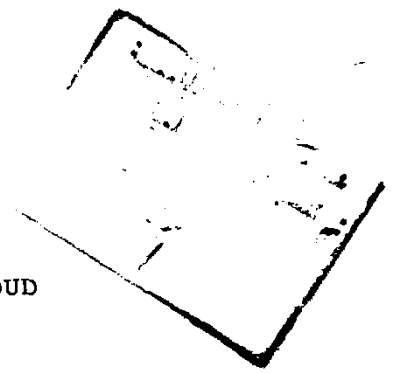
EFFECT OF RADIATION TREATMENT ON NUTRITIVE VALUE OF POULTRY WASTES



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SALWA ZAKARIA MAHMOUD

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By

SALWA ZAKARIA MAHMOUD

B. Sc. Agric. (Animal production) 1976 Ain Shams Univ.

M. Sc. Agric. (Animal Nutrition) 1983 Ain Shams Univ.

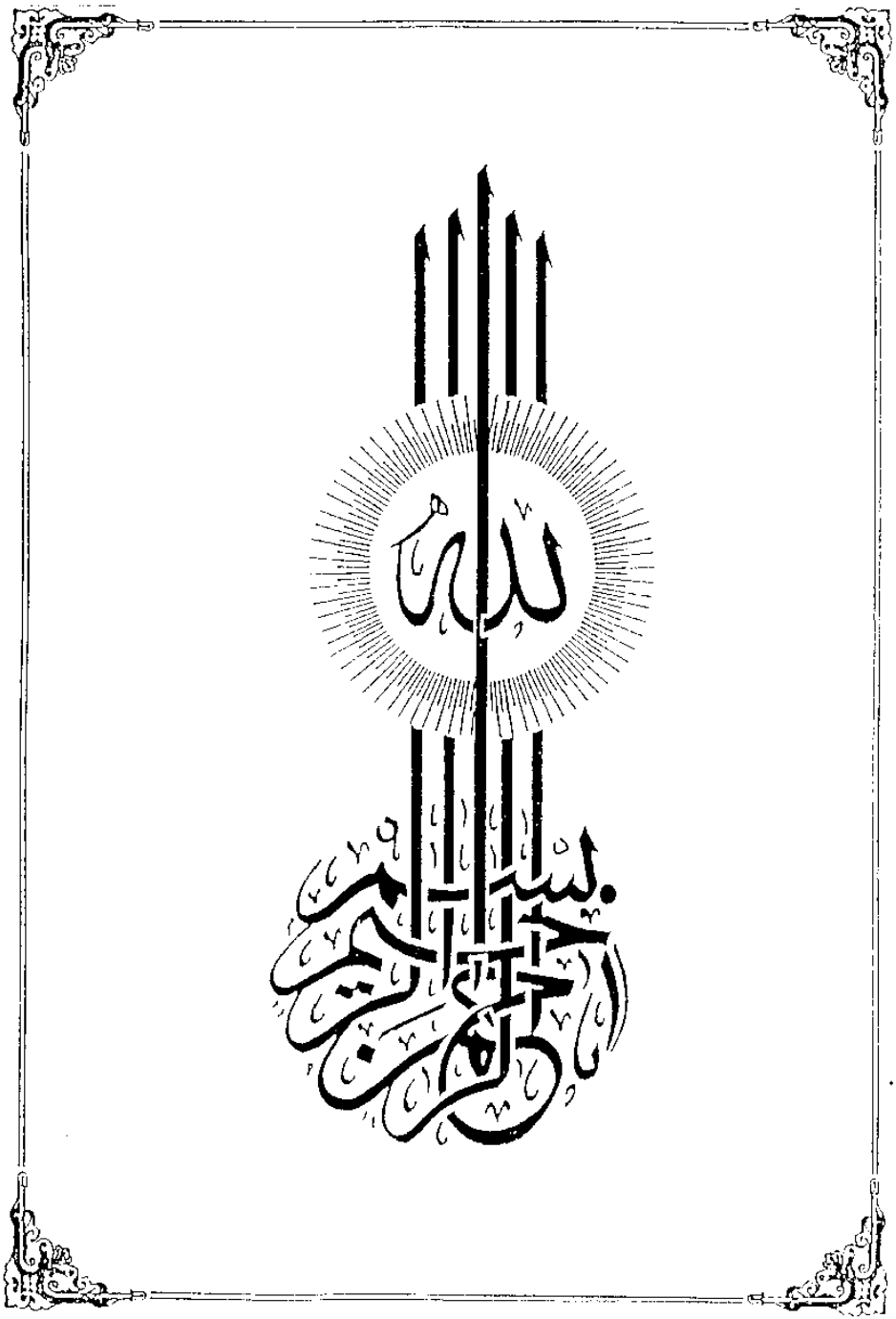
Thesis for Ph. D. degree has been approved by:

