

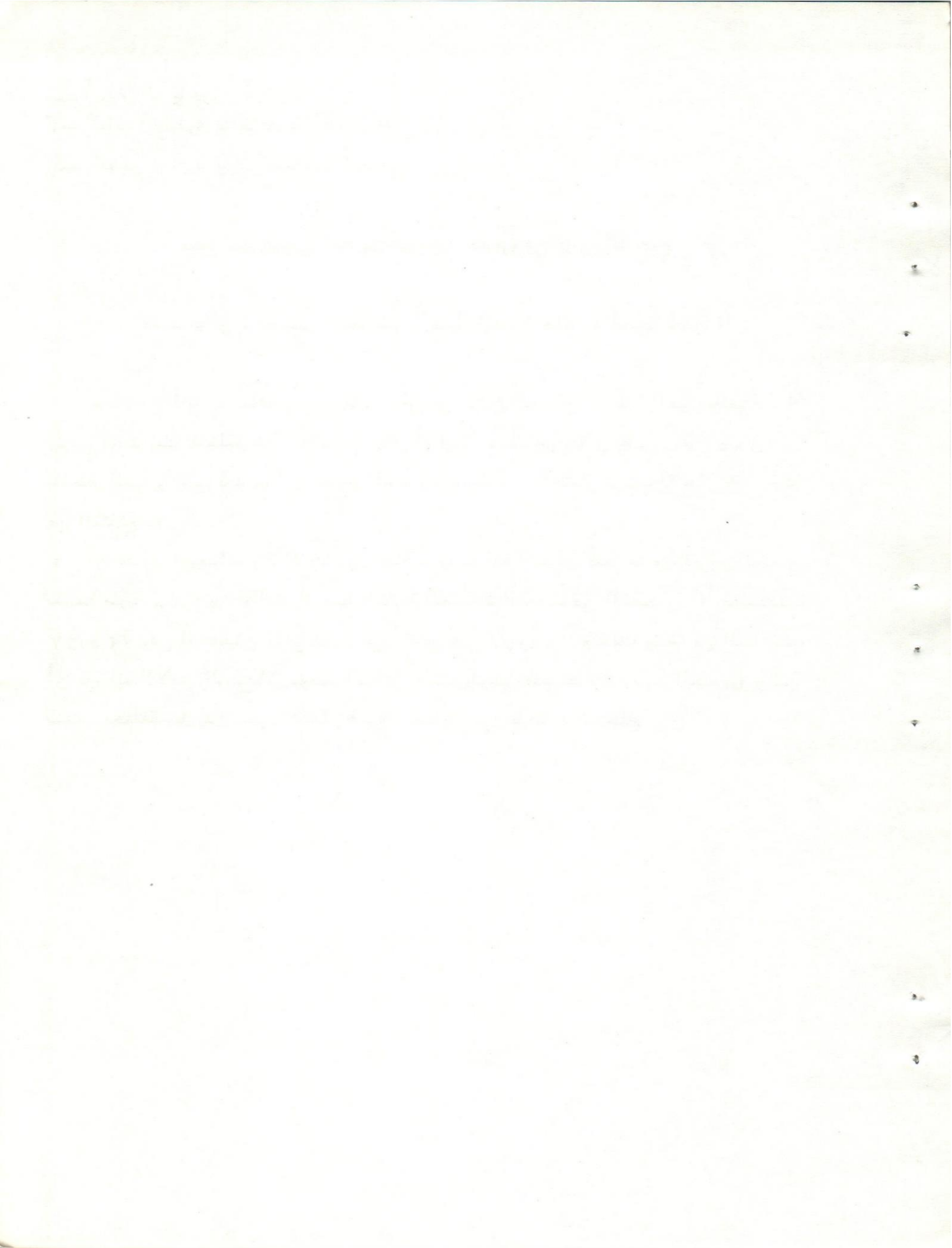
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### مسح سيروولوجى لعدوى فيروس الجيبورو فى مزارع الدجاج

