, Benha 13736, Egypt.

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Abstract:

Meat is a great source of protein. They also provide many other nutrients your body needs, such as iodine, iron, zinc, vitamins (especially B12), and essential fatty acids. Therefore, it is a good idea to eat meat as part of a balanced diet each week. However, it is best to stick to unprocessed lean meats and eat the recommended portion sizes to avoid consuming too much salt and saturated fat.

Keywords: nutrients; body needs; iodine; iron; zinc; vitamin B12; essential fatty acids

Introduction:

Meat is excellent source of protein, which is important for growth and development (1-7). But did you know it also contain many other substances you need for good health as Iodine, which helps your body produce thyroid hormones. Iron, which carries oxygen throughout your body. Zinc, which boosts your immune system, keeps your skin healthy, and promotes growth, development, and reproductive health. Vitamin B12, which works on your nervous system. Omega 3, which supports heart and brain health (8-14).

Sufficient amount of protein for body health:

It is recommended to eat 1-3 portions of lean meat and poultry, fish, eggs, tofu, nuts and seeds, and beans or legumes every day. 3-4 portions are recommended during pregnancy. To ensure you get enough iron and zinc, about half of this should be lean red meat (160-166). A standard portion size of meat or poultry is 65g of cooked lean red meat such as beef, lamb, veal, goat (about 90-100g raw). 80g of cooked lean poultry such as chicken or turkey (about 100g raw). But when it comes to red meat, moderation is key (15-21). Scientists recommend a maximum of 455g of cooked lean meat per week, and limiting processed meats such as ham and bacon to avoid some of the health risks associated with eating these foods. Many men eat too much red meat, and conversely, women and children tend not to eat enough (22-28).

Proper way of cooking meat:

There are so many delicious ways to prepare meat. Choose lean cuts of meat. Cut chops, lean rump steaks, or breasts are good places to start (157,158,159,160,161,162 and 163). Grill meats instead of frying them. And don't add extra oil when cooking. Use low-fat marinades to add

flavor to your meat. Marinades also tenderize meat and keep it moist while cooking (29,30,31,32,33,34 and 35). When frying meat, place it on a wire rack over a baking sheet to drain the fat. When slow-cooking stews, curries, and casseroles, try using less meat and more vegetables and beans (36,37,38,39,40,41 and 42).

Sanitizing meat:

Cooking meat properly kills all bacteria. This will protect you and your family from food poisoning. Safe cooking methods depend on the type of meat (150,151,152,153,154,155 and 156). Some meats need to be cooked thoroughly (i.e., until the juices run clear and no pink or red flesh is visible when cut) (43,44,45,46,47,48 and 49). Cook the following meats thoroughly Offal (including liver), Meatballs and sausages, Kebabs, Rolled roasts. You can eat a whole cut of beef or lamb if it is still pink or raw on the inside (as long as it is cooked on the outside) (143-149). This includes Steaks, Chops, Roasts. If you are at higher risk for more severe effects of toxoplasmosis (for example, if you are pregnant or immunocompromised), you should make sure the meat is cooked thoroughly to reduce this risk (50- 56). It can be hard to know how long to cook meat – it varies depending on the size of the cut, the quality of the meat, and how you like it served (if it's red meat). Rather than concentrate on cooking time, you could monitor temperature (57-63).

Safely storage of meat:

Storing your meat and flesh safely also helps stop bacteria spreading, reducing the threat of food poisoning (64-70). Tips for chilling meat and flesh safely include Store unwrapped fresh raw meat in clean holders in the coldest part of

your fridge (at 0 – 3 °C). still, you can keep it for over to 5 days (the face of the meat will dry out a little, but this stops the growth of micro-organisms), If the vessel is voiced to allow air rotation (71-77). You can leave meat and flesh wrapped in its original packaging (A plastic bag from the butcher or a sealed package from the supermarket), but this keeps humidity trapped, which enables bacteria to grow (78-84). Meat or flesh cooled in its shop packaging should be used within 3 days.

Store raw diced meat in the coldest part of the fridge and use within 3 days (85-92). Don't eat meat after the use-by date.

Cool any leftover cooked meat or flesh as snappily as you can (lower than one hour), and also put it in your fridge for latterly (93- 99).

Indurating meat and flesh is a great way to stay systematized. Then are some tips for indurating your meat safely (100-106). indurate your meat and flesh before the stylish before or use by date. The stylish idea is to put your meat and flesh in the freezer as soon as you get home from shopping (136-142). Over time, the air in the freezer can percolate the plastic, 'burning' the meat or flesh. Meat with freezer burn is still safe to eat, but the freezer burn can affect the taste. Still, cook it straight down, If you defrost the meat or flesh in the microwave (107-113). Thaw it in the fridge to make sure it does not get too warm, If you want to cook it latterly (129-135). When defrosting meat or flesh in the fridge, do it in a sealed vessel (121-128). This keeps any hazardous (which may contain bacteria) down from other foods in your fridge. And flash back, if you defrost meat and also cook it, you can indurate it again. But don't reheat meat or flesh further than formerly. This increases the threat of food poisoning (114-120).

Conclusion

Meat is a great source of protein and lots of other nutrients your body needs. Check your recommended intake of meat and try to stick with it. Meat must be stored and cooked safely. There are lots of ways you can shop for meat sustainably and ethically.

Conflicts of Interest

The authors declare no conflicts of interest.

