Damanhur University
Faculty of Veterinary Medicine
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Antibacterial activity of some medicinal plants on microbes in chicken fillet

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List of Abbreviations

E.coli	*Escherichia coli*
ETEC	Shiga toxin producing E.coli
CDC	Center for Disease Control and Prevention
EFSA	European food safety Authority
EHEC	Enterohemorragic *Escherichia coli*
EIEC	Enteroinvasive *Escherichia coli*
EPEC	Enteropathogenic *Escherichia coli*
ETEC	Enterotoxigenic *Escherichia coli*
FAO	Food and Agriculture Organization of the United Nations
FDA	Food and Drug Administration
FSIS	Food Safety and Inspection service
HACCP	Hazard Analysis Critical Control Point
ICMSF	International commission of Microbiological Specification for Foods
ISO	International Organization for Standardization
Staph.aureus	*Staphylococcus aureus*
SE_S	*Staphylococcal* enterotoxins
SEPO	*Staphylococcal* food poisoning outbreaks
M.Olifera	Moringa Olifera
WHO	World Health Organization
MOM	Moringa Oleifera Marinade
MRSA	methicillin resistance of *Staphylococcus aureus*
PBP2	Penicillin Binding Protein 2

6-SUMMARY

Poultry meat is a very popular food commodity around the world and its consumption has increased over the last decades in many countries.

However, increase in the consumption of poultry products has been accompanied by an increase in food-borne illnesses. Chicken and other types of poultry have higher pathogenic and spoilage bacterial counts than most of other foods

Due to bad use of antibiotics and their side effect such as anaphylaxis, digestive problems, teeth and bone staining, fungal infections and photosensitivity. So According to World Health Organization, medicinal plants would be the best source to obtain variety of drugs. About 80% of individuals from developed countries use traditional medicine, which has compounds derived from medicinal plants. Therefore, such plants should be investigated to better understand their properties, safety and efficiency.

The objective of this study was to determine the prevalence of *Staph.aureus, E.coli* and *Salmonella* as food poisoning organisms in chicken fillet and study antibacterial effects of some medicinal plants (Moringa olifera, Lemon and Green tea extracts) on contaminated chicken fillets. To achieve our goals, the following points were investigated.

1- A total of 100 samples of chicken fillet from local supermarket in Cairo government were collected and transported to the laboratory in ice box without due delay.
2- Examined bacteriologically for isolation and enumeration of *Staphylococcus aureus, Escherichia coli* and isolation of *Salmonella*.
3- *Staph.aureus, E.coli* and *salmonella* were recovered from total 100 samples of chicken fillet with incidence rate 56%, 70% and 12% respectively.
4- Count of *Staph.aureus (*$\log_{10}$ cfu/g) count ranged from (1.78) to (2.54) with average (2.10±0.03) and *E.coli (*$\log_{10}$ cfu/g) count ranged from (1.30) to (6) with average (3.03±0.19)**.**
5- Preparation of plant extracts Moringa olifera with concentration (4-6%), Lemon (100-50%) and Green tea (1-2.5%).
6- Adding of plant extracts on contaminated chicken fillet with *Staph.aureus, E.coli* and *Salmonella* experimentally to study their antibacterial activities.

7- Count of *Staph.aureus* in Moringa 4%decreased by 2nd day storage by (0.5log cfu/g) Meanwhile in treat with Moringa 6% decreased by about (one log in 2nd day of storage cfu/g). While Count of *E.coli* in treat 4% Moringa decreased by 2nd day storage by (0.5log cfu/g) Moreover in treat 6% Moringa continuo decrease E.coli from 2nd day of storage till end of storage by about (1.5 log cfu/g.).finally count of salmonella in treat 4% Moringa decreased by 2nd day by about (0.3 log cfu/g) and in treat 6% Moringa which decrease count of salmonella from 2nd day by about (one log cfu/g).

8- Count of *Staph.aureus* in treat lemon50% decreased from2nd day of storage by about (2log cfu/g) with lemon 100% decrease count with about (3 log cfu/g). while *E.coli* count with adding lemon 50%count decreased by about (3 log cfu/g) but in treat lemon 100% count decreased by(3.5 log cfu/g).moreover Salmonella count in lemon 50% decreased by about (2 log cfu/g) while in treat lemon 100% count decreased by (3log cfu/g). from 2nd day till 6th day of storage .

9- Treat green tea 1% and green tea 2.5% decrease *Staph.aureus* count with about (0.5 log cfu/g). While *E.coli* count decrease with treat green tea 2.5% with about (1 log cfu/g) more than decrease with treat green tea 1% which decrease *E.coli* count by (0.5 log cfu/g) and *Salmonella* count with treat green tea 1% decreased by (0.5 log cfu/g) Moreover treat green tea 2.5% by (1 log cfu /g). From 2nd day till 4th day of storage.