

EFFECT OF SOME ACIDIFICATION AGENTS ON PRODUCTIVE PERFORMANCE OF BROILER CHICKENS

By

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B.Sc. Agric. Sc. (Poultry Production), Ain shams University, 1999

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ABSTRACT

AHMED MOHAMMED NAGEB AL -BAZ: Effect of some acidification agents on productive performance in broiler chickens . Unpublished Ph.D. Dissertation, Department of Poultry Production, Faculty of Agriculture, Ain Shams University, 2018.

The present study was conducted to evaluate the potential beneficial impact of *Probiotic (Bacillus subtilis)*, *Prebiotic (Mannan Oligo saccharide)* and *Organic acid salts (Sodium lactate)* of incubation on growth parameters, hematological and blood biochemical profile, and immunological status, antimicrobial potentiality, and histological changes. Four hundred and five unsexed one day old Ross 308 broiler chicks were randomly distributed into 8 dietary treatments plus the control group. Each group was divided into three replicates of 15 chicks each. Chicks were fed a basal diet supplemented with acidifier agents as follow : control = non- supplemented basal diet, Pre/Pro H= Diet contains 100g/ton Probiotic + 500g/ton Prebiotic, Pre/OAs H=Diet contains 500g/ton Prebiotic + 2% *Sodium lactate*, Pro/ OAs H=Diet contains 100g/ton Probiotic + 2% Sodium lactate, OAs/Enz H=Diet contains 2% *Sodium lactate* + 500g/ton Enzyme, Pre/Pro L=Diet contains 50g/ton Probiotic + 250g/ton Prebiotic, Pre/OAs L=Diet contains 250g/ton Prebiotic + 1% *Sodium lactate*, Pro/ OAs L=Diet contains 50g/ton Probiotic + 1% *Sodium lactate* and OAs/Enz L=Diet contains 1% *Sodium lactate* + 500g/ton Enzyme.

Results showed that LBW and BWG were significantly increased in acidifier supplemented groups compared with control , and recorded the best FCR compared with non-supplemented chickens . Carcass yield and gizzard relative weights were higher in supplemented chickens than chickens of control group . Bursa and thymus relative weights were significantly increased with acidifier supplemental. Furthermore ; Chicken supplemented with a mixture of two acidifier had a reduction in serum Triglycerides , cholesterol and LDL levels while increased in glucose and HDL levels but no significantly statically in total lipid, total protein, albumin and globulin .

Addition of acidifiers to broiler chickens diet improved RBC counts , Hb , PCV , MCH and MCHC . Cecal microbial ecosystem was changed with acidifiers supplementation . Total lactic acid bacteria was highly increased while total *coliform* and *E.coil* counts were decreased in treated groups compared with control .

In conclusion, addition of a mixture of acidifiers as a growth promoters to broiler diets enhance productive performance , improve some of the biochemical and hematological indices and encourage gut useful bacteria growth.

Key words: *Probiotic, Prebiotic, Organic acid salts,* Productive Performance, Hematological, Biochemical parameters, Microbial count, Broiler.

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LIST OF ABBREVIATION

ABBREVIATION	Mean
LBW	: Live Body weight
BWG	: Body weight gain
FC	: Feed Consumption
FCR	: Feed Conversion ratio
DC	: Dressing carcass
RBC	: Red Blood Cell
Hb	: Hemoglobin concentration
PCV	: packed cell volume
GIT	: Gastrointestinal tract
IT	: Intestinal tract
HDL	: High-density lipoprotein
LDL	: Low-density lipoprotein
TLA	: Total lactic acid
CP	: Crude Protein
NDV	: Newcastle Disease virus
MCH	: Mean Corpuscular Hemoglobin
MCHC	: Mean Corpuscular Hemoglobin Concentration
CFU	: Colony-Forming Unit