

**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

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APPROVAL SHEET

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بعض المقاييس الفسيولوجية والعصبية للأرانب المتأثرة بمستخلص
Echinacea purpurea

رسالة مقدمة من

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فى

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CONTENTS

	Page
INTRODUCTION.....	1
REVIEW OF LITERATURE	3
1. Some factors affecting mortality of young rabbits.....	4
a. Pre-weaning mortality.....	4
b. Post weaning mortality.....	6
2. Immunity in rabbits.....	7
a. Influence of thermal and dietary stress on immune response of rabbit.....	8
b. Influence of free radicals and oxidative stress on the immune response in rabbit.....	9
3. Anti oxidant defense mechanism.....	11
4. Metabolites of animal tissues especially in rabbits	13
5. Hematological profile of rabbits.....	13
6. Brain studies	14
a. Noradrenalin	14
b. Dopamine.....	15
c. Serotonin (5-hydroxytryptamine-5HT)	16
d. Acetylcholinesterase (AChE)	17
7. Background on <i>Echinacea</i> plant extract.....	18
8. Chemical composition of <i>Echinacea</i>.....	18
a. Polysaccharides.....	18
b. Flavonoids.....	18
c. Caffeic acid derivatives.....	19
d. Essential oils.....	19
e. Alkylamides.....	19
f. Polyacetylenes.....	20
9. Usages of <i>Echinacea purpurea</i>.....	20
a. Immunostimulatory properties (immune-modulating	20

activity)	
b. Using <i>Echinacea</i> for anti inflammatory.....	20
c. <i>Echinacea</i> as antioxidant.....	22
d. Respiratory tract infection and common cold using <i>Echinacea</i>	22
MATERIALS AND METHODS	23
1. Animals and experimental conditions.....	23
2. Experimental design.....	26
3. Blood and tissues collection.....	27
4. Physiological and biochemical measurements.....	29
5. Brain studies	36
6. Antioxidant parameters.....	38
7. Body weight	42
8. Statistical analysis.....	43
RESULTS AND DISCUSSION	44
1. Body weight (BW)	44
2. Physiological and biochemical measurements.....	50
3. Biochemical studies.....	66
4. Brain studies	80
SUMMARY	90
REFERENCES	94
ARABIC SUMMARY	

LIST OF TABLES

No.	Title	Page
1.	The ingredients and chemical composition of the control diet	24
2.	The chromatogram of the monoamines standard separated by HPLC.....	38
3.	Chromatographic separation retention time of reduced and oxidized glutathione mixture by HPLC.....	39
4.	Chromatographic separation retention time of Malondialdehyde by HPLC.....	41
5.	Chromatographic separation retention time of nitrites and nitrates mixture by HPLC.....	42
6.	Effect of <i>Echinacea</i> extract on mother rabbit's body weights (kg).	45
7.	Effect of <i>Echinacea</i> supplementation to mothers on rabbit's body weights (g) during lactating period.	46
8.	Effect of <i>Echinacea</i> supplementation on growth performance of growing rabbit's body weights (kg).	49
9.	Effect of <i>Echinacea</i> extract on hematological parameters in mother rabbits.	52
10.	Effect of <i>Echinacea</i> extract on hematological parameters in growing rabbit's hematological parameters.	54
11.	Effects of <i>Echinacea</i> extract on total leukocytes counts and it's differentiation in mother rabbits.	57
12.	Effects of <i>Echinacea</i> extract on total leukocytes counts and it's differentiation in growing rabbits.	59
13.	Effect of <i>Echinacea</i> extract on total serum IgG and IgM and plasma total protein, albumin and globulin in mother rabbits.	63
14.	Effect of <i>Echinacea</i> extract on total serum IgG and plasma total protein, albumin, and globulin in growing rabbits.....	65
15.	Effect of <i>Echinacea</i> extract administration for three weeks on liver biochemical parameters and kidney ALP activity in mother rabbits.	68
16.	Effect of <i>Echinacea</i> extract administration for three weeks on liver biochemical parameters and kidney ALP activity in growing rabbits.	70

