

قسم الميكروبيولوجيا  
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رئيس القسم : أ.د / ماهر مختار زكى

دراسات عن الميكروب القولونى فى الدجاج  
١ - أهم العترات المعزولة

عماد نافع ، مصطفى الرهيووي ، عوض عبد الحافظ \* ، سامية كامل \*\* صلاح موسى  
باهى الجمال \*\*

تم فحص ٥٢٣ عينة من كتاكيت بداري من مزارع فى محافظة أسيوط للافات  
التشريحية والعزل البكتريولوجى \*

تم عزل ٣٠٨ عترة من الميكروب القولونى وأمكن تصنيف ١١٨ عترة منها  
سيرولوجيا وقعت فى ٧ مجموعات ، أما الباقى ١٩٠ عترة فلم يمكن تصنيفها \*

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**STUDIES ON E.Coli IN POULTRY  
I- MOST PREVALENT SEROTYPES**  
(With One Table)

By

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**SUMMARY**

523 Slaughtered and freshly dead baby chicks collected from different poultry farms in Assiut Governorate were subjected to post-mortem and bacteriological examinations.

Morphologically and biochemically 308 isolates were suspected to be E.coli, out of it 118 were serologically identified as O78: K80 (B-) 36 isolates, O<sub>125</sub>: K<sub>70</sub> (B<sub>15</sub>) 29, O<sub>86</sub>: K<sub>61</sub> (B7) 21, O<sub>114</sub>: K (B-) 11, O<sub>124</sub>: K<sub>72</sub> (B<sub>17</sub>) 9, O<sub>126</sub>: K<sub>71</sub> (B<sub>16</sub>) 8 and O<sub>127</sub>: K<sub>63</sub> (B<sub>8</sub>) 6 isolates.

**INTRODUCTION**

Coli-septicaemia is one of the most common and deteriorating syndromes affecting chickens as a result of infections by E.coli especially young birds.

Gross (1958) revealed that chickens and turkeys artificially infected with E.coli developed a condition characterized by fibrinous pericarditis, Perihepatitis, airsacculitis, salpingitis and panophthalmitis.

SOJKA and CARNAGHAN (1961) reported that over 60% of E.coli strains isolated from cases of Colisepticaemia were belonged to the serological O groups O<sub>2</sub>, O<sub>78</sub> and O<sub>4</sub>.

CERNEA *et al.* (1968) investigated the losses from infectious diseases in two poultry farms and revealed that E.coli infection Cawed 8% and 17% out of these losses in the two farms respectively.

HASSANAIN (1983) reported that E.coli serogroups O<sub>1</sub>, O<sub>2</sub>, O<sub>26</sub>, O<sub>78</sub>, O<sub>86</sub> and O<sub>114</sub> were highly pathogenic to one-day-old chickens.

The present work is a field investigation to defect the most prevalent serotypes of E.coli among chickens Kept at the Governmental poultry farms in Assiut Province.

**MATERIAL AND METHODS**

**1) Media, stains and Reagents :**

The different media used in the present work were prepared and sterilized according to the technique of CRUICKSHANK *et al.* (1975) and following the instructions of the manufacturers.

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**2) Specimens :**

A total of 523 live and freshly dead baby chicks ranged between 5 to 45 days old were obtained from Governmental Poultry Farms in Assiut Province and subjected to post-mortem and bacteriological examinations.

**3) Antisera :**

Coli-Test Sera, Anti-O and Anti-OK (B,L) produced by Behringwerke, Ingelheim Marburg, W. Germany.

**Isolation and serotyping of *E.coli*.**

Heart blood and liver samples were inoculated into nutrient broth, incubated at 37°C for 24 hours. this was followed by subculture on MacConkey's and blood agar plates which were incubated at 37°C for 48 hours. Suspected colonies were subjected to further identification according to EDWARDS and EWING (1972) and CRUICKSHANK, *et al.* (1975).

**RESULTS**

The post-mortem examinations of the collected baby chicks revealed presence of septicemic picture in most of them. Moreover fibrinous pericarditis, perihepatitis and enlarged gall bladder together with thickened air-sacs containing yellow caseous materials and generalized visceral congestion were also observed.

The results of serotyping were illustrated in Table (1).

Sr.	Serogroups	Frequency
1	O <sub>78</sub> : K <sub>80</sub> (B <sub>-</sub> )	36
2	O <sub>125</sub> : K <sub>70</sub> (B <sub>15</sub> )	29
3	O <sub>86</sub> : K <sub>61</sub> (B <sub>7</sub> )	21
4	O <sub>114</sub> : K (B <sub>-</sub> )	11
5	O <sub>124</sub> : K <sub>72</sub> (B <sub>17</sub> )	9
6	O <sub>126</sub> : K <sub>71</sub> (B <sub>16</sub> )	6
7	O <sub>127</sub> : K <sub>83</sub> (B <sub>8</sub> )	6
8	Untypable isolates	190

**DISCUSSION**

Post-mortem lesions detected in examined cases were in the form of congestion of internal organs, diffuse petechial haemorrhages, fibrinous pericarditis perihepatitis and airsacculitis. these lesions were nearly identical to those previously described by Gross (1958) and Awad *et al.* (1973).

Bacteriological examination revealed the isolation of 808 *E.coli* isolates (58.8%), these isolates were biochemically identified according to the criteria given by CRUCKSHANK *et al.* (1975).

Serogrouping according to O and K antigens resulted in identification of 118 isolates, while the remaining 190 isolates were untypable. The most frequent strain was O<sub>78</sub>: K<sub>80</sub>

PREVALENT SEROTYPES OF E.coli

(B-) followed by O<sub>125</sub>: K<sub>70</sub> (B<sub>15</sub>), O<sub>86</sub>: K<sub>61</sub> (B<sub>7</sub>), O<sub>114</sub>: K- (B-), O<sub>124</sub>: K<sub>72</sub>, O<sub>126</sub>: K<sub>71</sub> (B<sub>16</sub>) and Lastly O<sub>127</sub>: K<sub>63</sub> (B<sub>8</sub>). O<sub>78</sub> was also found to be the most frequent strain isolated by HASSANAIN (1977), on the other hand SOJKA CARNAGHAM (1961) found that O<sub>86</sub> was the most predominant strain among fowls followed by O<sub>78</sub>. Both O<sub>86</sub>, and O<sub>78</sub> were identified by FARID et al. (1981) from cases of colisepticaemia in chickens.

Field investigation of the most prevalent serotypes of the organism will be of great importance for the further use of such serotypes in vaccine production to protect chickens against this problem.

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