سامية محمد مصطفى



شبكة المعلومات الحامعية

بسم الله الرحمن الرحيم



-Caro-

سامية محمد مصطفي



شبكة العلومات الحامعية



شبكة المعلومات الجامعية التوثيق الالكتروني والميكروفيلم





سامية محمد مصطفى

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسو

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات



يجب أن

تحفظ هذه الأقراص المدمجة يعيدا عن الغيار



سامية محمد مصطفي



شبكة المعلومات الجامعية



المسلمة عين شعور المسلمة عين شعور المسلمة عين شعور المسلمة عين شعور المسلمة ا

سامية محمد مصطفى

شبكة المعلومات الحامعية



بالرسالة صفحات لم ترد بالأصل



STUDIES ON INFECTIOUS BURSAL DISEASE IN COMMERCIAL BROILERS

THESIS

Presented by

MOHAMED MAHMOUD FATH ALLA GHANEM

B. V. Sc. 1979

Cairo University

TO
UNIVERSITY OF ALEXANDRIA
Faculty of Veterinary Medicine
Department of Avian and Aquatic Animal Medicine

For the Degree of

M. V. Sc. (Poultry Diseases & Hygiene)

BIFTEN

1994

Under the Supervision of

Dr. I. M. Abou - El-Azm

Emeritus Professor of Poultry Diseases,
Dept. of Avian and Aquatic
Animal Midicine,
Faculty of Vet. Medicine,
Alexandria University

Dr. A.B.A. Bekhit

Assistant Professor of Poultry Diseases,
Dept. of Avian and Aquatic
Animal Midicine,
Faculty of Vet. Medicine,
Alexandria University

قرار لجنة الحكم والمناقشة

قامت لجنة الحكم والمناقشة بفحص هذة الرسالة ووجدت ان لها قيمة علمية حيث اشتملت على بحوث هادفة ومواضيع لها اهميتها في مجال صحة وامراض الدواجن كما قامت اللجنة بمناقشة المتقدم مناقشة مستفيضة ووجدت انه ملم الماما تاما بكل ماجاء بها.

لذلك

قررت اللحنة ترشيح ط · ب/ محمد فتح الله غانم للحصول على درجة الماحستير في العلوم الطبية البيطرية – صحة وامراض الدواجن ·

(١) السيد الاستاذ الدكتور/ احمد على سامـــــى احمـد

استاذ صحة وامراض الدواجن المتفرغ - كلية الطب البيطري

جامعة الاسكندرية

(٢) السيد الاستاذ الدكتور/ محمد عباس السيسسسسي

استاذ صحة وامراض الدواجن - ورئيس قسم الدواجن والاسماك

كلية الطب البيط رى

حامعة الزقاريسق

(٤) السيد الدكتـــور/ احمد بخيت علــــــي (مشـرفا)

استاذ مساعد صحة وامراض الدواجن – كلية الطب البيطــــــرى

جامعة الاسكندريـــة

ACKNOWLEDGEMENT

Acknowledgement

I gratefully acknowlege **Dr. I. M. Abou-El-Azm**, Emeritus Professor of Poultry Diseases, Department of Avian and Aquatic Animal Med., Faculty of Vet. Med., Alexandria Univ., for suggesting and supervising this work.

I am delighted to express may deep appreciations and sincere thanks to Dr. A. A. Sami Ahmed, Professor of Poultry Diseases, Department of Avian and Aquatic Animal Med., Faculty of Vet. Med., Alexandria Univ., for his continuous help during this work.

My deepest thanks are expressed to Dr. H. S. Abd - El-Hamid, Professor of Poultry Diseases in the same department for his help.

Great thanks to **Dr. M. M. Hasseib**, Professor of Pathol., Faculty of Vet. Med., Alexandria Univ. for his valuable help in the histopathological work found in this thesis.

Great thanks and appreciation to Dr. A. B. A. Bekhit, Assistant Professor of Poultry Diseases, Department of Avian and Aquatic Animal Med., Faculty of Vet. Med., Alexandria Univ., for his supervision, guidance and valuable criticism.

Thanks to Dr. A. G. R. Shakshouk, Assistant Professor of Poultry Diseases and Dr. K. I. Mahmoud Lecturer of Poultry Diseases, in the same department for their help.

Thanks also to all colleagues and technitian in the Dept. of Avian and Aquatic Animal Med.

