****

**EFFECTS OF GARLIC (*Allium sativum*) EXTRACTS AT DIFFERENT CONCENTRATIONS AGAINST ASPERGILLOSIS IN BROILER**

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Roll No. 0214/01

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Session: 2014-2015

**A thesis submitted in the partial fulfillment of the requirements for the degree of Master of Science in Pharmacology**

**Department of Physiology, Biochemistry and Pharmacology**

**Faculty of Veterinary Medicine**

**Chittagong Veterinary and Animal Sciences University**

**Chittagong-4225, Bangladesh**

**June, 2016**

**DEDICATION**

“To my

Forever grateful

Beloved parents and husband”

# 

# Page i

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**June, 2016**

Page ii

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Page iii

# Contents

[Authorization ii](#_Toc413583833)

[Acknowledgements iii](#_Toc413583834)

[Contents iv](#_Toc413583835)-vi

[List of Tables vii](#_Toc413583836)

[List of Figures viii](#_Toc413583837)

[Acronym Used xi](#_Toc413583838)

[Summary x](#_Toc413583839)

[Chapter-1: Introduction](#_Toc413583840)  1

[1.1 Specific objectives:](#_Toc413583841) 3

[Chapter-2: Review of Literature.....................................................................4](#_Toc413583842)

[2.1 Aspergillosis 4](#_Toc413583843)

2.1.1 Eitiology ……………………………………………………………4

2.1.2 Species affected……………………………………………………..5

[2.1.3 Epidemiology 5](#_Toc413583844)

2.1.4 Pathogenesis………………………………………………………...5

[2.1.5 Clinical signs 6](#_Toc413583845)

[2.1.6 Diagnosis 7](#_Toc413583846)

2.1.7 Treatment……………………………………………………………8

[2.1.8 Prevention and control ……………………………………………..11](#_Toc413583847)

[2.2 Medicinal plants of Bangladesh ……………………………………...11](#_Toc413583848)

[2.3 Garlic …………………………………………………………………...12](#_Toc413583849)

[2.3.1 Antifungal activity of garlic ………………………………………..12](#_Toc413583851)

[2.3.2 Effect of garlic on chicken’s growth performance..……………….13](#_Toc413583852)

2.3.3 Effects on Haematological and biochemical parameters……..……14

[Chapter-3: Materials and Methods .16](#_Toc413583872)

[3.1 Study area and study period 16](#_Toc413583873)

[3.2 Study design 16](#_Toc413583874)

[3.3 Medicinal plants used 17](#_Toc413583875)

[3.4 Aqueous Garlic Extract (AGE) Preparation 17](#_Toc413583876)

Page iv

[3.5 Preparation of *Aspergillus sp.* 17](#_Toc413583880)

[3.6 Antifungal activity test 18](#_Toc413583881)

[3.6.1 In vitro assays 18](#_Toc413583882)

[3.6.2 In vivo assays 18](#_Toc413583883)

[3.6.2.1 Selection of study population 18](#_Toc413583884)

[3.6.2.2 Management of brooding chicks 18](#_Toc413583885)

[3.6.2.3 Management of grower chicken in cages 19](#_Toc413583886)

[3.6.2.4 Infection with *Aspergillus* spp. 19](#_Toc413583887)

[3.6.2.5 Diagnosis 20](#_Toc413583888)

[3.6.2.6 Treatment intervention 21](#_Toc413583889)

[3.6.2.7 Treatment and post monitoring 21](#_Toc413583890)

3.6.2.8 Collection of blood and preservation……………………………21

[3.7 Evaluation of hematological parameters 22](#_Toc413583892)

[3.8 Separation of serum 22](#_Toc413583898)

[3.9 Evaluation of Biological parameters 22](#_Toc413583899)

[3.10 Effect of garlic on body weight and FCR 22](#_Toc413583900)

3.10.1Body weight gain………………………..……………...……….22

3.10.2Feed Conversion Ratio………………………………………... ..23

[3.10 Statistical analysis 23](#_Toc413583910)

[Chapter-4: Results 24](#_Toc413583911)

4.1 In vitro assays………………………………………………………….24

4.2 In vivo assays………………………………………………………….25

[4.3 Effect of garlic extracts on growth performances…………………….26](#_Toc413583912)