References:

- Shaltout, F.A., Riad,E.M., and AbouElhassan, Asmaa, A (2017): prevalence Of Mycobacterium Tuberculosis In Imported cattle Offals And Its lymph Nodes. Veterinary Medical Journal -Giza (VMJG), 63 (2): 115 – 122.
- Shaltout, F.A., Riad,E.M., and Asmaa Abou-Elhassan (2017): Prevalence Of Mycobacterium Spp. In Cattle Meat And Offal's Slaughtered In And Out Abattoir. Egyptian Veterinary medical Association, 77 (2): 407 – 420.
- Abd Elaziz, O., Fatin S. Hassanin, Fahim A. Shaltout and Othman A. Mohamed (2021): Prevalence of Some Foodborne Parasitic Affection in Slaughtered Animals in Local Egyptian Abattoir. Journal of Nutrition Food Science and Technology 2 (3): 1-5.
- Abd Elaziz, O., Fatin, S Hassanin, Fahim, A Shaltout, Othman, A Mohamed (2021): Prevalence of some zoonotic parasitic affections in sheep carcasses in a local abattoir in Cairo, Egypt. Advances in Nutrition & Food Science 6 (2): 6 (2): 25-31.
- Al Shorman, A.A.M.; Shaltout,F.A. and hilat,N (1999):Detection of certain hormone residues in meat marketed in Jordan.Jordan University of Science and Technology, 1st International Conference on Sheep and goat Diseases and Productivity, 23-25 October, 1999.
- Ebeed Saleh, Fahim Shaltout, Essam Abd Elaal (2021); Effect of some organic acids on microbial quality of dressed cattle carcasses in Damietta abattoirs, Egypt. Damanhour Journal of Veterinary Sciences 5 (2): 17-20.
- Edris A, Hassanin, F. S; Shaltout, F.A., Azza H Elbaba and Nairoz M Adel (2017): Microbiological Evaluation of Some Heat Treated Fish Products in Egyptian Markets.EC Nutrition 12.3 (2017): 124-132.
- Edris,A., Hassan,M.A., Shaltout,F.A. and Elhosseiny, S (2013): Chemical evaluation of cattle and camel meat.BENHA VETERINARY MEDICAL JOURNAL, 24 (2): 191-197.
- Edris,A.M., Hassan,M.A., Shaltout,F.A. and Elhosseiny, S (2012): Detection of E.coli and Salmonella organisms in cattle and camel meat. BENHA VETERINARY MEDICAL JOURNAL, 24 (2): 198-204.
- Edris A.M.; Hemmat M. I., Shaltout F.A.; Elshater M.A., Eman F.M.I. (2012): STUDY ON INCIPIENT SPOILAGE OF CHILLED CHICKEN CUTS-UP. BENHA VETERINARY MEDICAL JOURNAL, VOL. 23, NO. 1, JUNE 2012: 81-86.
- Edris A.M.; Hemmat M.I.; Shaltout F.A.; Elshater M.A., Eman, F.M.I. (2012): CHEMICAL ANALYSIS OF CHICKEN MEAT WITH RELATION TO ITS QUALITY. BENHA VETERINARY MEDICAL JOURNAL, 23 (1): 87-92.
- Edris, A.M.; Shaltout, F.A. and Abd Allah, A.M. (2005): Incidence of Bacillus cereus in some meat products and the effect of cooking on its survival. Zag. Vet. J.33 (2):118-124.
- Edris, A.M.; Shaltout, F.A. and Arab, W.S. (2005): Bacterial Evaluation of Quail Meat. Benha Vet. Med.J.16 (1):1-14.
- Edris, A.M.; Shaltout, F.A.;Salem, G.H. and El-Toukhy,E.I. (2011): Incidence and isolation of Salmonellae from some meat products.Benha University, Faculty of Veterinary Medicine, Fourth Scientific Conference 25-27th May 2011Veterinary Medicine and Food Safety) 172-179 benha, Egypt.
- Edris AA, Hassanin, F. S; Shaltout, F.A., Azza H Elbaba and Nairoz M Adel. (2017): Microbiological Evaluation of Some Heat Treated Fish Products in Egyptian Markets. EC Nutrition 12.3 (2017): 134-142.
- Edris, A.M.; Shaltout, F.A.;Salem, G.H. and El-Toukhy,E.I. (2011): Plasmid profile analysis of Salmonellae isolated from some meat products. Benha University, Faculty of Veterinary Medicine, Fourth Scientific Conference 25-27th May 2011Veterinary Medicine and Food Safety)194-201 benha, Egypt.
- Ragab A, Abobakr M. Edris, Fahim A.E. Shaltout, Amani M. Salem (2022): Effect of titanium dioxide nanoparticles and thyme essential oil on the quality of the chicken fillet. BENHA VETERINARY MEDICAL JOURNAL41 (2): 38-40.
- Hassan, M.A, Shaltout, F. A, Arfa M.M, Mansour A.H and Saudi, K. R (2013): BIOCHEMICAL STUDIES ON RABBIT MEAT RELATED TO SOME DISEASES. BENHA VETERINARY MEDICAL JOURNAL 25 (1):88-93.
- Hassan, M.A and Shaltout, F.A. (1997): Occurrence of Some Food Poisoning Microorganisms In Rabbit Carcasses Alex.J.Vet.Science, 13 (1):55-61.