17.	Effect of <i>Echinacea</i> extract on serum MDA, glutathione (GSH and GSSG), nitric oxide (nitrites and nitrates) in mother rabbits.	73
18.	Effect of <i>Echinacea</i> extract on serum MDA, glutathione (GSH and GSSG) and nitric oxide (nitrites and nitrates) in growing rabbits.	75
19.	Effect of <i>Echinacea</i> extract on brain of mother rabbit's monoamines level ($\mu\text{g/g}$) and acetylcholinesterase activity (AChE) (nmole/min/g).	82
20.	Effect of <i>Echinacea</i> extract on brain monoamines level ($\mu\text{g/g}$) and acetylcholinesterase activity (AChE) ($\mu\text{mole/min/g}$) in growing rabbits.....	83

LIST OF FIGURES

No.	Title	Page
1.	Chemical composition of <i>Echinacea</i> separated by HPLC...	25
2.	The chromatogram of the monoamines standard separated by HPLC.....	37
3.	The chromatogram of the reduced and oxidized glutathione standard separated by HPLC.....	39
4.	The chromatogram of the MDA standard separated by HPLC.....	40
5.	The chromatogram of the nitrites and nitrates standard separated by HPLC.....	42
6.	Percentage change of the body weight from initial in control (none treated) and <i>Echinacea</i> treated mother rabbits.....	46
7.	Percentage change of the body weight from initial in control (none treated) and <i>Echinacea</i> treated rabbits during the lactating period.....	47
8.	Effect of <i>Echinacea</i> supplementation on percentage mortality of rabbits during fattening period.....	49
9.	Effect of <i>Echinacea</i> supplementation on rabbit's body weights percentage change from control during fattening period.....	50
10.	Effect of <i>Echinacea</i> supplementation on the percentage change of the hematological parameters from the duration corresponding control in mother rabbits.....	53
11.	Effect of <i>Echinacea</i> supplementation on the percentage change of the hematological parameters from the corresponding duration control during the fattening period.	53
12.	Effect of <i>Echinacea</i> supplementation on the percentage change of the total leukocytes counts and it's differentiation from the duration corresponding control in mother rabbits.....	58
13.	Effect of <i>Echinacea</i> supplementation on the percentage change of the total leukocytes counts and it's differentiation from the corresponding duration control during the fattening period.....	58

14. Effect of <i>Echinacea</i> supplementation on the percentage change of serum total IgG and IgM and plasma total protein, albumin and globulin in mother rabbits.....	64
15. Effect of <i>Echinacea</i> supplementation on the percentage change of the blood parameters from the corresponding duration control during the fattening period.....	64
16. Effect of <i>Echinacea</i> supplementation on the percentage change of liver biochemical parameters and kidney ALP activity in mother rabbits from control.	69
17. Effect of <i>Echinacea</i> supplementation on the percentage change of the liver biochemical parameters and kidney ALP activity from the control during the fattening period..	69
18. Effect of <i>Echinacea</i> supplementation on the percentage change of on serum MDA, glutathione (GSH and GSSG), nitric oxide (nitrites and nitrates) from the duration corresponding control in mother rabbits	74
19. Effect of <i>Echinacea</i> supplementation on the percentage change of serum MDA, glutathione (GSH and GSSG) and nitric oxide (nitrites and nitrates) from the control during the fattening period.	74
20. Effect of <i>Echinacea</i> supplementation on the percentage change of the brain monoamines level and acetylcholinesterase activity from the control in mother rabbits.	82
21. Effect of <i>Echinacea</i> supplementation on the percentage change of the brain monoamines level and acetylcholinesterase activity from the control during the fattening period.....	83

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 Nucleic Acid
<i>E</i>	<i>Echinacea purpurea</i>
ELISA	Enzyme Linked Immunosorbent Assay
GPX	Glutathione Peroxidase
GSH	Glutathione reduced
GSSG	Glutathione oxidized
Hb	Hemoglobin
HPLC	High performance liquid 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
O₂⁻	Oxide Anion
O₂[•]	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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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 conceiver 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 conceiver 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 (NO₂/NO₃) 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.