[4.3.1 Live weight 26](#_Toc413583913)

[4.3.2 Total feed intake 27](#_Toc413583914)

[4.3.3 FCR on live weight 28](#_Toc413583915)

[4.4 Effect of garlic extracts on selected Hematological parameters 30](#_Toc413583919)

[4.4.1 Hemoglobin (Hb) concentration 30](#_Toc413583922)

[4.4.2 Erythrocyte Sedimentation Rate (ESR) 30](#_Toc413583920)

[4.4.3 Packed Cell Volume (PCV) 30](#_Toc413583921)

Page v

[4.4.4 Total Erythrocyte Count (TEC) 30](#_Toc413583922)

[4.4.5 Differentials Leukocytes Count (DLC) 30](#_Toc413583923)

[4.5 Effect of garlic extractS on selected Biochemical parameters 32](#_Toc413583924)

[4.5.1 Glucose 32](#_Toc413583925)

[4.5.2 Total protein 32](#_Toc413583926)

[4.5.3 Albumin 32](#_Toc413583927)

[4.5.4 Aspartate Aminotransferase and Alanine Aminotransferase …….32](#_Toc413583928)

4.5.5 Creatinine………………………………………………………….32

4.5.6 Cholesterol and Triglyceride level……………………………...…32

[Chapter-5: Discussion 34](#_Toc413583942)

[Chapter-6: Limitations 38](#_Toc413583947)

[Chapter-7: Conclusion 39](#_Toc413583947)

[Chapter-8: Recommendations and Future Perspective 40](#_Toc413583948)

[References 41](#_Toc413583949)

[Appendix-A 55](#_Toc413583950)

[Appendix-B 56](#_Toc413583951)

[Appendix-C 5](#_Toc413583952)7

[Appendix-D 58](#_Toc413583953)

Appendix-E …………………………………………………………………60

**Brief Biography**

Page vi

# List of Tables

[**Table 1:** Administration routes and doses of antifungals against avian aspergillosis 8](#_Toc413585083)

[**Table 2:** Vaccination schedule in chicks 19](#_Toc413585084)

[**Table 3:** Sensitivity of *A fumigatus* to different concentrations of AGE 24](#_Toc413585085)

[**Table 4:** Post mortem findings on 28th days 25](#_Toc413585086)

[**Table 5:** Effect of garlic extracts on growth performances in broiler 29](#_Toc413585087)

[**Table 6:** Effect of garlic extracts on selective hematological parameters 31](#_Toc413585088)

[**Table 7:** Effect of garlic extracts on selective biochemical parameters 33](#_Toc413585089)

[**Table 8:** Composition of the experimental broiler grower diet 57](#_Toc413585090)

Page vii

# List of Figures

[**Figure 1:** Primary causes of aspergillosis in birds 4](file:///G:\Thesis\Thesis%20for%20evaluation\Thesis%20(Ashif)%20Final.docx#_Toc413584202)

[**Figure 2:** Generation of allicin in a garlic clove](#_Toc413584203) 12

[**Figure 3:** Flow chart of study design 16](#_Toc413584204)

[**Figure 4:** Mother culture of *Aspergillus sp.* on SDA 17](#_Toc413584205)

[**Figure 5:** Challenged the birds through *Aspergillus spp*](#_Toc413584206) 19

[**Figure 6:** Infected birds with suffocation, dyspnoea and dizziness 20](file:///G:\Thesis\Thesis%20for%20evaluation\Thesis%20(Ashif)%20Final.docx#_Toc413584207)

[**Figure 7:** Yellowish nodules and congested heart and lung 20](file:///G:\Thesis\Thesis%20for%20evaluation\Thesis%20(Ashif)%20Final.docx#_Toc413584208)

[**Figure 8:** Treatment of Aspergillosis infected chicks with various concentrations of garlic extract………………………………………………………………………...21](#_Toc413584209)

[**Figure 9:** Zone of inhibition of *Allium sativum* (garlic) against *Aspergillus* spp.24](file:///G:\Thesis\Thesis%20for%20evaluation\Thesis%20(Ashif)%20Final.docx#_Toc413584210)

