

# <sup>28</sup>**Results**

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## *Results*

Salmonella Strains were isolated from 16 cases (6%) out of 250 stool specimens collected over a period of 3 months. On XLD, DCA, and SS medium. Salmonella appeared as transparent or red colonies with black centers, reflecting H<sub>2</sub>S production.

All (100%) salmonellae strains produced mauve colonies on CAS medium 14 cases after 18 hours and 2 cases needed 48 hours of incubation.

Gram negative isolates other than Salmonella were Shigella 25 (10 %), Proteus 22 (8.8 %), Pseudomonas 7 (3%), Klebsiella 10 (4 %), Citrobacter 3 (1.2%) and Escherichia coli 167 (66 %).

***Table (2): Organisms isolated from stool samples.***

Causative organisms isolated	Number of organisms	%
E. coli	167	66
Shigella	25	10
Proteus	22	8.8
Salmonella	16	6
Klebsiella	10	4
Pseudomonas	7	3
Citrobacter	3	1.2

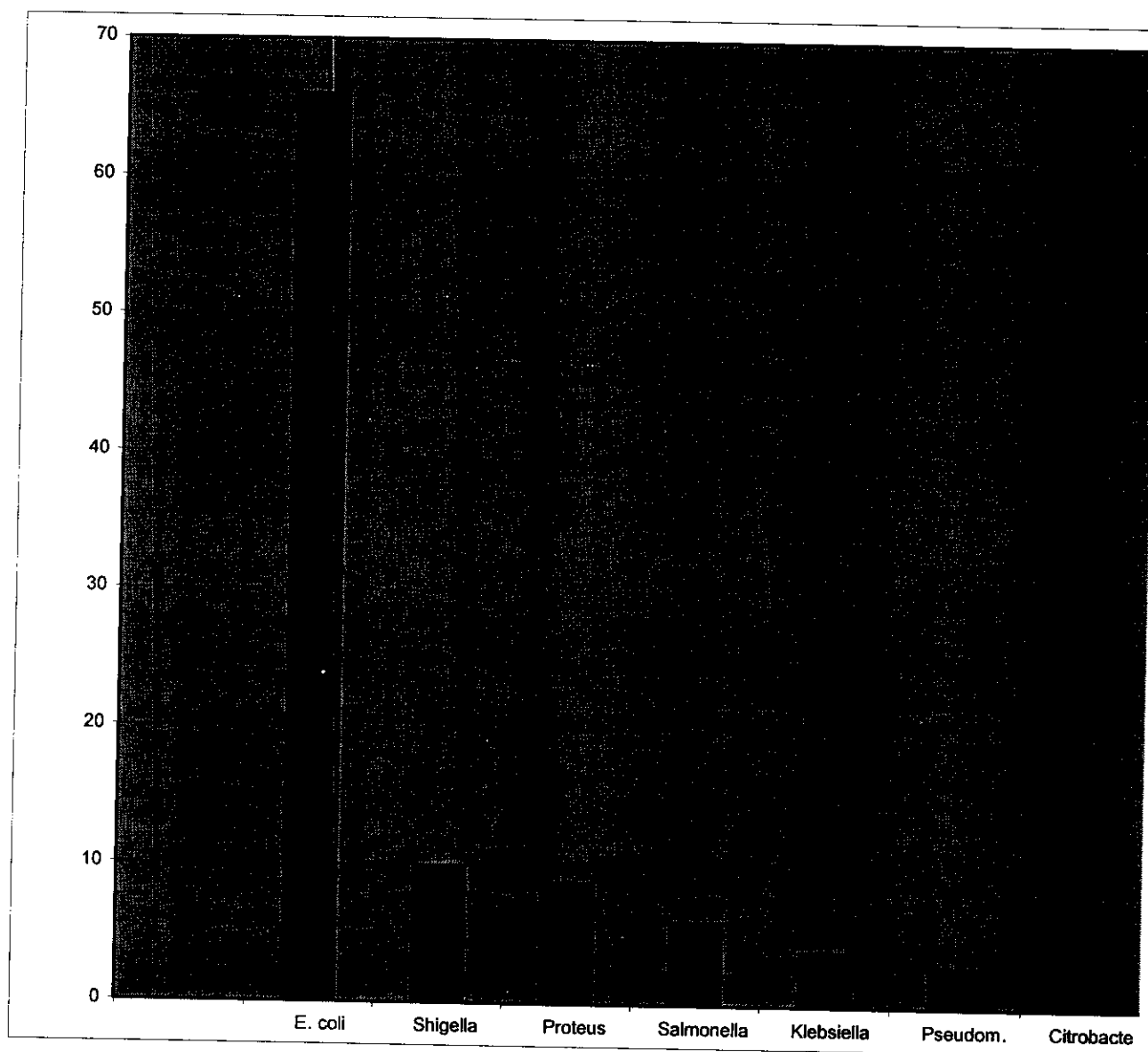


Fig (1)

*Fig(1): Organisms isolated from stool samples.*

**Table (3 ): Evaluation of appearance of salmonella isolates on CAS medium according to colonies colour .**

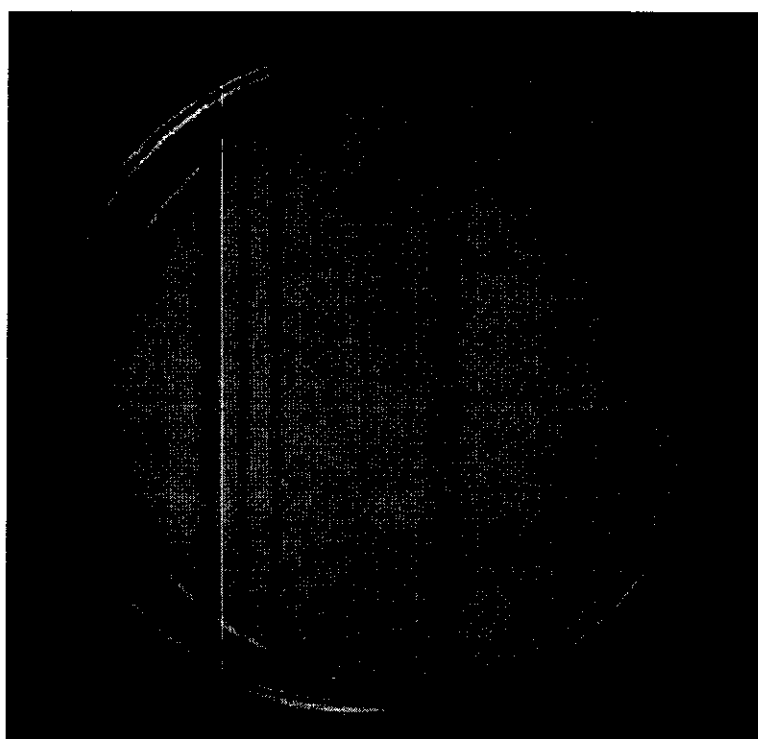
Colonies Colour	True Mauve	False Mauve	True Blue	False Blue	Positive Predictive Value	Negative Predictive Value	Efficiency
Total Number 250	16 (6 %)	6 ( 2 %)	228 ( 92%)	0 ( 0%)	72.73	100	97.6