20. Hassan M, Shaltout FA* and Saqur N (2020): Histamine in Some Fish Products. *Archives of Animal Husbandry & Dairy Science* 2 (1): 1-3.
21. Hassan, M.A and Shaltout, F.A. (2004): Comparative Study on Storage Stability of Beef, Chicken meat, and Fish at Chilling Temperature. *Alex.J.Vet.Science*, 20 (21):21-30.
22. Hassan, M.A; Shaltout, F.A.; Arafa,M.M.; Mansour, A.H. and Saudi, K.R. (2013): Biochemical studies on rabbit meat related to some diseases. *Benha Vet. Med.J.25* (1):88-93.
23. Hassan, M.A; Shaltout, F.A.; Maarouf, A.A. and El-Shafey, W.S. (2014): Psychrotrophic bacteria in frozen fish with special reference to pseudomonas species. *Benha Vet. Med.J.27* (1):78-83.
24. Hassan, M.A; Shaltout, F.A.; Arafa,M.M.; Mansour, A.H. and Saudi, K.R. (2013): Bacteriological studies on rabbit meat related to some diseases *Benha Vet. Med.J.25* (1):94-99.
25. Hassanin, F. S; Hassan,M.A., Shaltout, F.A., Nahla A. Shawqy and 2Ghada A. Abd-Elhameed (2017): Chemical criteria of chicken meat. *BENHA VETERINARY MEDICAL JOURNAL*, 33 (2):457-464.
26. Shaltout, F. A. (2024). Egyptian Medicinal Plants and Respiratory Disease. *Journal of Agriculture and Education Research*. 2 (3), 1-7.
27. Hassanin, F. S; Hassan,M.A.; Shaltout, F.A. and Elrais-Amina, M (2014): CLOSTRIDIUM PERFRINGENS IN VACUUM PACKAGED MEAT PRODUCTS. *BENHA VETERINARY MEDICAL JOURNAL*, 26 (1):49-53.
28. Hassanien, F.S.; Shaltout, F.A.; Fahmey, M.Z. and Elsukkary, H.F. (2020): Bacteriological quality guides in local and imported beef and their relation to public health. *Benha Veterinary Medical Journal* 39: 125-129.
29. Hassanin, F. S; Shaltout,F.A. and, Mostafa E.M (2013): Parasitic affections in edible offal. *Benha Vet. Med.J.25* (2):34-39.
30. Hassanin, F. S; Shaltout, F.A., Lamada, H.M., Abd Allah, E.M. (2011): THE EFFECT OF PRESERVATIVE (NISIN) ON THE SURVIVAL OF LISTERIA MONOCYTOGENES. *BENHA VETERINARY MEDICAL JOURNAL* (2011)-SPECIAL ISSUE [I]: 141-145.
31. Shaltout FA. Dry-Aged Meat and their Importance. *Open J of Frail Sci* 2024, 2 (1): 000111. DOI: 10.23880/oajfs-16000111
32. Khattab, E.,Fahim Shaltout and Islam Sabik (2021): Hepatitis A virus related to foods. *BENHA VETERINARY MEDICAL JOURNAL* 40 (1): 174-179.
33. Shaltout, F. A. Human Parasites in Relation to Contaminated Food and Drinking Water. *J Biomed Sci Biotech Res*. 2024. 2 (1): 1-5.
34. Saad M. Saad, Fahim A. Shaltout, Amal A. A. Farag & Hashim F. Mohammed (2022): Organophosphorus Residues in Fish in Rural Areas. *Journal of Progress in Engineering and Physical Science* 1 (1): 27-31.
35. Shaltout FAE. Everything about Nutritional Value of the Meat Ingredients and How we can Reduce its Microbial Hazards. *J Vet Sci Res* 2025, 10 (1): 000283. DOI: 10.23880/oajvsr-16000283
36. Saif,M., Saad S.M., Hassanin, F. S; Shaltout FA, Marionette Zaghloul (2019): Molecular detection of enterotoxigenic Staphylococcus aureus in ready-to-eat beef products. *Benha Veterinary Medical Journal* 37 (2019) 7-11.
37. Saif,M., Saad S.M., Hassanin, F. S; Shaltout, F.A., Marionette Zaghloul (2019); Prevalence of methicillin-resistant Staphylococcus aureus in some ready-to-eat meat products. *Benha Veterinary Medical Journal* 37 (2019) 12-15.
38. Farag, A. A., Saad M. Saad¹, Fahim A. Shaltout¹, Hashim F. Mohammed (2023 a): Studies on Pesticides Residues in Fish in Menofia Governorate. *Benha Journal of Applied Sciences*, 8 (5): 323-330.
39. Shaltout, F. A. (2024): The concept of meat analysis in economy and public health, Dietary Nourishment and Food Processing Techniques (DNFPT) 1 (1) 1-7, DOI: 10.1875/dnfpt.2024/001
40. Farag, A. A., Saad M. Saad¹, Fahim A. Shaltout¹, Hashim F. Mohammed (2023 b): Organochlorine Residues in Fish in Rural Areas. *Benha Journal of Applied Sciences*, 8 (5): 331-336.
41. Shaltout, F.A., Mona N. Hussein, Nada Kh. Elsayed (2023): Histological Detection of Unauthorized Herbal and Animal Contents in Some Meat Products. *Journal of Advanced Veterinary Research* 13 (2): 157-160.
42. Shaltout, F. A., Heikal, G. I., Ghanem, A. M. (2022): Mycological quality of some chicken meat cuts in Gharbiya governorate with special reference to Aspergillus flavus virulent factors. *benha veteriv medical journal veterinary* 42 (1): 12-16.
43. Shaltout, F.A., Ramadan M. Salem, Eman M. Eldiasty, Fatma A. Diab (2022): Seasonal Impact on the Prevalence of Yeast Contamination of Chicken Meat Products and Edible Giblets. *Journal of Advanced Veterinary Research* 12 (5): 641-644.
44. Shaltout, F.A., Abdelazez Ahmed Helmy Barr and Mohamed Elsayed Abdelaziz (2022): Pathogenic Microorganisms in Meat Products. *Biomedical Journal of Scientific & Technical Research* 41 (4): 32836-32843.
45. Shaltout, F.A., Thabet, M.G. and Koura, H.A. (2017). Impact of Some Essential Oils on the Quality Aspect and Shelf Life of Meat. *J Nutr Food Sci.*, 7: 647.
46. Shaltout, F.A., Islam Z. Mohammed², El -Sayed A. Afify (2020): Bacteriological profile of some raw chicken meat cuts in Ismailia city, Egypt. *Benha Veterinary Medical Journal* 39 (2020) 11-15.
47. Shaltout, F.A.,Islam, Z. Mohammed², El -Sayed A. Afify (2020): Detection of E. coli O157 and Salmonella species in some raw chicken meat cuts in Ismailia province, Egypt. *Benha Veterinary Medical Journal* 39 (2020) 101-104.
48. Shaltout, F.A., E.M. El-diasty and M. A. Asmaa- Hassan (2020): HYGIENIC QUALITY OF READY TO EAT COOKED MEAT IN RESTAURANTS AT Cairo. *Journal of Global Biosciences* 8 (12): 6627-6641.
49. Shaltout, F.A., Marrionet Z. Nasief, L. M. Lotfy, Bossi T. Gamil (2019): Microbiological status of chicken cuts and its products. *Benha Veterinary Medical Journal* 37 (2019) 57-63.
50. Shaltout, F.A. (2019): Poultry Meat. *Scholarly Journal of Food and Nutrition* 22 1-2.
51. Shaltout, F.A. (2019): Food Hygiene and Control. *Food Science and Nutrition Technology* 4 (5): 1-2.
52. Hassanin, F. S; Shaltout, F.A., Seham N. Homouda and Safaa M. Arakeeb (2019): Natural preservatives in raw chicken meat. *Benha Veterinary Medical Journal* 37 (2019) 41-45.

