

CONTENTS

	Page
Introduction.....	1
Review of literature.....	3
I Pesticide residues in cereal grains.....	3
II Side effects of pesticide residues on cereal plants.....	23
a. Side effects on seed germination.....	24
b. Side effects on plant growth.....	26
c. Side effects on crop yield.....	33
d. The side effect on yield quantity.....	34
III Absorption and translocation of pesticide residues in cereal plants.....	36
a. Absorption of pesticide residues in plants.....	37
b. Translocation.....	56
IV Degradation of pesticides in stored cereal crops plants.....	68
V Degradation of pesticides during cooking and bread processing.....	77
VI Developed methods for pesticide residues determination in cereal crops.....	85

Materials and Methods.....	104
A) Side effect of pesticide residues on cereal plants growth.....	104
B) Absorption and translocation of pesticide residues through the roots of corn and wheat.....	105
C) Insecticide residues levels through bread processing.....	107
D) Survey of pesticide residues levels in cereal grains in Egypt.....	108
Chemical analysis.....	113
Extraction.....	113
Clean-up.....	113
Determination.....	115
Results	
I 1. Effect on germination.....	117
2. Effect on root growth.....	117
3. Effect on green parts of the tested plant.....	119
4. Effect on dry weight.....	131
II Absorption and translocation of insecticides via the roots of corn and wheat.....	133
III Insecticide residues levels through bread processing.....	135
IV Survey of pesticide residues levels in cereal grains and their products.....	137
V Pesticide residues in samples from Alexandria.....	137

Pesticide residues in samples from El-Behera.....	138
Pesticide residues in samples from Gharbia.....	145
Pesticide residues in samples from Dakahlia.....	153
Pesticide residues in samples from Sharkia.....	153
Pesticide residues in samples from Kafre El-Sheikh.....	159
Pesticide residues in samples from Menofia.....	159
Pesticide residues in samples from Kalubia.....	163
Pesticide residues in samples from Cairo.....	168
Pesticide residues in samples from Giza.....	173
Pesticide residues in samples from El Fayoum.....	173
Discussion.....	175
Summary.....	188
References.....	194
Arabic summary	