**True Mauve:** Means Salmonella colonies giving mauve colouration on CAS medium

**False Mauve:**Means non-Salmonella colonies giving mauve colouration on CAS medium

**True Blue:** Means non-Salmonella colonies giving Blue colouration on CAS medium

**False Blue:** Means Salmonella colonies giving Blue colouration on CAS medium



FIG(2 ) Appearance of CAS plate media

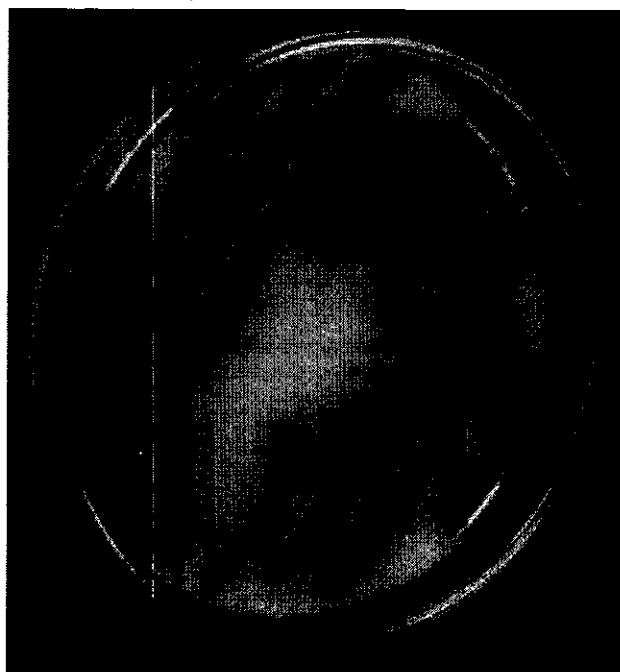


FIG. (3) Appearance of a clinical stool specimen on CAS medium ,with *Salmonella* spp. Appearing as mauve colonies and other enteric organisms, which appear as blue colonies.

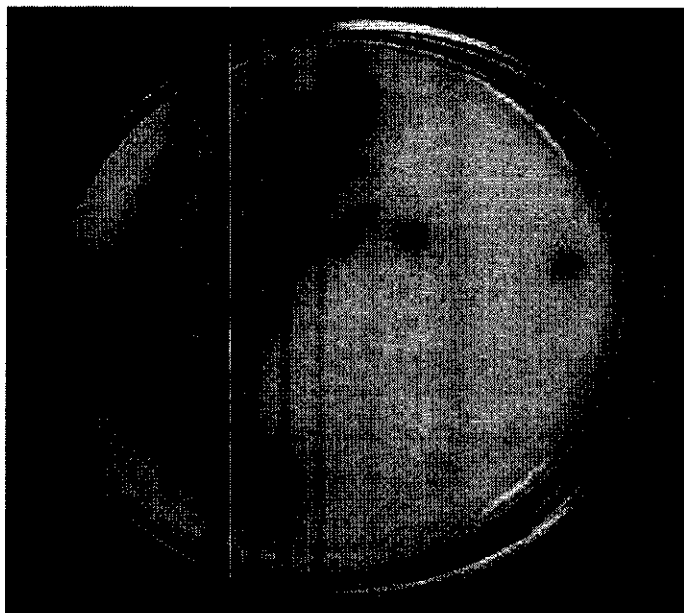


FIG (4) pure culture of salmonella on CAS medium (mauve)

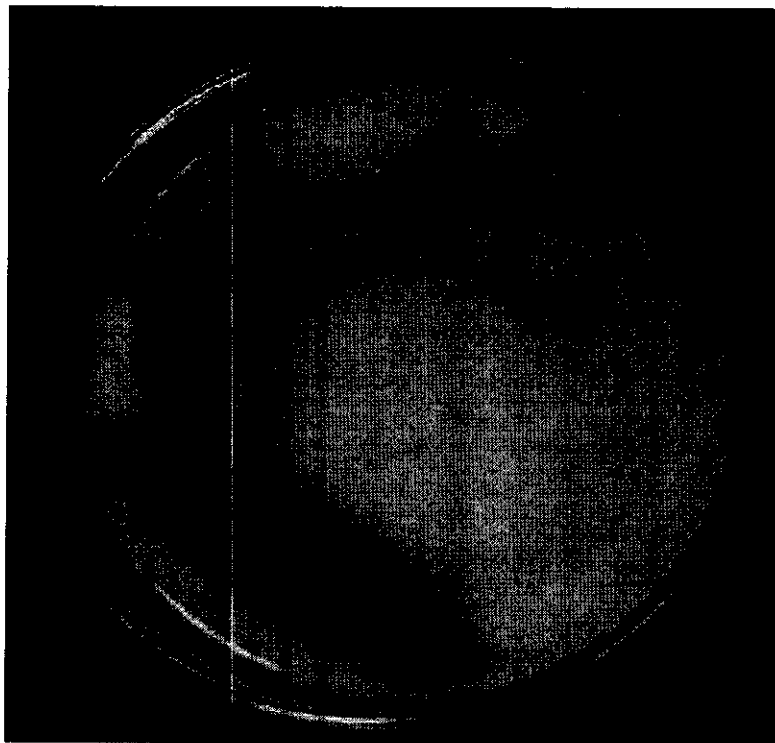


FIG (5) pure culture of E.coli on CAS medium (Blue )