53. Shaltout, D. E. (2024): Additives Extend the Food Shelf Life by Addition of Preservatives Nitrate, and Nitrite to Food, Dietary Nourishment and Food Processing Techniques, 1 (3): 1-12.
54. Hazaa,W., Shaltout, F.A., Mohamed El-Shate (2019): Prevalence of some chemical hazards in some meat products. Benha Veterinary Medical Journal 37 (2) 32-36.
55. Shaltout, F. A. E. (2024): Using of Meat Diets as a Functional Food, Dietary Nourishment and Food Processing Techniques, vol 1 (3): 1-14.
56. Shaltout, F. A. (2024) Evaluation of Hazards in food, Journal of Medical Discoveries, 1 (1);1-8 DOI: <https://www.doi.org/rpc/2024/rpc.jmd/0048>
57. Hazaa,W, Shaltout, F.A., Mohamed El-Shater (2019): Identification of Some Biological Hazards in Some Meat Products. Benha Veterinary Medical Journal 37 (2) 27-31.
58. Shaltout, F. A. (2024): Through a light on Meat as Functional food, International Journal of Nursing Didactics, 14 (08): 1-12. DOI: <https://doi.org/10.52845/IJND/2024/14-08-1>
59. Gaafar,R., Hassanin, F. S; Shaltout, F.A., Marionette Zaghloul (2019): Molecular detection of enterotoxigenic Staphylococcus aureus in some ready to eat meat-based sandwiches. Benha Veterinary Medical Journal 37 (2) 22-26.
60. Shaltout F. (2019) Microbial Contamination of Beef and Beef Products. J. Nutrition and Food Processing, 2 (2): 1; Doi:10.31579/2637-8914/014
61. Gaafar,R., Hassanin, F. S; Shaltout, F.A., Marionette Zaghloul (2019): Hygienic profile of some ready to eat meat product sandwiches sold in Benha city, Qalubiya Governorate, Egypt. Benha Veterinary Medical Journal 37 (2) 16-21.
62. Shaltout. F. A. (2024): Abattoir and Bovine Tuberculosis as a Reemerging Foodborne Disease. Biomed J Sci & Tech Res 54 (3)-2024. BJSTR. MS.ID.008545.
63. Saad S.M., Shaltout, F.A., Nahla A Abou Elroos, Saber B El-nahas (2019): Antimicrobial Effect of Some Essential Oils on Some Pathogenic Bacteria in Minced Meat. J Food Sci Nutr Res. 2019; 2 (1): 012-020.
64. Shaltout, F. A. E. (2024): Good News about Application of Advanced Methods in Food Examination, Dietary Nourishment and Food Processing Techniques, vol 1 (3): 1-9. DOI: 10.9567/3064-7061/WSJ.110.
65. Saad S.M., Shaltout, F.A., Nahla A Abou Elroos2 and Saber B El-nahas (2019): Incidence of Staphylococci and E. coli in Meat and Some Meat Products. EC Nutrition 14.6 (2019).
66. Shaltout, F. A. E. (2024): Our options to improve food safety and quality by using preservatives which are used in food processing and preservation, Dietary Nourishment and Food Processing Techniques, vol 1 (3): 1-16. DOI: 10.9567/3064-7061/WSJ.95.
67. Saad S.M., Hassanin, F. S.; Shaltout, F.A., Marionette Z Nassif, Marwa Z Seif. (2019): Prevalence of Methicillin-Resistant Staphylococcus Aureus in Some Ready-to-Eat Meat Products. American Journal of Biomedical Science & Research 4 (6):460-464.
68. Shaltout, Fahim (2019): Pollution of Chicken Meat and Its Products by Heavy Metals. Research and Reviews on Healthcare: Open Access Journal, 4, 3 (381-3382).
69. Shaltout, F. A.; E.M EL-dasty; M. S. M Mohamed (2018): Effects of chitosan on quality attributes fresh meat slices stored at 4 C. BENHA VETERINARY MEDICAL JOURNAL, VOL. 35, NO. 2: 157-168.
70. Shaltout and Abdel-Aziz, 2004: Salmonella enterica serovar Enteritidis in poultry meat and their epidemiology. Vet. Med. J. Giza, 52 (2004), pp. 429-436.
71. Shaltout, F.A., Hala F El-Shorah, Dina I El Zahaby, Lamiaa M Lotfy (2018): Bacteriological Profile of Chicken Meat Products. SciFed Food & Dairy Technology Journal, 2:3.
72. Shaltout, F.A., Mohamed, A.H. El-Shater., Wafaa Mohamed Abd El-Aziz (2015): Bacteriological assessment of Street Vended Meat Products sandwiches in kalyobia Governorate. BENHA VETERINARY MEDICAL JOURNAL, 28 (2):58-66,
73. Shaltout, F.A., Mohamed A El shatter and Heba M Fahim (2019): Studies on Antibiotic Residues in Beef and Effect of Cooking and Freezing on Antibiotic Residues Beef Samples. Scholarly Journal of Food and Nutritionm 2 (1) 1-4
74. Shaltout FA, Zakaria IM and Nabil ME. (2018): Incidence of Some Anaerobic Bacteria Isolated from Chicken Meat Products with Special Reference to Clostridium perfringens. Nutrition and Food Toxicology 2.5 (2018): 429-438.
75. Shaltout FA, Ahmed A A Maarouf and Mahmoud ES Elkhoully. (2017): Bacteriological Evaluation of Frozen Sausage. Nutrition and Food Toxicology 1.5; 174-185.
76. Shaltout FA, El-Toukhy EI and Abd El-Hai MM. (2019): Molecular Diagnosis of Salmonellae in Frozen Meat and Some Meat Products. Nutrition and Food Technology Open Access 5 (1): 1-6.
77. Shaltout, F.A., A.M.Ali and S.M.Rashad (2016): Bacterial Contamination of Fast Foods. Benha Journal of Applied Sciences (BJAS) 1 (2)45-51.
78. Shaltout, F.A., Zakaria. I. M., Jehan Eltanani, Asmaa. Elmelegy (2015): Microbiological status of meat and chicken received to University student hostel. BENHA VETERINARY MEDICAL JOURNAL, 29 (2):187-192, DECEMBER, 2015.
79. Saad,S.M.;Edris, A.M.; Shaltout,F.A. and Edris, Shimaa (2012): Isolation and identification of salmonellae and E.coli from meat and poultry cuts by using A.multiplex PCR. Benha Vet. Med.J.special issue 16-26.
80. Saad, S.M. and Shaltout, F.A. (1998): Mycological Evaluation of camel carcasses at Kalyobia Abattoirs. Vet.Med.J. Giza,46 (3):223-229.
81. Shaltout, F. A. (2024): Whey We Extend the Food Shelf Life by Aid of Natural Antioxidants?. Biomed J Sci & Tech Res 59 (1)-2024. BJSTR. MS.ID.009235
82. Saad S.M., Shaltout, F.A., Nahla A Abou Elroos, Saber B El-nahas. 2019: Antimicrobial Effect of Some Essential Oils on Some Pathogenic Bacteria in Minced Meat. J Food Sci Nutr Res. 2019; 2 (1): 012-020.
83. Saad S.M., Hassanin, F. S; Shaltout, F.A., Marionette Z Nassif, Marwa Z Seif. (2019): Prevalence of Methicillin-Resistant Staphylococcus Aureus in Some Ready-to-Eat Meat Products. American Journal of Biomedical Science & Research 4 (6):460-464.
84. Saad S.M., Shaltout, F.A., Nahla A Abou Elroos and Saber B El-nahas. (2019): Incidence of Staphylococci and E. coli in Meat and Some Meat Products. EC Nutrition 14.6 (2019).
85. Shaltout FA, Riad EM,TES Ahmed and AbouElhassan A. (2017): Studying the Effect of Gamma Irradiation on Bovine

