****

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

**Chowdhury Sultana Sabrina**

Roll No. 0214/01

Registration No. 203

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”

#

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**June, 2016**

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| **------------------------------------------------------** | **----------------------------------------------------------** |
| **(Prof Dr. A. K. M Saifuddin)****Supervisor****Department of Physiology, Biochemistry and Pharmacology** | **(DR. Mohammed Ashif Imtiaz Shawn)****Co-supervisor****Department of Physiology, Biochemistry and Pharmacology** |

**This is to certify that we have examined the above Master’s thesis and have found that is complete and satisfactory in all respects, and that all revisions required by the thesis examination committee have been made**

**-----------------------------------------------**

**(DR. S.K.M Azizul Islam)**

**Chairman of the Examination Committee**

**Dept. of Physiology, Biochemistry and Pharmacology**

**Faculty of Veterinary Medicine**

**Chittagong Veterinary and Animal Sciences University**

**Chittagong-4225, Bangladesh**

**June, 2016**

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# 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 |

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**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.

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