Prof. Dr. H. Khattab. Prof. of Animal Nutrition of Department of Animal Production ..Hamdy. Khattab..

Prof. Dr. R. Yousri. Prof. of Animal Nutrition of The National Center for Radiation Research and Technology ..R.M. Yousri.....

Prof. Dr. M. El-Ashry. Prof. of Animal Nutrition and Head of Animal Production ..M. El Ashry

Date of examination: 6 / 5 **1993.**



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By

Salwa Zakaria Mahmoud

B.Sc. Agric. (Animal Production) 1976 Ain Shams Univ.

M.Sc. Agric. (Animal Nutrition) 1983 Ain Shams Univ.

Under The Supervision of:-

Prof. Dr. Mohamed A. El-Ashry.

Prof. of Animal Nutrition

Prof. Dr. Hamed R. El-Kaddy.

Emeritus Prof. at National Center for Radiation Research and Technology

Prof. Dr. Hussien S. Soliman.

Prof. of Animal Nutrition.

ABSTRACT

Three doses of gamma rays induced in broiler litter compared with oven dried and sun dried broiler litter, to study their effect on pathogenic microorganisms. In-vitro studies and in-vivo studies were carried out on mature goats to study the effect of irradiation on different levels of broiler litter based rations. Five mature goats were used in five experimental diets by statistical system of repeated measurements. Each one fed on T_1 control 0% BL, T_2 containing 15% unirradiated BL from CFM (DM). T_3 containing 15% irradiated BL (with 10 KGy) from CFM DM, T_4

containing 30% unirradtiated BL from CFM DM, T_5 containing 30% irradiated BL (with 10 KGy) from CFM DM.

The objectives were to study the effect of radiation treatments on pathogenic microorganisms might included in BL and to study the effect of BL irradiated and non irradiated inclusion in diets on digestion coefficients of the rations and some rumen parameters. Results showed that the best treatments affected on pathogenic was radiation with doses 10, 20 KGy and oven drying. No significant difference was detected between different treatments on digestion coefficients except ether extract ($P< 0.05$). Difference in ammonia nitrogen concentrations in rumen liquor was significant ($P< 0.01$) due to treatments. Significant difference was found between treatments effect on total nitrogen, non protein nitrogen and true protein nitrogen concentration in rumen liquor ($P< 0.05$). Protozoa count showed significant difference between treatments ($P< .05$). Total serum protein, Albumin, globulin A/G ratio cholesterol, GPT and T_4 had no significant difference between treatments. While serum urea, creatin, GOT, T_3 were significant between treatments.

Results of the present study indicate also that radiation treatments had significant effect on pathogenic microor-ganism and replacing different levels of BL instead of feed mixture DM in rations for ruminants had no negative effect on the health of animal.

LIST OF ABBREVIATIONS

ANOVA	Analysis of variance.
APW	Autoclaved poultry waste
ASH	Crude ash.
BL	Broiler litter.
CFM	Concentrate feed mixture.
CLD	Cage layer dropping.
CP	Crude protein.
DBE	Dehydrated broiler excreta
DM	Dry matter.
EE	Ether extract.
g	gram.
GOT	Glutamic - oxaloacatic transaminase.
GPT	Glutamic - pyruvic transaminase.
Gy	Gray = 100 rad.
KGy	Kilogray = 100 Kilorad.
Mrad	Megarad = Million rad.
N	Nitrogen.
NB	Nitrogen balance.
NPN	Non protein nitrogen.
OM	Organic matter.
P	Probability.
PW	Poultry waste
Rad	The basic unit of absorbed dose of ionizing radiation. It equals 100 erg of absorbed energy per g of absorbing.
TP	Total protein.
TN	Total nitrogen.
TPN	True protein nitrogen.

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