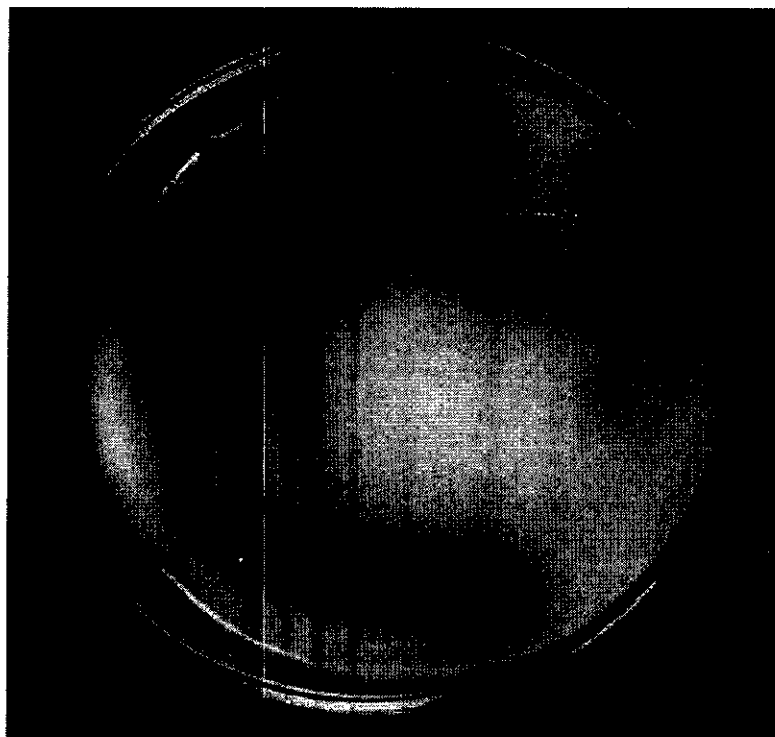
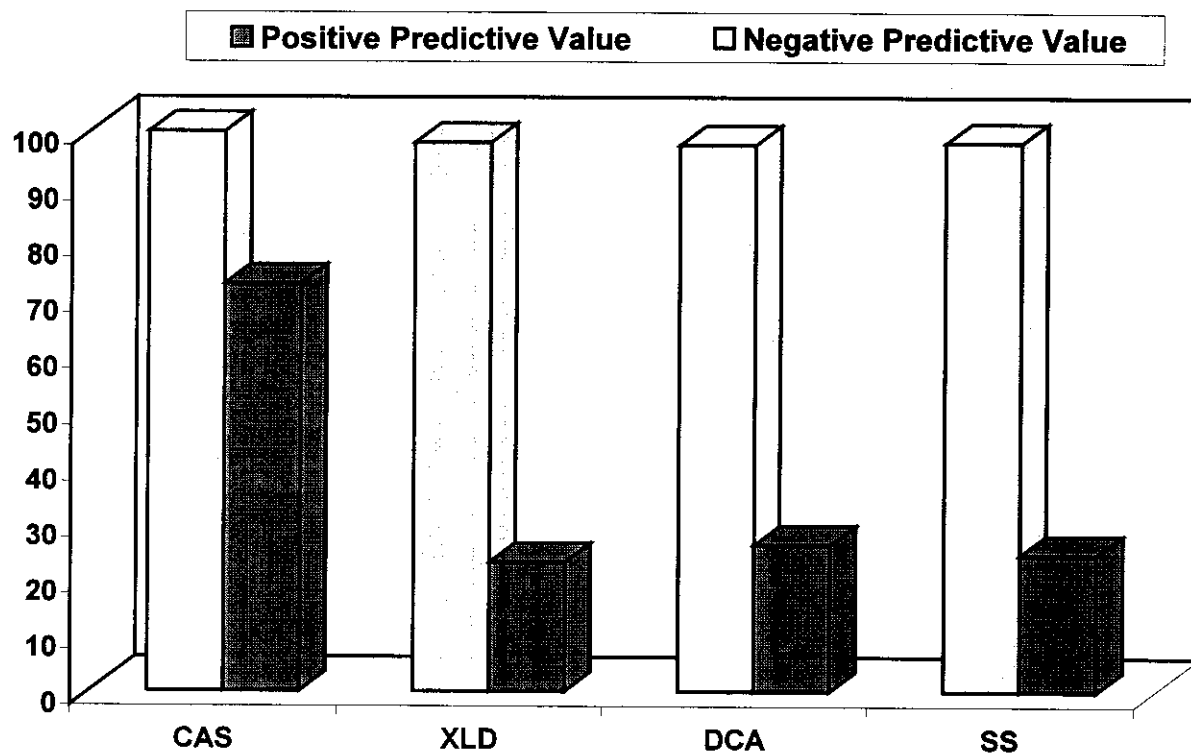


