

Development of Feed Additives Using *Spondias* Leaves and its Effects on Growth Performance and Meat Quality in Broiler



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Semester: January - June 2018

A thesis submitted in partial of the requirements for the fulfillment of the degree of
Master of Science in Animal and Poultry Nutrition

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June 2018

AUTHORIZATION

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The Author
June 2018

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

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ACKNOWLEDGEMENTS

I am indebted to Almighty Who enabled me to complete the research work and write up the dissertation successfully for the degree of Master of Science (MS) in Animal and Poultry Nutrition under the Department of Animal Science and Nutrition, Chittagong Veterinary and Animal Sciences University.

I am grateful to my supervisor **Professor Dr. Md Manirul Islam**, Head, Department of Animal Science and Nutrition, CVASU for his valuable supervision and guidance. It was really a great pleasure and amazing experience for me to work under his supervision. I really deemed it and I realized it was a rare opportunity for me to work under his creative guidance. I understand it was impossible to complete the dissertation without his constructive supervision.

It's my pleasure to convey my profound gratitude to our **Vice-Chancellor Dr. Goutam Buddha Das**, Professor, Department of Animal Science and Nutrition, Chittagong Veterinary and Animal Sciences University (CVASU) for his valuable advice, scholastic guidance, suggestions and inspiration.

It is my privilege to acknowledge **Professor Md. Emran Hossain** and Assistant Professor **DR. Mahabub Alam**, Department of Animal Science and Nutrition for their support, valuable advice and encouragement for the research work.

I sincerely thank to all the members of the department of Physiology, Biochemistry and Pharmacology, Animal Science and Nutrition for their help in using their laboratory. Also thanks to **DR. Inkeyas Uddin**, Scientific Officer, Poultry Research and Training Center (PRTC)

I would like to thank **DR. Shuvo Shingha**, Ms fellow of Epidemiology, Department of Medicine and Surgery, CVASU for his great support and valuable time during the experimental period.

Especially I would like to thank **DR. Kona Adikhary**, Ms fellow of department of Animal Science and **Md. Showkat Ullah** for their support during the whole experimental period. Last but not least, I express my deepest sense of gratitude to my beloved family members and my friends for their sacrifice, blessings and encouragement.

The Author

June 2018

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LIST OF ABBREVIATIONS

Abbreviation	Elaboration
ANOVA	Analysis of variance
BMD	Bangladesh Meteorological Department
CP	Crude protein
DOC	Day Old Chick
DDGS	Distiller's dried grains with soluble
DFRB	De-fatted rice barn
gm	Gram
LW	Live weight
HDL	High density lipoprotein
LDL	Low density lipoprotein
ME	Metabolizable energy
FCR	Feed conversion ratio
SEM	Standard error of mean
NS	Non significant
<	Less than
>	Greater than
e.g	Example
et al	And his associates
%	Percentage
i.e.	That is
Sig.	Significance
Ref.	Reference
MS	Master of Science

ABSTRACT

The study was conducted to investigate the effects of different levels of *Spondias* tree leaves with or without fermentation using beneficial bacteria on growth performance, carcass characteristics, meat quality and blood parameters in broiler. A total of 120 day old Ross 308 unsexed broiler chicks were randomly distributed into five dietary treatment groups: T₀ = Control (basal diet), T₁: dry leaves (basal diet + 0.5% on DM basis), T₂: dry leaves (basal diet + 1.0% on DM basis), T₃: fermented leaves (basal diet + 0.5% on DM basis) and T₄: fermented leaves (basal diet + 1.0% on DM basis). Each treatment group consist 3 replications having 8 birds in a completely randomized design for 28 days trial period. Results indicated that, weekly average weight gain increased significantly ($p < 0.05$) at 3rd and 4th week of age of broiler in all treatment groups while increased in T₄ group at 4th week of age as compared to control. A reduced feed intake of broiler was observed in T₄ group at 3rd week ($p < 0.05$). FCR was reduced in all treatment groups at 2nd, 3rd and 4 weeks than the control ($p < 0.05$). A significant increased in blood HDL level while decreased LDL and total cholesterol in all treatments compared to control ($p < 0.05$). Considering meat quality, crude protein (CP), ether extract (EE) and ashes were increased significantly in all treatment groups compared to control ($p < 0.05$). The highest mean of live weight, breast meat percentage increased respectively in T₂ group while spleen weight is higher in T₂ and T₁ among group of birds. In conclusion, dietary supplementation of *Spondias* tree leaves with or without fermentation increased weekly weight gain, better FCR, increased CP, EE, total ashes and blood HDL level. On the other hand, it reduced blood LDL and total cholesterol level. Therefore, *Spondias* tree leaves can be used as effective feed additives in broiler diet.

Keywords: Broiler, *Spondias* tree leaves, probiotics, growth performannce, carcass characteristics.