محمد عامر ، مصطفى بسطامى ، ضياء الدين جاد ، أحمد حمودة

تم تجميع عدد ثمانمائة وست عينات سيرم من مزارع الدجاج مختلفة العمر والسلالة وتربى تحت نظم مختلفة سواء قطعان بياض أو أمهات تسمين خلال عامى ١٩٨٥/٨٤ ، للفحص السيروولوجى ضد عدوى فيروس الجيبورو باستخدام اختبار ترسب الأجار وقد وجد من النتائج :

أن عدوى اربعمائة وثلاثة وعشرون عينة سيرم موجبة التفاعل ضد عدوى فيروس الجيبورو بنسبة مئوية ٥٢٤٨٪ وكانت النسبة المئوية للعينات الموجبة فى القطعان الأرضية ٤٥٦٧٪ وفى القطعان التى تربى فى أقفاص هى ٥٨٤٥٪ وكذلك وضح من النتائج أن كل السلالات والقطعان موجبة التفاعل السيروولوجى ضد عدوى فيروس الجيبورو ولكن بنسب مختلفة مما يدل على انتشار هذه العدوى فى قطعان الدجاج .



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## SEROLOGICAL INCIDENCE OF GUMBORO DISEASE VIRUS INFECTION IN CHICKEN FLOCKS IN CAIRO DISTRICT

(With Two Tables)

By

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### SUMMARY

A total of eight hundred and six serum samples were collected from various flocks of different ages, breeds and raised under different systems, either laying flocks or broiler breeders, during the year of 1984 and 1985 for serological examination against Gumboro disease virus infection using agar gel-precipitation test.

Four hundred and twenty three of these sera were positive with percentage of 52.48. The percentage of reactors in birds reared on floor was 45.67, while those reared in cages was 58.45. All tested breeds and flocks were positive serologically against Gumboro disease virus, with varying percentage.

### INTRODUCTION

Gumboro disease was firstly described in Egypt by AYOUB and MALLICK (1976). BASTAMI (1980) made serological screening for Gumboro disease virus infection using agar gel-precipitation test, and reported that percentage of reactors was 22.5 among breeder flocks and 45 in broiler flocks. Moreover EL-ZANATY (1982) found that 31.59% of the examined serum samples from breeders showed precipitins to Gumboro disease. MOUSA, *et al.* (1983) used the qualitative agar gel-precipitation test for detection of Gumboro disease virus precipitating antibodies in the newly hatched Fayomi chicks. Agar gel-precipitation test had been used for the serological diagnosis of Gumboro disease virus infection in chicken flocks (KOSTERS and GEISLER, 1971; JAYARAMAIAH and MALLICK, 1976; MAIRE, *et al.* 1977; ULBRICH and ZURECK, 1977 and PHILLIPS, 1981). The last determination of Gumboro disease incidence in Egypt was during 1980 by BASTAMI, so it was essential to redetermine the recent serological situation of this disease during the year 1984-1985 in chicken flocks which may help in the disease control programming.

### MATERIAL and METHODS

#### 1) Serum samples:

806 serum samples; each of two samples pooled; were collected from 35 laying chicken flocks and broiler breeder flocks of different breeds, ages and rearing systems in Cairo district. These flocks were vaccinated with living attenuated Gumboro vaccine via drinking water at 8-12 day old only. Flocks 1 (table 1) and 1 & 2 (table 2) were nonvaccinated.

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**2) Virus strain and Antisera:**

Gumboro disease virus laboratory strain and precipitating serum were obtained from "Klinik für Geflügel der Tierärztlichen Hochschule, Hannover, W. Germany".

**3) Chickens:**

SPF- chickens obtained from Lohmann, Cuxhaven were used for antigen preparation.

**4) Preparation of precipitating antigen:**

The antigen prepared after ULBRICH and ZURECH (1977). Bursa Fabricius of three week-old chickens, were collected after 72 hours post-infection, then thoroughly homogenized and used after showing specific reaction with Gumboro disease virus antisera only.

**5) Agar gel-precipitation test:**

The test was adopted as described by WORNELE (1959).

