



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكرو فيلم

بسم الله الرحمن الرحيم



HANAA ALY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم



شبكة المعلومات الجامعية التوثيق الإلكتروني والميكروفيلم



HANAA ALY



شبكة المعلومات الجامعية
التوثيق الإلكتروني والميكروفيلم

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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



يجب أن

تحفظ هذه الأقراص المدمجة بعيدا عن الغبار



HANAA ALY

**EFFECT OF SOME AMINO ACIDS SUPPLEMENTATION
IN DIET ON PRODUCTIVE PERFORMANCE
OF BROILER CHICKS UNDER EGYPTIAN
SUMMER CONDITIONS**

By

AMR ADEL SHEHATA HELAL

B.Sc. Agric. Co. Sc., High Institute for Agricultural Co-operation Shoubra Elkhayma, 1997

**A Thesis Submitted in Partial Fulfillment
Of
The Requirements for the Degree of**

**MASTER OF SCIENCE
in
Agricultural Sciences
(Poultry Nutrition)**

**Department of Poultry Production
Faculty of Agriculture
Ain Shams University**

2021

EFFECT OF SOME AMINO ACIDS SUPPLEMENTATION IN DIET ON PRODUCTIVE PERFORMANCE OF BROILER CHICKS UNDER EGYPTIAN SUMMER CONDITIONS

By

AMR ADEL SHEHATA HELAL

B.Sc. Agric. Co. Sc., High Institute for Agricultural Co-operation Shoubra Elkhayma, 1997

Under the supervision of:

Dr. Fathy Abd El-Azeem Mohamed

Prof. of Poultry Nutrition, Department of Poultry Production, Faculty of Agriculture, Ain Shams University (Principal supervisor)

Dr. Hany Aly Thabet Motawea

Associate Prof. of Poultry Nutrition, Department of Poultry Production, Faculty of Agriculture, Ain Shams University

Dr. Mohamed Mostafa El-Sayed (Late)

Associate Prof. of Poultry Nutrition, Department of Poultry Production, Faculty of Agriculture, Ain Shams University

ABSTRACT

Amr Adel Shehata Helal: Effect of Some Amino Acids Supplementation in Diet on Productive Performance of Broiler Chicks under Egyptian Summer Conditions. Unpublished M.Sc. Thesis, Department of Poultry Production, Faculty of Agriculture, Ain Shams University, 2021.

A study was conducted to investigate the effects of feeding different levels of threonine and tryptophan on growth performance, carcass traits and some serum parameters of broiler chicks under Egyptian summer conditions. Three hundred and sixty Ross 308, one-day-old broiler chicks were randomly allocated into nine treatments with 4 replicates of 10 chicks each. Three levels of threonine (100, 150 or 200 %) and three levels of tryptophan (100, 150 or 200%) according to dietary requirements for Ross 308 chick's guidebook were used in a factorial design arrangement to obtain nine experimental treatments. Two periodical diets were used (starter phase 1-21; grower phase 22-35 days of age). Growth performance traits including live body weight (LBW), daily body weight gain (DBWG), daily feed consumption (DFC) and feed conversion ratio (FCR) were recorded at the end of each week. Carcasses were manually eviscerated and weighed. Components of total protein, albumin, cholesterol, and triglycerides were analyzed by using commercial kits. The results showed that chicks fed diet containing 200 % threonine had an improvement in live body weight, body weight gain and feed conversion ratio. The performance index increased with the addition of threonine and tryptophan in the broiler diets. Chicks fed 100% dietary threonine had the significantly better results in terms of the relative weights of carcass, edible parts and bursa compared to the chicks fed other dietary threonine levels, although tryptophan amino acid had not any significant effect on the above-mentioned traits. Giblets, liver, and heart weights percentage increase with increasing tryptophan level in the broiler diets. The relative weight of gizzard reduced with increasing level of both amino acids in the diets. The results showed that

is, no significant effects of different types and levels of amino acid on percentages of breast, thigh, drumstick, wing, and neck. The dietary inclusion of different levels of threonine had no impact on drumstick, breast, and thigh relative weights, irrespective of tryptophan different level.

Serum total protein and globulin concentrations were affected by supplemental threonine and tryptophan. Dietary threonine, tryptophan did not affect serum albumin and triglycerides. Total cholesterol was increased with supplementation of threonine, tryptophan, and interaction between them.