- Offal's Infected with *Mycobacterium tuberculosis* Bovine Type. *Journal of Food Biotechnology Research* 1 (6): 1-5.
86. Shaltout FA, Zakaria IM and Nabil ME. (2018): Incidence of Some Anaerobic Bacteria Isolated from Chicken Meat Products with Special Reference to *Clostridium perfringens*. *Nutrition and Food Toxicology* 2.5 (2018): 429-438.
 87. Shaltout FA, Mohamed, A.Hassan and Hassanin, F. S (2004): THERMAL INACTIVATION OF ENTEROHAEMORRHAGIC *ESCHERICHIA COLI* O157:H7 AND ITS SENSITIVITY TO NISIN AND LACTIC ACID CULTURES. 1st Ann. Confr., FVM., Moshtohor, Sept, 2004.
 88. Shaltout FA, El-diasty, E.M.;Elmeslamy, M. and Elshaer, M. (2014): Study on fungal contamination of some chicken meat products with special reference to 2 the use of PCR for its identification. Conference, *Veterinary Medical Journal – Giza* vol. December 2014/12/17 vol.60: 1-10.
 89. Shaltout, F.A. (2002): Microbiological Aspects of Semi-cooked chicken Meat Products. *Benha Veterinary Medical Journal* 13,2,: 15-26.
 90. Shaltout FA, Thabet, M.G2 and Hanan, A. Koura3. (2017): Impact of some essential oils on the quality aspect and shelf life of meat. *BENHA VETERINARY MEDICAL JOURNAL*, 33, (2): 351-364.
 91. Shaltout FA, Mohammed Farouk; Hosam A.A. Ibrahim and Mostafa E.M. Afifi4.2017: Incidence of Coliform and *Staphylococcus aureus* in ready to eat fast foods. *BENHA VETERINARY MEDICAL JOURNAL*, 32 (1): 13 - 17, MARCH, 2017.
 92. Shaltout, F.A., Zakaria, I.M., Nabil, M.E. (2017): Detection and typing of *Clostridium perfringens* in some retail chicken meat products. *BENHA VETERINARY MEDICAL JOURNAL*, 33 (2):283-291.
 93. Shaltout, F.A. (1992): Studies on Mycotoxins in Meat and Meat by Products. M.V.Sc Thesis Faculty of Veterinary Medicine, Moshtohor, Zagazig University Benha branch.
 94. Shaltout, F.A. (1996): Mycological And Mycotoxicological profile Of Some Meat products. Ph.D.Thesis, Faculty of Veterinary Medicine, Moshtohor, Zagazig University Benha branch.
 95. Shaltout, F.A. (1998): Proteolytic Psychrotrophes in Some Meat products. *Alex. Vet. Med. J.* 14 (2):97-107.
 96. Shaltout, F.A. (1999): Anaerobic Bacteria in Vacuum Packed Meat Products. *Benha Vet. Med.J.* 10 (1):1-10.
 97. Shaltout, F.A. (2000): Protozoal Foodborne Pathogens in some Meat Products. *Assiut Vet. Med. J.* 42 (84):54-59.
 98. Shaltout, F.A. (2001): Quality evaluation of sheep carcasses slaughtered at Kalyobia abattoirs. *Assiut Veterinary Medical Journal*, 46 (91):150-159.
 99. Shaltout, F.A. (2002): Microbiological Aspects of Semi-cooked Chicken Meat Products. *Benha Vet.Med.J.* 13 (2):15-26.
 100. Shaltout, F.A. (2003): *Yersinia Enterocolitica* in some meat products and fish marketed at Benha city. The Third international conference Mansoura 29-30 April.
 101. Shaltout, F.A. (2009): Microbiological quality of chicken carcasses at modern Poultry plant. The 3rd Scientific Conference, Faculty of Vet. Med., Benha University, 1-3 january.
 102. Shaltout, F.A. and Abdel Aziz, A.M. (2004): *Salmonella enterica* Serovar Enteritidis in Poultry Meat and their Epidemiology. *Vet.Med.J., Giza*, 52 (3):429-436.
 103. Shaltout, F.A. and Abdel Aziz, A.M. (2004): *ESCHERICHIA COLI* STRAINS IN SLAUGHTERED ANIMALS AND THEIR PUBLIC HEALTH IMPORTANCE. *J.Egypt. Vet. Med. Association* 64 (2):7-21.
 104. Shaltout, F.A., Amin, R., Marionet, Z., Nassif and Shimaa, Abdel-wahab (2014): Detection of aflatoxins in some meat products. *Benha veterinary medical journal*, 27 (2) :368-374.
 105. Shaltout, F.A. and Afify, Jehan Riad, EM and Abo Elhasan, Asmaa, A. (2012): Improvement of microbiological status of oriental sausage. *Journal of Egyptian Veterinary Medical Association* 72 (2):157-167.
 106. Shaltout, F.A. and Daoud, J. R. (1996): Chemical analytical studies on rabbit meat and liver. *Benha Vet. Med.J.* 8 (2):17-27.
 107. Shaltout, F.A. and Edris, A.M. (1999): Contamination of shawerma with pathogenic yeasts. *Assiut Veterinary Medical Journal*, 40 (64):34-39.
 108. Shaltout, F. A.; Eldiasty, E. and Mohamed, M.S. (2014): Incidence of lipolytic and proteolytic fungi in some chicken meat products and their public health significance. *Animal Health Research Institute : First International Conference on Food Safety and Technology* 19-23 June 2014 Cairo Egypt pages 79-89.
 109. Shaltout, F.A.; Eldiasty, E.; Salem, R. and Hassan, Asmaa (2016): Mycological quality of chicken carcasses and extending shelf – life by using preservatives at refrigerated storage. *Veterinary Medical Journal -Giza (VMJG)* 62 (3)1-7.
 110. Shaltout, F.A.; Salem, R. Eldiasty, E.; and Diab, Fatema. (2016): Mycological evaluation of some ready to eat meat products with special reference to molecular characterization. *Veterinary Medical Journal -Giza* 62 (3)9-14.
 111. Shaltout, F. A.; Elshater, M. and Wafaa, Abdelaziz (2015): Bacteriological assessment of street vended meat products sandwiches in Kalyobia Governorate. *Benha Vet. Med.J.* 28 (2):58-66.
 112. Shaltout, F. A.; Gerges, M.T. and Shewail, A.A. (2018): Impact of Organic Acids and Their Salts on Microbial Quality and Shelf Life of Beef. *Assiut veterinary medical journal* 64 (159): 164-177.
 113. Shaltout, F.A.; Ghoneim, A.M.; Essmail, M.E. and Yousseif, A. (2001): Studies on aflatoxin B1 residues in rabbits and their pathological effects. *J.Egypt. Vet. Med. Association* 61 (2):85-103.
 114. Shaltout, F.A. and Hanan, M.T. El-Lawendy (2003): Heavy Metal Residues In Shawerma. *Beni-Suef Vet.Med.J.* 13 (1):213-224.
 115. Shaltout, F.A. and Hashim, M.F. (2002): Histamine in salted, Smoked and Canned Fish products. *Benha Vet. Med.J.* 13 (1):1-11.
 116. Shaltout, F.A.; Hashim, M.F. and Elnahas, S. (2015): Levels of some heavy metals in fish (*tilapia nilotica* and *Claris lazera*) at Menufia Governorate. *Benha Vet. Med.J.* 29 (1):56-64.
 117. Shaltout, F.A. and Ibrahim, H.M. (1997): Quality evaluation of luncheon and Alexandrian sausage. *Benha Vet. Med.J.* 10 (1):1-10.

