SOME PHYSIOLOGICAL AND NEUROLOGICAL PARAMETERS AS AFFECTED BY *Echinacea purpurea* EXTRACT ON RABBITS

By

OMAR ABD-ELHAMED AHMED FARID
B.Sc. Agric. Sci. (Animal production), Fac. Agric., Cairo Univ., 2002

THESIS
Submitted In Partial Fulfillment of the Requirement for the Degree of

MASTER OF SCIENCE

In
Agricultural Sciences
(Animal Production Science)

Department of Animal Production
Faculty of Agriculture
Cairo University
EGYPT

2010

APPROVAL SHEET

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بعض المقاييس الفسيولوجية والعصبية للأرانب المتأثرة بمستخلص *Echinacea purpurea*

رسالة مقدمة من

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للحصول على

درجة الماجستير

فى

العلوم الزراعية
(إنتاج حيوانى)

قسم الإنتاج الحيوانى
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مصـــــــر

٢٠١٠

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LIST OF ABBREVIATIONS

A/G	Albumin Globulin ratio
AchE	Acetylcholinesterase
ALP	Alkaline phosphatase
ALT	Alanine transaminase
ANOVA	Analysis of variance
AST	Aspartate transaminase
DNA	Deoxy-ribo Nuclic Acid
E	*Echinacea purpurea*
ELISA	Enzyme Linked Immunosorent Assay
GPX	Glutathione Peroxides
GSH	Glutathion reduced
GSSG	Glutathion oxidized
Hb	Hemoglobin
HPLC	High performancy liquied chromatography
IgG	Immunoglobulin – G
IgM	Immunoglobulin – M
MC	Mother Control
MCH	Mean Corpuscular Hemoglobin
MCHC	Mean Corpuscular Hemoglobin Concentration
MDA	Malondialdehyde
MT	Mother treated
NFE	Nitrogen free extracts
NO	Nitric Oxide
NO2	Nitrites

NO3	Nitrates
NODCAR	National Organization for Drug Control and Research
NZW	New Zealand White rabbits
O^-_2	Oxide Anion
O^-2	Reactive oxygen species
PCMC	Pups control mother control
PCMT	Pups control mother treated
PCV	Packed Cell Volume
PTMC	Pups treated mother control
PTMT	Pups treated mother treated
r.b.m	Round per mint
RBCs	Red blood cells
ROS	Reactive Oxygen Species
SD	Standard division
SE	Standard Error
SOD	Superoxidedismutase
SPSS	Statistical Processor System Support
SSRIs	Selective Serotonin Reuptake Inhibitors
TEP	Tetraethoxypropane
UV	Ultra Violet
WBC's	White blood cells
γ-GGT	Gamma glutamyl-transpeptidase

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Title of Thesis: Some Physiological and Neurological Parameters As Affected by *Echinacea purpurea* Extract on Rabbits

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ABSTRACT

The present study aimed at investigating the effect of *Echinacea purpurea* (*E*) root extract supplementation on immune response and antioxidant status of growing New Zealand White rabbits.

First experiment consists of ten pregnant mothers are elected randomly from fifty conceder as control after there parturition twenty pups were elected from the total pups (forty two).

The twenty pups were divided to tow groups ten of each. The first group considered as control. The second group was treated by E (130mg/kg B.W) and considered as treated group.

Second experiment consists of ten pregnant mothers treated with E are elected randomly from fifty conceder as treated after there parturition twenty pups were elected from the total pups (forty five). The twenty pups were divided to tow groups ten of each. The first group considered as control. The second group was treated by E (130mg/kg B.W) and considered as treated group.

the results of pups which treated with *Echinacea* and pups groups of treated mothers, at the end of the fattening period showed a significant increase in the body weight, WBCs levels, ratios of lymphocytes, PCV, Total protein, the ratio between (GSH/GSSG), and nitric oxide (NO_2/NO_3) in serum , respectively, as well as in neurotransmitters (Noradrenalin , Dopamine and Serotonin).on the other hand this result showed significant decrease in both the rate of mortality, Neutrophils, Malondialdehyde, Acetylcholinesterase and the ratio of Albumin / Globulin respectively and it showed not significant changes in hemoglobin level, MCHC, MCH, Eousinophile, Basophile, WBCs, as well as monocytes, each of the liver enzymes(Alanine transaminase, Aspartate transaminase, Superoxidedismutase and Gamma glutamyl-transpeptidase) and kidney enzymes (Alkaline phosphatase).

In conclusion *E* supplementation of pregnant and weaned rabbits showed improvement of immune and antioxidant status which positively affected the growth performance and the animal health during the fattening period.

Keywords: Rabbits, *Echinacea purpurea*, antioxidants, blood picture**.**