

ABSTRACT

This work has been carried out to investigate pesticide residues contaminating fruits and vegetables samples which collected from eight local markets of eight governorates in Egypt during 1998 and 1999 and examined for the residues of 58 pesticides (organohalogen, organophosphorus, organonitrogen, and some pyrethroid). In 1998, the contamination percentage was 19.8% of which 2% exceeded the MRL's. However, in 1999, the contamination percentage was 17.2% of which 2.3% exceeded the MRL's.

Key words;

Pesticide residues, organohalogen, organochlorine, fruits and vegetables.

CONTENTS

ACKNOWLEDGMENT

LIST OF FIGURES

LIST OF TABLES

ABBREVIATIONS

ABSTRACT.....	1
---------------	---

CHAPTER ONE

1. INTRODUCTION.....	2
----------------------	---

CHAPTER TWO

2. REVIEW OF LITERATURE	4
2.1. Monitoring of pesticide residues.....	4

CHAPTER THREE

3. MATERIAL AND METHODS.....	35
3.1. Monitoring of organohalogen, organophosphorus, organonitrogen and pyrethroid residues in vegetables and fruits.....	35
3.1.1. Sampling.....	36
3.1.2. Sub sampling.....	44
3.1.3. Pesticide studied.....	44
3.1.3.1. Organophosphorus and organonitrogen Pesticides.....	44
3.1.3.2. Organohalogen and pyrethroid pesticides.	49
3.1.4. Instrumentation.....	55
3.1.4.1. Equipment.....	55
3.1.4.2. Glass ware.....	55
3.1.4.3. Chemicals and reagents	56
3.1.4.4. Others.....	57
3.1.5. Extraction and partitioning	57
3.1.6. GC determination.....	57

CHAPTER FOUR

4.RESULTS.....	67
Monitoring of pesticide residues in vegetables and fruits.....	67
4.1. Fruits.....	68
4.1.1. Dates.....	68
4.1.2. Grape.....	69
4.1.3. Guava.....	70
4.1.4. Mango.....	70
4.1.5. Peach.....	71
4.1.6. Plum.....	71
4.1.7. Strawberry.....	71
4.2. Leafy vegetables.....	72
4.2.1. Green coriander.....	72
4.2.2. Egyptian mallow.....	73
4.2.3. Green dill.....	73
4.2.4. Grape leaf.....	73
4.2.5. Spinach.....	74
4.2.6. Water cress.....	74
4.3. Others vegetables.....	75
4.3.1. Carrot.....	75
4.3.2. Cucumber.....	75
4.3.3. Green bean.....	76
4.3.4. Onion.....	76
4.3.5. Pepper.....	77
4.3.6. Squash.....	77
4.3.7. Tomato.....	78

CHAPTER FIVE

5. DISCUSSION.....	94
6. REFERENCES.....	113
ARABIC SUMMARY.....	
ARABIC ABSTRACT.....	

LIST OF ABBREVIATIONS

AOAC	:	Association Official of Analysis Chemistry
Biph	:	Biphenyl
CCPR	:	Codex Committee on Pesticide Residues
CV%	:	Coefficient of variation percent
DDD	:	Dichloro-Diphenyl Dichloro-ethane
DDE	:	Dichloro-Diphenyl Dichloroethene
DDT	:	Dichloro-Diphenyl Trichloroethene
DDVP	:	Dichlorovos
DMTP	:	Methidathion
ECD	:	Electron Capture Detector
EPA	:	Environmental Protection Agency
EPN	:	o-ethyl-o-(p-nitrophenyl)-phenylphosphonothioate
FAO	:	Food and Agriculture Organization
FDA	:	Food and Drug Administration
GAP	:	Good Agriculture Practice
GLC	:	Gas Liquid Chromatography
HCB	:	Hexachlorobenzene
HCH	:	Hexachlorocyclohexane
JMPR	:	Joint FAW/WHO Meeting on Pesticide Residues
LOD	:	Limit of determination
mg/Kg	:	Milligram per kilogram

MRL	:	Maximum Residue Limits
ND	:	Undetectable
NFA	:	National Food Administration
NPD	:	Nitrogen phosphorus detector
OCC	:	Organochlorine contaminant
OPP	:	o-phenyl phenol
PCB	:	Polychlorinated Biphenyl
ppb	:	part per billion
TD	:	Trade name
WHO	:	World Health Organization