EFFECT OF THE CARBAMATE METHOMYL TOXICITY ON REPRODUCTION AND DEVELOPMENT OF WHITE ALBINO RATS IN RELATION TO FOLIC ACID ADMINISTRATION

By

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B. Sc. Agric. Sc. (Pesticides), Cairo University, 1997

M. Sc. Agric. Sc. (Pesticides), Ain Shams University, 2003

A thesis submitted in partial fulfillment

of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

Agricultural Science

(Pesticides)

Department of Plant Protection

Faculty of Agriculture

Ain Shams University

2009

Approval Sheet

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ACKNOWLEDGEMENT

Firstly ultimate thanks to ALLAH

I wish to express my deep apperception and gratitude to **Prof. Dr. Zidan Hindy Abdel- Hamid,** Professor of Pesticide Chemistry and Toxicology. Department of Plant Protection, Faculty of Agriculture, Ain Shams University (Supervisor), for his supervision, reading the manuscript, helpful suggestion and constructive criticism.

My deepest gratitude is extended to **Dr. Alaa El-Din Bayoumi Abdel Khalek,** Associate Professor of Pesticide Chemistry and Toxicology. Department of Plant Protection, Faculty of Agriculture, Ain Shams University, for his supervision, revising the manuscript, helpful suggestion, offering facilities of the work, and constructive criticism.

The author also extends her deep gratitude to **Dr. Moustafa Abas Shalaby** Head Master of Pharmacology Department Faculty of Veterinary Medicine, Cairo University, for his helpful suggestion, offering facilities of the work, and constructive criticism.

Also, I wish to my gratitude to **Dr. El-Hussein Naguib El-Khatib** Chief of Research of Mammalian Toxicology, Central Agriculture of Pesticides Laboratory (CAPL), Agriculture Search Center.

I want to express my grateful to my father, my mother, my husband Dr. Abd El-Hamid Nahas, and my little daughter **Sondos Abd El-Hamid**.

ABSTRACT

REEM MOUSTAFA ZIADA: Effect Of The Carbamate Methomyl Toxicity On Reproduction And Development Of White Albino Rats In Relation To Folic Acid Administration. Unpublished Ph. D. Thesis, Department of Plant Protection, Faculty of Agriculture, Ain Shams University, 2009.

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The present study was performed to clarify the effect of methomyl at the two selected dose levels (0.8 and 0.4 mg/Kg b.w.) alone and combined with folic acid at Acceptable Daily Intake (ADI≈1.1µg/Kg bw) on the biochemical markers (AChE, GST, GSH, MDA, SOD, CAT) of dams after delivery, male, their corresponding pups. Also, this study conducted to explain the effect of methomyl and methomyl combined with folic acid on some parameter of male fertility after oral administration for 65-days. The obtained results revealed that, inhibition of AChE activity in brain, liver and serum of dams after delivery, male and their pups. The activity of GST was significantly inhibited in liver of dams after delivery, male and their pups. There were an increase in level of GSH and MDA in liver and brain and liver, respectively. The studied experimental animals treated with methomyl and combined with folic acid showed inhibition in liver CAT and; brain and liver SOD activity. More over, the results showed the presence of dose-dependant, decrease in the weight of sex organs and sperm motility associated with an increase in the percentage of dead and abnormal spermatozoa, a decrease in testosterone levels of male serum. Histopathological examination of testes revealed server degenerative changes of spermatogoneal cells with incomplete arrest of spermatogenesis. On the other hand, combination between methomyl and folic acid caused an improvement of biochemical markers and male fertility.

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Key words: Methomyl, Folic acid, AChE, GST, GSH, MDA, SOD, CAT, Sex organs weight, Semen picture, Serum Testosterone, Histopathology of testis, Folic acid, Male rats.

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