

CYTOLOGICAL STUDIES ON THE EFFECT OF SOME PESTICIDES

رسالة

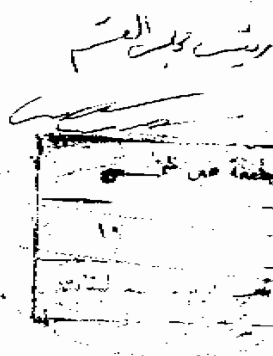
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This thesis has not been previously submitted for any degree at this or at any other university.

Hala Ragab Ali

ABSTRACT

Hala Ragab Ali **Cytological studies on the effect of some pesticides.** M.sc. Botany Department , Faculty of science, Ain Shams University

In this investigation , the effect of three pesticides : the insecticide actellic , the herbicide trifluralin and the nematicide nemacur were studied on mitosis of *Allium cepa* root cells in addition to the effect of actellic insecticide on the nucleic acids content. The three pesticides used reduce the mitotic activity, also they induced changes in the frequencies of the different mitotic stages, in addition they induced a wide range of mitotic abnormalities in all stages of mitoses. The low concentrations used of actellic insecticide had increased the nucleic acids content , while the higher ones had decreased them.

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INTRODUCTION

INTRODUCTION

The application and production of pesticides is expanding with each passing year, and their tonnage and assortment is growing. And yet , more and more data are appearing in the literature on the fact that many of them can change the hereditary constitution of living organisms. Such changes , arising in nature as a result of the use of pesticides , can have far-reaching consequences in the control of natural life , the maintenance of varietal purity of plants , and the evolutionary variation of flora and fauna.

It has become clear , that a countless number of pesticides are capable of inducing chromosomal damage in crop plants. Moreover , a link between chromosomal anomalies produced by these pesticides and gene mutation has been confirmed (Wuu and Grant 1966 , Panda and Sharma 1979 , Singh *et al.* 1980 and Gichner *et al.* 1982). The use of chromosomal aberrations , induced by pesticides in crop plants , is therefore , being accepted as indicators of genetic damage (Kihlman 1975 , Grant 1978 and Ma 1982).

The use of plant root tips , particularly those of *Allium cepa* and *Vicia faba* , as a bioassay test system for the genotoxicity of pesticides has shown extremely good correlation with the bacterial and mammalian systems (De Kergommeaux *et al.* 1983). Therefore , many investigations have been carried out testing the cytotoxic effects of pesticides either herbicides , fungicides or insecticides in the root tips of different plants.