118. Shaltout, F.A.; Nassif, M and Shakran, A (2014): Quality of battered and breaded chicken meat products. *Global Journal of Agriculture and Food Safety Science – 1 (2)* ISSN 2356-7775.
119. Shaltout, F.A., Amani M. Salem, A. H. Mahmoud, K. A (2013): Bacterial aspect of cooked meat and offal at street vendors level. *Benha veterinary medical journal*, 24 (1): 320-328.
120. Shaltout, F.A. and Salem, R.M. (2000): Moulds, aflatoxin B1 and Ochratoxin A in Frozen Livers and meat products. *Vet. Med. J. Giza* 48 (3): 341-346.
121. Yasser H. Al-Tarazi, A. Al-Zamil, Shaltout FA. and H. Abdel-Samei (2002). Microbiological status of raw cow milk marketed in northern Jordan. *AVMJ Volume 49 Issue 96 Pages 180-194*
122. Shaltout FA, Zakaria IM and Nabil ME. (2018): Incidence of Some Anaerobic Bacteria Isolated from Chicken Meat Products with Special Reference to *Clostridium perfringens*. *Nutrition and Food Toxicology* 2 (5): 429-438.
123. Shaltout, F. A.; El-diasty, E.M. and Mohamed, M. S. (2014): Incidence of lipolytic and proteolytic fungi in some chicken meat products and their public health significance. 1st Scientific conference of food safety and Technology. 2014, pp. 79-89.
124. Shaltout, F. A.; El-diasty, E.M.; Salem, R. M. and Asmaa, M. A. Hassan. 2016: Mycological quality of chicken carcasses and extending shelf -life by using preservatives at refrigerated storage. *Veterinary Medical Journal – Giza*, 62 (3) :1-10.
125. Shaltout FA, R.M. Salem, E.M. El-Diasty and W.I.M. Hassan. 2019: Effect of Lemon Fruits and Turmeric Extracts on Fungal Pathogens in Refrigerated Chicken Fillet Meat. *Global Veterinaria* 21 (3): 156-160,
126. Shaltout FA, El-diasty, E.M.; Elmeslamy, M. and Elshaer, M. (2014): Study on fungal contamination of some chicken meat products with special reference to 2 the use of PCR for its identification. Conference, *Veterinary Medical Journal – Giza* vol. December 2014/12/17 vol. 60 1-10.
127. Shaltout, F. A.; Salem, R. M; El-diasty, Eman and Fatema, A.H. Diab. (2016): Mycological evaluation of some ready to eat meat products with special reference to molecular characterization. *Veterinary Medical Journal – Giza*. 62 (3): 9-14.
128. Shaltout FA, Ahmed, A.A. Maarouf, Eman, M.K. Ahmed (2018): Heavy Metal Residues in chicken cuts up and processed chicken meat products. *BENHA VETERINARY MEDICAL JOURNAL*, 34 (1): 473-483.
129. Shaltout, F.A.; Hanan M. Lamada, Ehsan A.M. Edris. (2020): Bacteriological examination of some ready to eat meat and chicken meals. *Biomed J Sci & Tech Res.*, 27 (1): 20461-20465.
130. Sobhy, Asmaa and Shaltout, Fahim (2020): Prevalence of some food poisoning bacteria in semi cooked chicken meat products at Qaliubiya governorate by recent Vitek 2 compact and PCR techniques. *Benha Veterinary Medical Journal* 38 (2020) 88-92.
131. Shaltout, F. A. (2024): Good Idea on Preservatives and the Natural Preservatives and Meat Preservation Against the Foodborne Pathogens and the Spoilage Microorganisms. *Biomed J Sci & Tech Res* 57 (5)-2024. BJSTR. MS.ID.009067.
132. Sobhy, Asmaa and Shaltout, Fahim (2020): Detection of food poisoning bacteria in some semi-cooked chicken meat products marketed at Qaliubiya governorate. *Benha Veterinary Medical Journal* 38 (2020) 93-96.