FIG (6) Clture of *Pseudomonas* spp. on CAS medium.  
Mauve(False Positive)

**Table (4): Comparison of four selective media for detection of Salmonella.**

	<b>True positive for Salmonella</b>	<b>False* positive for Salmonella</b>	<b>True -ve</b>	<b>Fales +ve</b>	<b>Positive Predictive Value</b>	<b>Negative Predictive Value</b>
<b>CAS</b>	16	6	228	0	72.73	100
<b>XLD</b>	12	40	194	4	23.08	97.98
<b>DCA</b>	11	31	203	5	26.19	97.60
<b>SS</b>	12	37	197	4	24.49	98.01

\*False +ve For Salmonella Means non-Salmonella colonies giving mauve colouration on CAS medium and giving red or colourless colouration with or without H<sub>2</sub>S production on other mediae.



**Figure (7)**

*Fig (7): Comparison of four selective media for detection of Salmonella.*

The sensitivity of CAS medium were 100 % compared with that of the XLD, DCA and SS medium (75 %, 68% and 75 %) respectively Table (5).

The specificity of CAS medium, however, was substantially higher (97.44 %) compared with that of the XLD, DCA and SS medium (82.9%,86%and84% )respectively Table (5).

The of Efficiency CAS medium, however, was substantially higher (97.60 %) compared with that of the XLD, DCA and SS medium (82.4%,85.6%and85.6% )respectively Table (5).

*Table (5): Comparison of four selective media according to their specificity , sensitivity and efficiency.*

	True positive for Salmonella	False positive for Salmonella	True -ve	Fales +ve	Specificity	Sensitivity	Efficiency
<b>CAS</b>	16	6	228	0	97.44	100	97.60
<b>XLD</b>	12	40	194	4	82.91	75	82.40
<b>DCA</b>	11	31	203	5	86.75	68.75	85.60
<b>SS</b>	12	37	197	4	84.19	75	83.60