In this study, it concluded that supplementation of threonine and tryptophan improves productive performance and health status of broiler chicks without imposing any toxicity as all blood components were in normal range.

Key Words: Broilers, performance, threonine, tryptophan, blood, carcass traits.

ACKNOWLEDGEMENTS

First thanks are due to our merciful “Allah” who gave me the strength and energy to carry out this study. I wish to express my deepest gratitude to my father, my mother, and my wife. I wish to express my deepest gratitude to my supervisors Dr. Fathy Abdel-Azeem Mohamed professor of Poultry Nutrition, Department of poultry production, Faculty of Agriculture, Ain Shams University, for his valuable advice and guidance of this work. My honest thanks and sincere gratefulness are due to Dr. Hany Ali Thabet, associate professor of Poultry Nutrition, Department of poultry production, Faculty of Agriculture, Ain Shams University, for his genuine support, valuable advice and guidance during the preparation and writing of this manuscript and sincere comments which helped me a lot to finish this study. Dr. Mohamed Mostafa Elsayed, associate professor of Poultry Nutrition, Department of poultry production, Faculty of Agriculture, Ain Shams University, for his genuine support, valuable advice and guidance during the preparation and writing of this manuscript and sincere comments which helped me a lot to finish this study. Ahmed Mohamed Tammam Slamah, associate lecturer of Poultry Nutrition, Department of poultry production, Faculty of Agriculture, Ain Shams University, for his genuine support, valuable advice and guidance during the preparation and writing of this manuscript and sincere comments which helped me a lot to finish this study.

Great recognition are extended to my family for their fortitude and back-up throughout the progress of this work.

Finally, I would also like to thank all the staff members in department of poultry production, Faculty of Agriculture, Ain Shams University, for sincere help and kind encouragement during study.

LIST OF CONTENTS

Title	Page
LIST OF TABLES	VI
LIST OF FIGURES	VIII
LIST OF ABBRIVATION	XI
1- INTRODUCTION	1
2- REVIEW OF LITERATURE	4
2.1. Threonine and tryptophan amino acids in broiler nutrition	4
2.2. Effect of dietary threonine and tryptophan on productive performance	6
2.3. Effect of dietary threonine and tryptophan on carcass characteristics	21
2.4. Effect of dietary threonine and tryptophan on blood components	28
3- MATERIALS AND METHODS	30
3.1. Experimental design	30
3.2. Experimental birds and management.	30
3.2.1. Housing ventilation.	30
3.2.2. Feeding and Watering.	31
3.2.3. Birds care and Vaccination.	31
3.3. Experimental diets.	31
3.4. Ambient temperature and relative humidity	34
3.5. Productive performance.	34
3.5.1. Average live body weight.	35
3.5.2. Average live body weight gain.	35
3.5.3. Feed Consumption.	35
3.5.4. Feed conversion ratio.	36
3.5.5. Mortality rate.	36
3.6. Carcass characteristics.	36
3.7. Blood plasma analysis.	37
3.8. Statistical analysis.	37

4. RESULTS AND DISCUSSION	38
4.1. Productive performance	38
4.1.1. Live body weight (LBW) and Body weight gain (DWG)	38
4.1.2. Daily feed consumption (DFC) and Feed conversion ratio (FCR)	41
4.1.2. Carcass Characteristics	44
4.1.3. Carcass parts	51
4.1.4. Blood Components	60
5. SUMMARY AND CONCLUSIONS	63
6. REFERENCES	66

LIST OF TABLES

Table No.		Page
1	Feed ingredients and calculated chemical composition of experimental diets during starter	32
2	Feed ingredients and chemical composition of experimental diets during grower phase	33
3	Effect of two types and levels of amino acids on live body weight of broiler chicks.	40
4	Effect of two types and levels of amino acids on daily body weight gain of broiler chicks.	42
5	Effect of two types and levels of amino acids on daily feed intake of broiler chicks.	43
6	Effect of two types and levels of amino acids on feed conversion ratio of broiler chicks	44
7	Effect of two types and levels of amino acids on carcass characteristics of broiler chicks.	47
8	Effect of two types and levels of amino acids on relative weights of Carcass parts of broiler chicks.	54
9	Effect of two types and levels of amino acids on some blood parameters of broiler chicks.	62

