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()
(Most Probable Number)

Two-Step)
Single Agar Layer)

(Enrichment Method
(Method

.

(..)

(7).

Escherichia coli

(6)

(5).

E. coli

(4) 12-4.

:

- 1- Somatic Coliphages
- 2- Male Specific (F⁺) Coliphages
- Male Specific (F⁺) Coliphages

(III,II)

(IV,I)

(3).

:

20

/ 2010/

.(1) (1) 2010

:(1)

		/ /		1
	2009/10/11	/ /		2
		/ /		3
				4
		/ /		5
	2010/4/15	/ /		6
	2010/10/15			
		/ /		7

		/		8
		/		9
		/		10
	2010	/		11
				12
	2008			13
		/		14
/		/	-	15
				16

		/		17
		/		18
		-		
		/		19
		-		
		- /		20
				21
		- /		
		- /		22
				23
		/		
		-		24
		/		
		/		25
		/		26

		/		27
		-		
		/		28
		/		29
		/		30
		/		31
		-		
		/		32
		- /		33
		/		34
		/		35



(1):

Most Probable Number(MPN)

(2):

(Host Cells)

E.coli

(11 10)

:(Two-Step Enrichment Method)

.1

	100	-
.(4M MgCl ₂ . 6H ₂ O)	1.25	-
<i>E.coli</i>	0.5	-
10X Trptic Soy Broth (TSB)	5	-
	24-16	37
	100	100
	10	/ 6000
	0.22	-

<i>E.coli</i>	(10)	-
Trptic Soy Agar (TSA)			
	24	37	-
(Lysis Zones)			-
(Lysis			
(TSB)	1		Zone)
	5	/ 6000	-
		<i>E.coli</i>	-
37			(TSA)
		24	-
(Lysis Zones)			-
			-2
			100
			0.5
(4M MgCl ₂ . 6H ₂ O)	5	37	-
		<i>E.coli</i>	10
		48	-
			43
48	2X Trptic Soy Agar		-
			-
		24	37
	(plaques)		-
Plaque Forming Unit (PFU/100ml)			

		(plaque)		
		TSB	1	
	5	/ 6000		-
		<i>E.coli</i>		-
24	37		TSA	
		(Lysis Zones)		-
				:
		(9)		
(50-100		(5x10 ⁸ CFU/mL)		<i>E.coli</i>
100	37		Phage/0.1mL)	
			/	
	15	/ 6000		
	4		0.22	
				:
		Top-Agar Method (9)		
	0.1	<i>E.coli</i>	0.1	
Top agar	3			
Bottom agar		47	(0.7% agar)	
37			(1.5% agar)	
	200 -100		24	
		(PFU)		

:(Two-Step Enrichment Method)

(10) (Presence/Absence)
Enrichment Step
E. coli

(2)
E. coli
(3) (Lysis Zones)



()

(2)
:()



E.coli

(Lysis Zones)

:(3)

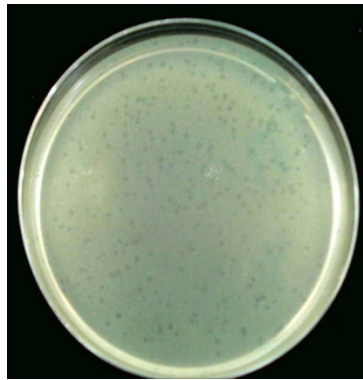
-2

:(Single Agar Layer Method)

100 (Plaques)
Plaques Forming Unit (PFU/100ml)
(11) 24
(4)

4-3

Single Isolated Plaque



E.coli (Plaques) :(4)

:

-3

100 /5.1-1.1 100 /23-1.1
() (2)
() (

(8).

(12).

(1 6).

A

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(2)

PFU/100ml		MPN/100ml	MPN/100ml		
-ve	-ve	-ve	-ve		1
1410	+ve	-ve	-ve		2
-ve	-ve	-ve	-ve		3
-ve	-ve	-ve	-ve		4

-ve	-ve	-ve	-ve		5
-ve	-ve	3.6	23		6
-ve	-ve	1.5	23		7
-ve	-ve	-ve	-ve		8
2800	+ve	-ve	-ve		9
-ve	-ve	-ve	-ve		10
-ve	-ve	1.1	23		11
-ve	-ve	-ve	-ve		12
-ve	-ve	1.1	1.1		13
-ve	-ve	-ve	-ve		14
-ve	-ve	-ve	-ve		15
-ve	-ve	-ve	-ve		16
-ve	-ve	-ve	9.2		17
-ve	-ve	-ve	9.2		18
720	+ve	-ve	-ve		19
-ve	-ve	-ve	-ve		20
-ve	-ve	-ve	23		21
-ve	-ve	1.1	23		22
-ve	-ve	-ve	-ve		23
-ve	-ve	-ve	23		24
-ve	-ve	-ve	-ve		25
-ve	-ve	-ve	-ve		26
-ve	-ve	-ve	-ve		27
-ve	-ve	-ve	-ve		28
-ve	-ve	-ve	-ve		29
-ve	-ve	-ve	-ve		30
-ve	-ve	-ve	-ve		31
-ve	-ve	-ve	-ve		32
-ve	-ve	-ve	-ve		33
-ve	-ve	-ve	-ve		34
-ve	-ve	-ve	-ve		35

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Detection of Coli phages in Bottled Water as an Indicator of Enteroviruses and Faecal pollution

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Abstract

Duo to the increased demand of bottled water in Iraq there has been a growing concern about the microbial quality of these products.

Thirty five different bottled water products (20 L) collected randomly from Baghdad local markets were examined for the bacterial indicators (coliform group and *streptococcus* spp)using Most Probable Number Method.

Products were also analyzed for coli phages as an indicator of enteroviruses and faecal pollution ,two procedures were applied , the first is Two-Step Enrichment Method and the second is Single Agar Layer Method .

The result show nine products gave a positive for bacterial indicator and coli phages detected in three products among these two products show a negative result for bacterial indicator such products can have an impact on the health of consumers.

The coli phages have been suggested as potential indicators of the presence of enteric viruses and faecal pollution in bottled water.