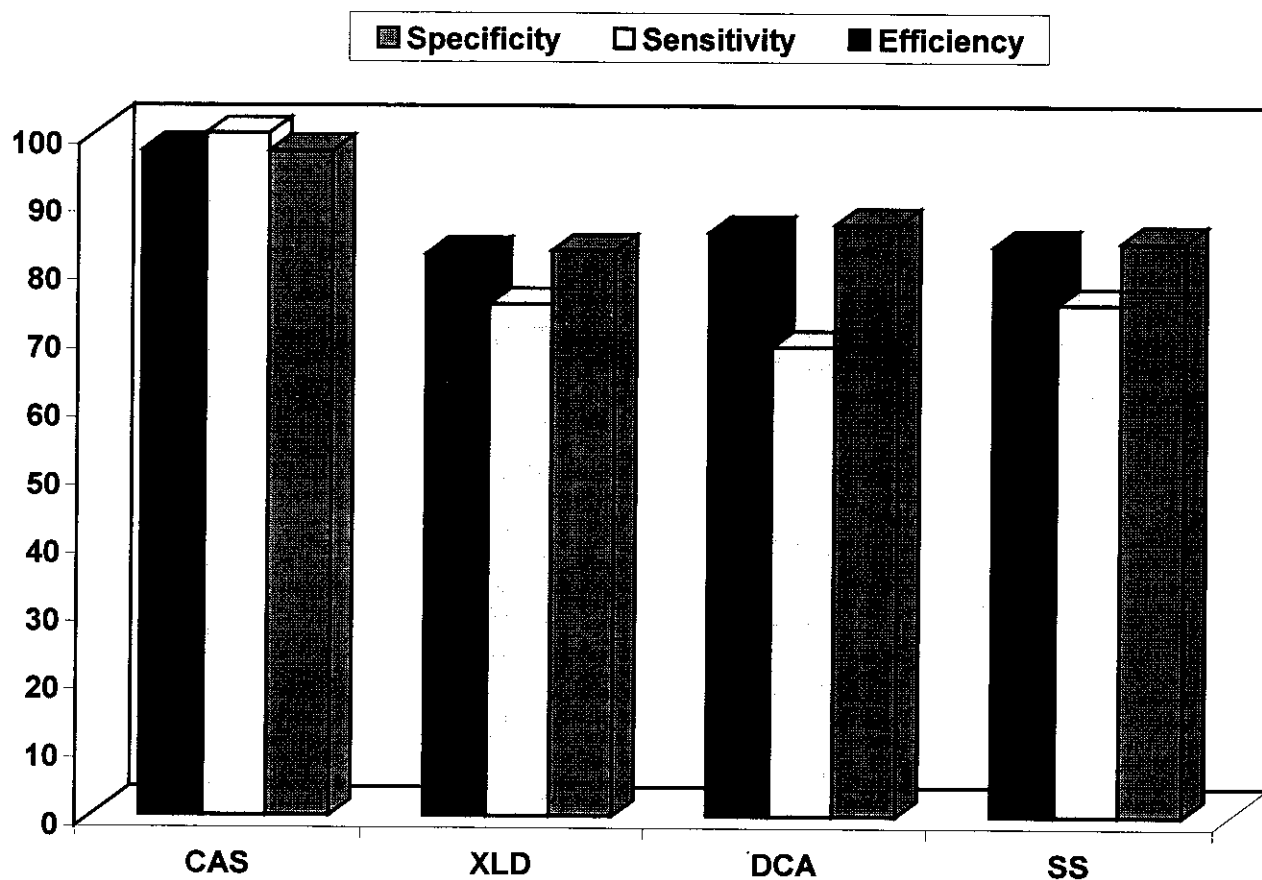


Figure (8)

*Fig(8): Comparison of four selective media according to their specificity , sensitivity and efficiency.*

All 16 *Salmonella* isolates were detected on CAS medium within 48 hr. of incubation without enrichment. 14 of 16 (88 %) isolates appeared as typical mauve colonies within 24 hr. of incubation, 2 (12%) isolates required 48 hr. to develop the mauve colouration **Table (6)**.

***Table (6): Comparison between Time needed for Isolation by Direct Plating on Different Mediae.***

	<b>Number of Salmonella Isolated</b>	<b>24h. of incubation</b>	<b>48h. of incubation</b>
<b>CAS</b>	<b>16</b>	<b>14 ( 88 % )</b>	<b>2 ( 12 % )</b>
<b>XLD</b>	<b>12</b>	<b>9 ( 75 % )</b>	<b>3 ( 25 % )</b>
<b>DCA</b>	<b>11</b>	<b>8 ( 72% )</b>	<b>3 ( 28 % )</b>
<b>SS</b>	<b>12</b>	<b>8 ( 66 % )</b>	<b>4 ( 34 % )</b>