Contents

	Page
I - INTRODUCTION	1
II - REVIEW OF LITERATURE	3
II . 1 . History and distribution	3
II. 2. IBDV serotypes	3
II. 3. Physicochemical and biological properties	5
II. 4. Spread and transmission of infection	6
II. 5. Incubation period and clinical symptoms	7
П. 6. Mortality rates	9
II. 7. Age susceptibility	12
II. 8. Post - mortem lesions	13
П. 9. Histopathological changes	17
II. 10. Immunosuppression	19
II. 11. Relationship between vaccination, maternal	
antibody and immunosuppression of IBD	
vaccines	21
II. 12. Methods of virus and antibody detection	27
III. MATERIALS AND METHODS	32
III. A. MATERIALS	32
III. A. 1. Field survey	32
III. A. 2. Specimens	32
III. A. 3. Embryonated chicken eggs	32

III. A. 4. Experimental IBDV field isolates	32
III. A. 5. Experimental chicks	33
III. A. 6. Reference IBDV antiserum	33
III. A. 7. Reference IBDV antigen	33
III. B. METHODS	34
III. B. 1. Antigen detection and virus isolation	34
III. B. 2. Egg inoculations	34
III. B. 3. Agar gel precipitation test	35
III. B. 4. Preperation of chicken embryo - fibroblasts	35
III. B. 5. Determination of 50% lethal dose (ELD ₅₀) of	
IBDV field isolates ·····	36
III. B. 6. Virus neutralization (SN) tests	37
III. B. 7. Determination of feed consumption, body	
weight gain and feed conversion	37
III. B. 8. Detection of IBDV antibodies of experimentally	
infected chickens	38
III. B. 9. Detection of IBDV antigen in experimentally	
infected chickens	38
III. B. 10. Bursa / body weight ratios	38
III. B. 11. Histopathological examination	39
III. C. Experimental design	39
IV. RESULTS	41
IV. 1. History, signs and results of IBD - antigen	
detection by the agar gel precipitation test	4 1

IV. 2. Pathogenicity of chosen IBDV isolates to	
embryonated chicken eggs	49
IV. 3. Detection of embryo - lethal dose 50 of the chosen	
IBDV isolates	51
IV. 4. Determination of the relative pathogenicity of	
chosen IBDV isolates to 3 - week - old	
commercial broiler chickens	52
IV. 5. Bursa / body weight ratio	58
IV. 6. Detection of IBD antigen in the bursa of	
experimental infected chickens	58
IV. 7. Detection of IBDV antibodies in serum of	
experimentally infected chickens	58
IV. 8. Body weight, feed consumption (g) and feed	
conversion of experimentally infected chickens	61
IV. 10. The histopathological changes of infected birds	65
V. DISCUSSION	76
VI. ENGLISH SUMMARY	84
VII. REFERENCES	86
VIII ARARIC SIIMMARY	

INTRODUCTION

I. INTRODUCTION

Infectious bursal disease (IBD) is a cosmopolitan, highly contagious disease of young chickens responsible for great economic losses. Since its first description by Cosgrove (1962) in the area of Gumboro, Delaware, U.S.A., and the recognition of its etiology and pathognomic characteristics, the disease was reported in different parts of the world as Italy (Rinaldi et al., 1965), Germany (Peters, 1966 and 1967), Schwitzerland (Riggenbach, 1967), India (Mohanty et al., 1971), Japan (Shimizu et al., 1977), Sudan (Salman et al., 1983), Finland (Neuvonen et al., 1988) and Belgium (Van Den Berg et al., 1991).

In Egypt, pathological lesions of IBD were reported for the first time by El-Sergany et al. (1974). Isolation of the virus was reported by Ayoub and Mallick (1976), Bastami (1980), Hegazy (1983), El-Batrawi (1990), El-Azzawi (1991), El-Manakhly and Bekheit (1992), and Amer et al. (1994).

In many instances, the disease was incriminated to cause 0.2% - 68.61% mortalities in natural IBDV outbreaks (Meroz, 1966; Landgraf et al., 1967; Del Beno et al., 1969; Bygrave and Faragher, 1970; Onunkwo, 1975; Abdu, 1986; El-Batrawi, 1990; El-Azzawi, 1991, Amer et al., 1994). Experimentally the disease was reported to cause 1% up to 100% mortalities (Fadly and Nazerian, 1983; Tscholakowa et al., 1986; Van Den Berge et al., 1991; Van Den Berg and Meulemans, 1991; El-Manakhly and Bekhit, 1992; Amer et al., 1994).

The causing viruses are nowadays classified under the family Birnaviridae on the basis of their double stranded, double segmented RNA genome (Dobos et al., 1979).