133. Shaltout, F.A. (2024): Abattoir And Bovine Tuberculosis as A Reemerging Foodborne Diseases. *Clinical Medical Reviews and Report* 6 (1): 1-7.
134. Shaltout, F.A. (2023): Viruses in Beef, Mutton, Chevron, Venison, Fish and Poultry Meat Products. *Food Science & Nutrition Technology* 8 (4): 1-10.
135. Shaltout, F. A. (2024): Human Salmonellosis Acquired through the Food". *Acta Scientific Pharmaceutical Sciences* 8. (3): 1-6: 12-17
136. Elkholy, R. A; Hussein, M. N; Abou El-Roos, N. A. and Shaltout, F.A.E. (2025) Enhancing Microbiological and Histological Quality of Frozen Turkey Meat Using Vinegar. *Egyptian Journal of Veterinary Sciences* pp 1-8. DOI: 10.21608/EJVS.2024.291707.2118
137. Shaltout, F. A. (2024): Availability, Price, Tradition, Religion, Income, Social, Development and Economic Influences on Meat Consumption. *Med J Clin Trials Case Stud* 2024, 8 (2): 000370
138. Mohamed Q. M., Fahim A. Shaltout, f.A. and Ali, E.A. (2025): Multidrug-Resistant Bacteria from Raw Chevron and Mutton Meat. *Egyptian Journal of Veterinary Sciences* pp 1-8.
139. Shaltout, F. A. E; Ab delazez Ahmed Helmy Barr, Mohamed Elsayed Abdelaziz. (2024) : Pathogenic Microorganisms in Meat Products. *Biomed J Sci & Tech Res* 41 (4)-2022. BJSTR. MS.ID.006623.
140. Mohamed Q. M., Fahim A. Shaltout, f.A. and Ali, E.A. (2025): Bacteriological Quality Profiles and Prevalence of *Staphylococcus aureus*, *Salmonella* Species, and *E. coli* in Meat Samples of Sheep and Goats. *Egyptian Journal of Veterinary Sciences* pp 1-7. DOI: 10.21608/EJVS.2024.312380.2317
141. Ibrahim, S. M.; Hassanin, F. S.; Abou-Elroos, N. S. and Shaltout, F.A (2025): Quantifying The antimicrobial Efficacy of Selected Herbal Essential Oils Against Bacteria in Simulated Beef Steak Conditions. *Egyptian Journal of Veterinary Sciences*, pp 1-9.
142. Shaltout, F. A. (2024): The Availability, the Price, the Tradition, the Religion, the Income, the Social, the Development and the Economic Influences on the Meat Consumption. *Biomed J Sci & Tech Res* 55 (4)-2024. BJSTR. MS.ID.008734.
143. Ibrahim, S. M.; Hassanin, F. S.; Abou-Elroos, N. S. and Shaltout, F.A (2025): Evaluating The impact of Certain Herbal Essential Oils on The Shelf Life and Chemical Composition of Beef Steak. *Egyptian Journal of Veterinary Sciences*, pp. 1-8.
144. Shaltout, F. A. (2024): Our Opinion on Using of Irradiation in Food Preservation and Production. *Journal of Medical and Clinical Case Reports*, 1 (6): 1-9. <https://doi.org/10.61615/JMCCR/2024/AUG027140805>
145. Anees, K. P; El-diasty, E. M. and Shaltout, F. A. (2023): Mycological Evaluation and Occurrence of Aflatoxins and Ochratoxin A in *Tilapia Oreochromis niloticus* Fish and Fish Products. *Journal of Advanced Veterinary Research*, 13 (7): 1381-1385.
146. AMR, A. K; HASSANIN, F. S.; HASSAN, M. A. and SHALTOUT, F. A. E. (2024): TRIALS TO ESTIMATE AND CONTROL THE RESIDUAL LEVELS OF HETEROCYCLIC AROMATIC AMINES IN MEAT PRODUCTS. *Assiut Vet. Med. J.*, 70 (182) : 98-105.
147. Shaltout, F. A.; Mohammed, I.; Afify, E. A. (2020): Detection of *E. coli* O157 and *Salmonella* species in some raw chicken