[**Figure 10:** Live weight variation among control and different treated groups 26](#_Toc413584219)

[**Figure 11:** Feed intake variation among control and different treated groups 27](#_Toc413584220)

[**Figure 12:** FCR on live weight among control and different treated groups 28](#_Toc413584221)

**Figure 13:** Preparation of aqueous garlic extracts

(A. Peeled off garlic, B. Weighing of garlic, C. Blending, D. Homogenization,

E. Final extract, F. Disc preparation.)……………………………………….55

**[Figure 14:](#_Toc413584227)** [In vitro antifungal test](#_Toc413584227)

[(A. Sabouraud Dextrose Agar powder mixed with water, B. Heating, C. Autoclaving of agar, D. Agar poured into Petri plate, E.](#_Toc413584227) *[A fumigates](#_Toc413584227)* [inoculums spread on agar surface, F. Disc placed on culture medium, G. Prepared plate, H. Plate placed in incubator).56](#_Toc413584227)

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Page viii

# Acronym Used

|  |  |
| --- | --- |
| AGE | Aqueous Garlic Extract |
| ANOVA | Analysis of Variance |
| % | Percentage |
| ESR | Erythrocyte Sedimentation Rate |
| PCV | Packed Cell Volume |
| Hb | Hemoglobin |
| TEC | Total Erythrocyte Count |
| DLC | Differential Leucocytes Count |
| TG | Triglycerides |
| ALT/ SGPT | Alanine Amino-Transferase |
| AST/ SGOT | Aspartate Amino-Transferase |
| TP | Total Protein |
| Alb | Albumin |
| SDA | Saboured Dextrose Agar |
| TLC | Thin Layer Chromatography |
| FCR | Feed Conversion Ratio |
| BCRDV | Baby Chick Ranikhet Disease Vaccine |

Page xi

**Effects of garlic (*Allium sativum*) extracts at different concentrations against Aspergillosis in Broiler**

# Summary

An experimental study was conducted on broiler chicken for evaluation of efficacy of garlic (*Allium sativum*) extracts at different concentrations against aspergillosis for a period of 6 months from July to December, 2015. This efficacy was determined on the basis of growth performance, hematological and biochemical alterations in broiler. A total of 80 day old chicks were purchased from commercial breeder farm, brooding for 13 days while two chicks were died. *Aspergillus sp.* was challenged through water to all subgroups at Day-12. Then total of 78 birds were divided into eight sub-groups, Groups-1consists of 15 chicks which is treated as control group (T0) and remaining seven groups with 9 birds/group were considered as treatment groups (T1 to T7) respectively. Blood samples were collected from jugular vein of chicken at day 28 from three randomly selected birds of each subgroup and subsequent hematology and biochemical analysis were performed. Feed intake data with live weight was recorded in every seven days interval to assess growth performances. Garlic treated groups showed better antifungal efficacy with the highest live weight and improved feed conversion compared to control. Among different garlic treated groups better growth performance and feed conversion ratio were marked in 70% garlic (T4 group) treated group. Both in-vitro and in-vivo antifungal activity of different aqueous garlic extracts against *Aspergillus* spp. was evident in this study. Almost no significant hematological alteration was present in garlic treated groups but significantly increased packed cell volume (%) was noted in 60% garlic (T5 group) group where as significantly reduced haemoglobin (%) and heterophil level was found in all treated groups. The level of Glucose, Aspartate Amino-Transferase, Alanine Amino-Transferase, Cholesterol and Triglycerides was increased but the concentration of Total Protein (TP) was decreased after infection. After treatment, Glucose, Cholesterol and Triglyceride were decreased significantly (*p* ≤0.05) and TP was increased significantly in 80% garlic (T3 group) and 70% garlic (T4 group) treated groups. The both Aspartate Amino-Transferase and Alanine Amino-Transferase were significantly (*p* ≤0.05) varied in all garlic treated groups. It is concluded that, 70% garlic extract was the best effective against aspergillosis in broiler with an improved growth performance among all other concentrations of garlic extract.

**Key Words:** Aspergillosis, Broiler, Garlic Extract, Concentrations, Hematology, Serum biochemistry, Growth performances.

Page x