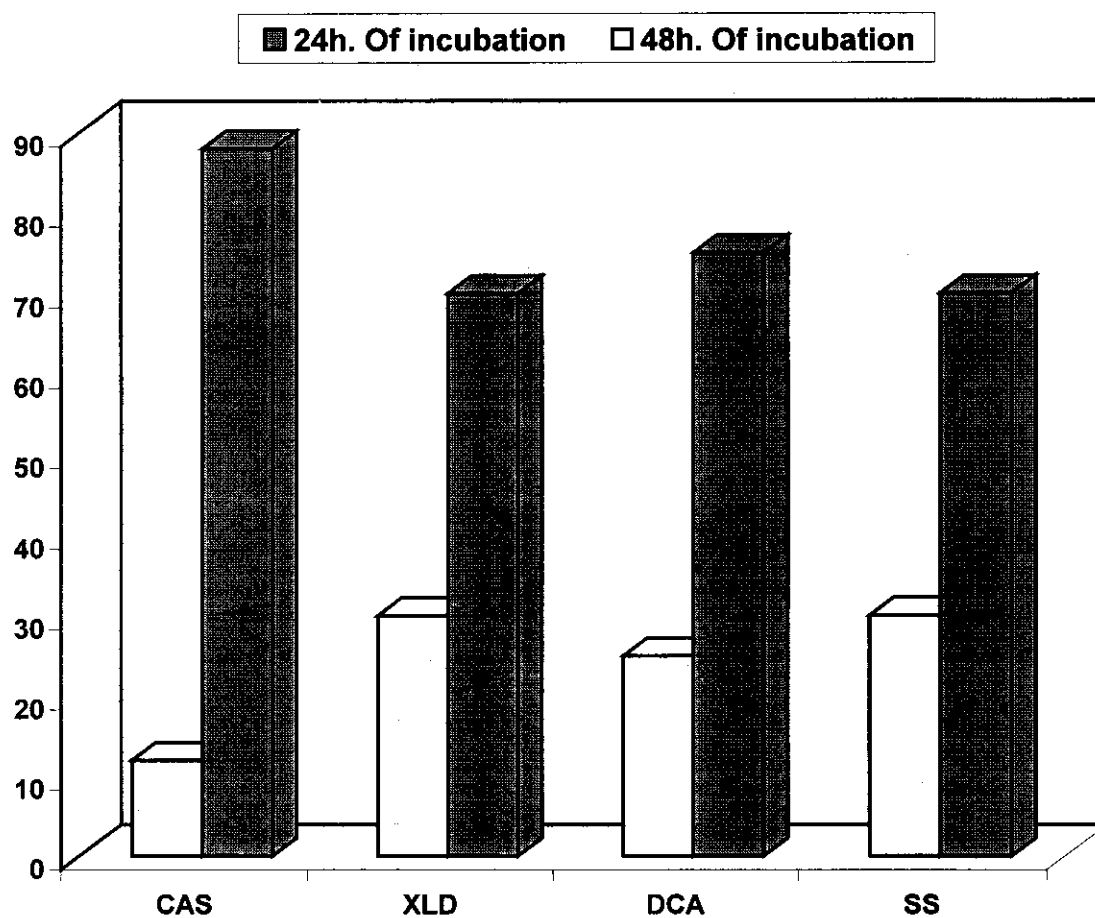


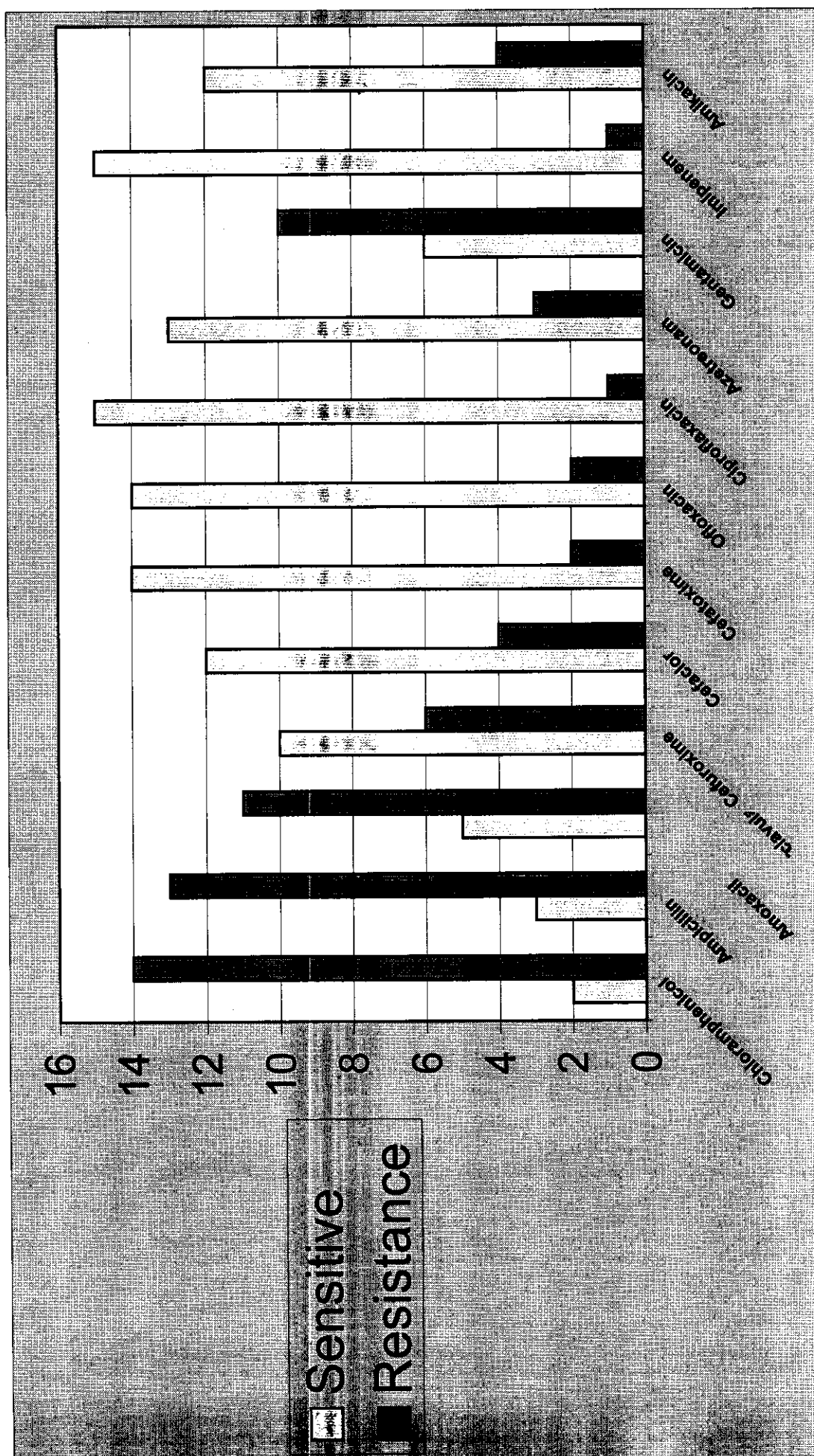
Figure (9)

***Fig(9): Comparison between Time needed for Isolation by Direct Plating on Different Mediae.***

**Table (7):Th antibiotic sensitivity pattern of the 16 isolated strains of *Salmonella* to tested antibiotics by disk diffution method**

Antibiotic	Sensitive	%	Resistance	%
Chloramphenicol	2	12.5	14	87.5
Ampicillin	3	19	13	81
Amoxacil-clavulanic	5	31	11	69
Cefuroxime	10	62	6	38
Cefaclor	12	75	4	25
Cefatoxime	14	87.5	2	12.5
Ofloxacin	14	87.5	2	12.5
Ciproflaxacin	15	93	1	7
Azetreonam	13	81	3	19
Gentamicin	6	38	10	62
Imipenem	15	93	1	7
Amikacin	12	75	4	25





**Fig (10)**  
*Fig(10): The antibiotic sensitivity pattern of the 16 isolated strains of Salmonella*