## RESULTS

The obtained results in table 1 & 2 marked that:

- 1) Gumboro disease virus precipitins were detected in all the examined flocks and breeds.
- 2) Four hundred and twenty three serum samples out of the total examined 806 samples showed positive results with percentage of 52.48.
- 3) Percentage of reactors among birds reared on floor was 45.67, and of birds reared in cages was 58.45.

## DISCUSSION

The prevalence of infection with Gumboro disease virus among chicken flocks were studied serologically using agar gel-precipitation test. Precipitating antibodies against vaccination to the Gumboro disease, usually disappeared at early ages; WINTERFIELD and THACKER (1978) did not detect precipitins in sera of chickens possessing maternal antibodies 25 days post-vaccination via drinking water at 8 days old. So detection of these precipitating antibodies in old ages indicated recent infection (WAGNER and KOSTERS, 1968; IDE, 1975 and MACKENZIE and SPARDI-BROW, 1981). The obtained results showed that the percentage of reactors was 52.48 in tested serum samples totally, but reactors in birds reared on cage were higher (58.45) than those of birds reared in floor (45.67), while BASTAMI (1980) reported that incidence of Gumboro disease virus infection was 22.5 among breeder chicken flocks, and EL-ZANATY (1982) detected 31.59% positive sera from breeder chickens. These findings declared that the incidence of Gumboro disease virus infection raised from 22.5% to 31.59% and finally to 52.48% during about 5 years, and this can be attributed to the more intensification of the poultry industry. The higher positive reactors against Gumboro disease virus, was also reported by KOSTERS and GLISSLER, 1971; HIRAI, *et al.* 1973; JAYARAMAICH and MALLICK, 1975; ULBRICH and ZURECK, 1977 and MAZIJA, *et al.* 1981.

It can be concluded that, Gumboro disease virus infection is still prevalent among chicken flocks in Egypt, and so it must be considered as one of the problems facing poultry industry in Egypt.

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Table (1)  
Incidence of Gumboro disease virus pricipitins in cage reared chicken flocks

Flock No.	Age/week	Breed	No. of samples	No. of +ve	% of +ve
1	7@	Tetra	30	24	80.00
2	11	Shaver	30	12	40.00
3	12	Shaver	10	4	40.00
4	12	Shaver	14	9	64.00
5	13	Tetra	30	26	86.67
6	14	Shaver	30	21	70.00
7	17	Hisex	11	7	63.63
8	23	Hubbard	24	19	79.16
9	28	Tetra	30	17	56.67
10	34	Rhod island	24	15	62.50
11	35	Shaver	10	6	60.00
12	36	Shaver	30	19	63.33
13	43	Shaver	10	2	20.00
14	43	Hisex	14	9	64.28
15	46	Hypro	12	8	66.67
16	54	Hisex	31	16	51.61
17	56	Hisex	26	10	38.46
18	61	Tetra	30	17	56.67
19	69	Tetra	30	8	26.67
<b>Total</b>			<b>426</b>	<b>249</b>	<b>58.45</b>

@ : Novaccinated flock.

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Table (2)  
Incidence of Gumboro disease virus precipitins in floor reared chicken flocks

Flock No.	Age/week	Breed	No. of samples	No. of +ve	% of +ve
1@	6	Hubberd	10	7	70.00
2@	8	Hypro	23	13	56.52
3	14	Hubberd	13	5	38.46
4	15	LSL	11	6	54.54
5	18	Hypro	31	20	64.51
6	23	Isa brawn	25	17	68.00
7	30	Hubberd	21	9	42.85
8	30	Hubberd	32	4	12.50
9	32	LSL	27	16	59.25
10	36	Hypro	7	4	60.00
11	41	Hisex	28	14	50.00
12	46	Shaver	49	9	18.30
13	48	LSL	40	19	47.50
14	52	Hisex	14	6	42.85
15	56	Hypro	26	10	38.46
16	58	Shaver	24	15	62.50
<b>Total</b>			<b>381</b>	<b>174</b>	<b>45.67</b>

@ : Nonvaccinated flock.

