

ABSTRACT

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Title of thesis:

“Enteropathogenic *Escherichia coli* serovars of animal origin and their possible significance to public health.”

Thesis for the Degree of Master in Veterinary Medicine Science (Bacteriology, Mycology and Immunology)

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The present work was planned to determine the isolation, characterization and evaluation the prevalence of *E. coli* O157 and other *E. coli* serotypes in the raw milk and meat samples of bovine origin as well as detection of haemolysis production and the antimicrobial susceptibility and drug resistance of the isolates.

The *E. coli* isolates were secured from 100 raw milk and 100 raw meat samples obtained from shops and markets. The bacteriological and biochemical examination of milk and meat samples revealed the isolation of 48 and 76 *E. coli* isolates, respectively. The most prevalent serotypes were O119:K69, O112:K66 and O111:58. The other serotypes were O114:K90, O126:K71, O157:K⁻, O124:K72, O78:K80, O128:K67, O55:K59 and O26:K60. The incidence of serotype O157:H7 in milk and meat samples was 4.17% and 3.95%, respectively.

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عنوان الرسالة: الأنواع المصلية للميكروب القولونى ذو المنشأ الحيوانى وإحتمال علاقتها بالصحة العامة

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المستخلص

فى هذه الدراسة تم عزل وتوصيف وتقييم انتشار الميكروب القولونى ذو التركيب الجسمى ١٥٧ وبقية العنترات بين اللبن الخام واللحم النىء ذو المصدر البقرى بالاضافة الى خاصية ذوبان الدم وأختبار الحساسية للمعزولات. وأسفرت الأختبارات البكتريولوجية والبيوكيميائية لعدد ١٠٠ عينة لبن خام و ١٠٠ عينة لحم نىء عن عزل ٤٨ و ٧٦ سلالة من الميكروب القولونى على التوالى بنسبة كلية ٤٨% و ٧٦% على التوالى. وبالتصنيف السيرولوجى للميكروب القولونى وجد أن O112:K66 ، O119:K69 ، O111:K58 هم الأكثر انتشاراً بين المعزولات وبعض السلالات الاخرى O126:K71 ، O157:K⁻ ، O124:K72 ، O114:K90 ، O78:K80 ، O128:K67 ، O55:K59 ، O26:K60 بنسب مختلفة. وقد أوضحت هذه الدراسة عن أنتشار السلالة O157:H7 فى عينات اللبن واللحم بنسبة ٤,١٧% ، ٣,٩٥% على التوالى.

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LIST OF ABBREVIATIONS

Abbreviation	Definition
Bpw-vcc	Buffered peptone water supplemented with vancomycin cefixime and cefsulodin
CFU	Colony forming unit
CMT	California Mastitis Test
CNF	Cytotoxic necrotizing factors
DA	Diffuse adherence
EaggEc	Enteroggregative <i>E. coli</i>
EE	Mossel's Enteric Enrichment broth
EHEC	Enterohaemorrhagic <i>E. coli</i>
EIEC	Enteroinvasive <i>E. coli</i>
EMB	Enosin methylene blue agar medium
EPEC	Enteropathogenic <i>E. coli</i>
ETEC	Enterotoxigenic <i>E. coli</i>
FSIS	Food safety inspection service
HA	Haemagglutination
H.C.	Haemorrhagic colitis
HIY	Haemolysin
HUS	Haemolytic uremic syndrome

Abbreviation	Definition
LA	Localized adherence
LT	Heat labile toxin
MIC	Minimum inhibition concentration
MPN	Mean presumptive number
mTSB	Modified tryptic soy broth
N.S.F.	Non-Sorbitol fermenting
O157:NM	O157:Non motile strains
PAGE	Polyacrylamide gel electrophoresis
PVDF	Polyvinylidene difluoride
RAPD	Random amplified polymorphic DNA
S.F.	Sorbitol fermenting
SLT1	Shiga like toxin 1
SLT2	Shiga like toxin 2
SLTEC	Shiga like toxin <i>E. coli</i>
SMAC	Sorbitol MacConkey agar medium
ST	Heat stable toxin
STX1	Shiga toxin 1
STX2	Shiga toxin 2
TTP	Thrombotic thrombocytopenic purpura

Abbreviation	Definition
VT	Verotoxin
VT1	Verotoxin 1
VT2	Verotoxin 2
VTEC	Verotoxigenic <i>E. coli</i>
+ve	Positive
-ve	Negative