- meat cuts in Ismailia province, Egypt. *Benha Veterinary Medical Journal* 39 (2): 101-104.
148. Hassanin, F. S.; Shaltout, F. A.; Maarouf, A. A.; El-Sisy, S. F.; Ahmed, A. E. (2020): Bacteriological profile of frozen chicken meat cuts at Qalubiya governorate markets. *Benha Veterinary Medical Journal* 39 (2) 1-5.
 149. Shaltout, F. A.; Heikal, G. I.; Ghanem, A. M. (2022): Mycological quality of some chicken meat cuts in Gharbiya governorate with special reference to *Aspergillus flavus* virulent factors. *Benha Veterinary Medical Journal* 40 (42) 12-16.
 150. Shaltout, F. (2024) Application of Irradiation in Food Preservation and Production. *Journal of Pathology Research Reviews & Reports. SRC/JPR-190. 6 (5): 1-8.*
 151. Taha, S. T.; Shaltout, F. A.; Shimaa, N. Edris, S. N.; Mohamed, E. Nabil, M. E. (2024): Effect of lavender oil, clove oil and frankincense extract on sensory and microbial properties of raw drumsticks in refrigerator. *Benha Veterinary Medical Journal* 46 (1) 135-139.
 152. Shaltout, F. A.; Salem, R. M; Eldiasty, E. M and Diab, F. A. (2023): Experimental Study on the Effect of Propionibacterium and Acetic acid on *Candida albicans* contamination in chicken fillet Stored at Chilling Conditions. *Benha Veterinary Medical Journal* 43 (2) 91-96.
 153. Mubarak, S. R.; Abou EL-Roos, N. A.; Hussein, M. N. and Shaltout, F. A. E. (2024): Comparative microbiological evaluation between fresh and frozen bovine liver. *Benha Veterinary Medical Journal* 47 (1) 99-102.
 154. El Asely, M. M.; Fath Elbab, G. F.; Shaltout, F. A. E. (2024): Antibiotic Residues in Commercially Available Freshwater and Marine Fish: A Risk Assessment. *Egyptian Journal of Aquatic Biology & Fisheries*, 28 (1): 397 – 410.
 155. El Asely, M. M.; Fath Elbab, G. F. and Shaltout, A. E. (2025): Impact of Freezing Intervals on Oxytetracycline and Ciprofloxacin Residues in Nile Tilapia and Catfish Muscles. *Egypt. J. Vet. Sci. Vol. 56, No. 7, pp. 1419-1424.*
 156. Elkholy, R. A.; Abou EL-Roos, N. A.; Hussein, M. N. and Shaltout, F. A. E. (2025): Differential Microbiological Quality on Marketed Frozen Turkey Breast and Thigh Meat. *Egypt. J. Vet. Sci.* 56, (1), pp. 1-10.
 157. Shaltout, F. A. (2024): THE FOOD ADDITIVES USED IN FOOD PRODUCTION, ADVANTAGES AND DISADVANTAGES. *World Journal of Internal Medicine and Surgery* 1 (6): 1-17
 158. Shaltout, F. A. (2024): Right Methods to Extend the Meat Shelf- Life by Using of Natural Preservatives and Their Public Health Importance. *Journal of Medicine Care and Health Review* 1 (2): 1-17.
 159. Saad M. Saad, Fahim A. Shaltout, Amal A. A. Farag & Hashim F. Mohammed (2022): Organophosphorus Residues in Fish in Rural Areas. *Journal of Progress in Engineering and Physical Science* 1 (1): 27-31. doi:10.56397/JPEPS.2022.11.05
 160. Shaltout, F. A. (2024): Importance of Extending the Shelf Life of the Meat. *Journal of Medical and Clinical Case Reports* 01 | (9): 1-10.
 161. Shaltout, F. A. E., Mona N. Hussein, Nada Kh. Elsayed (2023): Histological Detection of Unauthorized Herbal and Animal Contents in Some Meat Products. *Journal of Advanced Veterinary Research* (2023) 13 (2): 157-160.
 162. Shaltout, F. A (2023): Abattoir And Bovine Tuberculosis as A Reemerging Foodborne Disease. *Clinical Medical Reviews and Reports* 6 (1): 1-7
 163. Shaltout, F. A., Ramadan M. Salem, Eman M. Eldiasty, Fatma A. Diab (2022): Seasonal Impact on the Prevalence of Yeast Contamination of Chicken Meat Products and Edible Giblets. *Journal of Advanced Veterinary Research*, 12 (5): 641-644.
 164. Shaltout, S. and Shaltout, F. (2024), "Food Borne Bacterial Diseases Due to Consumption of Meat, Fish and Poultry Products", *Arch Health Sci*; 8 (1): 1-8.
 165. Shaltout, F. A. (2024): Our Opinion on Using of Irradiation in Food Preservation and Production. *Journal of Medical and Clinical Case Reports* 01 | (6): 1-9
 166. Hakeem, K. P.; El-diasty, E. M.; Shaltout, F. A. E. (2023): Effects of natural compounds of some plants on microbial contamination and sensory quality of fish fillet during refrigeration. *Benha Veterinary Medical Journal* 45 (1) 152-156.

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