



**Effect of some insecticides on the cotton leaf worm,  
*Spodoptera littoralis* (Boisd.) in relation  
of *Coccinilledae* spp. Beetels**

**By**

**WAFAA OSAMA MOHAMED SIDEK**

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## ABSTRACT

The lethal effects of three insecticides from different groups namely: emamectin benzoate, lufenuron and indoxacarb were evaluated on the 2<sup>nd</sup> and 4<sup>th</sup> instars larvae of a laboratory strain and 4<sup>th</sup> instar larvae of field strain of cotton leafworm, *Spodoptera littoralis* (Boisd.). In laboratory strain, the toxicity effect indicated that emamectin benzoate is the most effective compounds among all tested insecticides. The latent effects of the tested compounds such as; duration periods of larval and pupal stages, larval mortality percentage, pupation percentage, pupal weight, adult emergency, male and female longevities, sex ratio, female fecundity, incubation period and percentage of hatchability were also studied. Data revealed that all compounds varied in their influences on biological aspects, and these biological aspects could have relation with toxicity of insecticides against *S. littoralis* larvae.

Also, total soluble protein, total lipids, carbohydrate hydrolyzing enzymes (amylase, invertase and trehalase), transaminase enzymes (AST and ALT) were also assessed in biochemical studies for both laboratory and field strains. Field study was also planned to evaluate the efficacy of emamectin benzoate, indoxacarb and lufenuron compounds against the cotton leafworm, *S. littoralis* and its natural predator *Coccinellae* spp during the two successive seasons 2017 and 2018. Our results indicated that lufenuron compound was the most effective in controlling the cotton leafworm followed by emamectin benzoate during the two seasons; while indoxacarb was the lowest toxic on its natural predator *Coccinellae* spp.

Additionally, emamectin benzoate put itself in the top by affecting most of biological and biochemical aspects of field strain.

## List of contents

Contents	Page
<b>INTRODUCTION</b>	1
<b>REVIEW OF LITERATURE</b>	3
1- Laboratory studies	3
1.1-Toxicological effects of some tested compounds on cotton leafworm , <i>S.littoralis</i> (Boisd.)	3
1.2-Biological effects of some tested compounds on <i>S.littoralis</i>	9
1.3-Biochemical effects of some tested compounds on <i>S.littoralis</i>	12
2- Field studies	13
2.1- Field studies on <i>S. littoralis</i> .	13
<b>MATERIALS AND METHODS</b>	21
1- Tested compounds	21
2. Laboratory studies	23
2.1- Rearing technique	23
2.2. Toxic effects of tested insecticides against 2 <sup>nd</sup> instar larvae of laboratory strain of <i>S. littoralis</i>	24
2.3- Latent effect of tested insecticides on the biological aspects of two strains of <i>S. littoralis</i>	25
2.4. Biochemical studies	27

2.4.1- Samples preparation	27
2.4.2- Determination of carbohydrate hydrolyzing enzymes.	27
2.4.3- Determination of total lipids.	28
2.4.4- Determination of total soluble protein	29
2.4.5- Determination of transaminase enzymes activities.	29
3- Field studies	30
4- Statistical analysis.	31
<b>RESULTS AND DISCUSSION</b>	32
I- Laboratory studies	32
1.1- Toxic effects	32
1.1.1- Toxic effects of the tested insecticides on 2 <sup>nd</sup> instar larvae of laboratory strain of <i>S. littoralis</i>	32
1.1.2- Toxic effects of the tested insecticides on 4 <sup>th</sup> instar larvae of laboratory and field strains of <i>S. littoralis</i>	35
1.2- Determination of some biological aspects	37
1.2.1- 2 <sup>nd</sup> instar larvae	37
-Larval Mortality	38
-Larval duration	39
-Pre-pupal duration	40
-Pupal duration	40

-Pupation percentage	40
-Pupal weight	40
-Malformed Pupae	41
-Adult emergency percentages	41
- Sex ratio	42
-Male longevity	43
-Female longevity	43
- No. of eggs/ female	44
-Incubation period	44
-Hatchability percentages	45
1.2.2- 4 <sup>th</sup> instar larvae	45
1.2.2.1- Effect of tested insecticides on some biological aspects for larval and pupal stages	45
-Larval Mortality	45
- Larval duration	46
- Pre-pupal duration	48
- Pupal duration	48
- Pupation percentage	49
- Pupal weight	49

- Malformed Pupae	50
- Adult emergency	50
- Male longevity	51
- Female longevity	51
- No. of eggs/female	52
- Incubation period:	53
- Hatchability percentage:	53
1.3- Biochemical responses	55
1.3.1- Effects of tested insecticides on some biochemical responses of treated 2 <sup>nd</sup> instar larvae	55
1.3.1.1- The total soluble protein	55
1.3.1.2- The total lipids	56
1.3.1.3- Carbohydrate hydrolyzing enzymes	58
1.3.1.4- Transaminase enzymes	59
1.3.2- Effects of the tested compounds on some biochemical responses of the treated 4 <sup>th</sup> instar larvae of <i>S. littoralis</i>	61
1.3.2.1- Total lipid	61
1.3.2.2- Total soluble protein	61
1.3.2.3- Carbohydrate hydrolyzing enzymes	62
1.3.2.4- transaminase enzymes	64

2-Field studies	67
2.1- Efficiency of the tested insecticides against larvae of cotton leaf worm, <i>S. littoralis</i> under field conditions	67
2.1.1- Season 2017	68
2.1.2- Season 2018	70
2.2.- Efficiency of the tested insecticides against <i>Coccinellae</i> spp. under field conditions	72
2.2.1- Season 2017	72
2.2.2- Season 2018	74
<b>ENGLISH SUMMARY</b>	77
<b>REFERENCES</b>	89
<b>ARABIC SUMMARY</b>	i

## LIST OF TABLES

Table No.	Title	Page No.
1	Toxicity of emamectin benzoate, lufenuron and indoxacarb on 2 <sup>nd</sup> instar larvae of laboratory strain of <i>S. littoralis</i>	33
2	Results of emamectin benzoate, lufenuron and indoxacarb on 4 <sup>th</sup> instar larvae of laboratory and field strains	37
3	Effect of tested compounds on biological aspects of larval and pupal stages of 2 <sup>nd</sup> instar larvae laboratory and field strains	39
4	Effect of tested insecticides on some biological aspects of adult and egg stages of 2 <sup>nd</sup> instar larvae of <i>S. littoralis</i>	42
5	Biological aspects of larval and pupal stages for LC <sub>25</sub> from tested compounds on 4 <sup>th</sup> instar larvae of laboratory and field strains of <i>S. littoralis</i>	48
6	Biological aspects of adult and egg stages for LC <sub>25</sub> from tested compounds on 4 <sup>th</sup> instar larvae of laboratory and field strains of <i>S. littoralis</i>	52
7	Changes of total soluble protein and total lipid levels in the 2 <sup>nd</sup> instar larvae of <i>S. littoralis</i> :	57
8	Changes in Carbohydrate hydrolyzing enzymes activities in the 2 <sup>nd</sup> instar larvae of <i>S. littoralis</i>	59
9	Changes of transaminase enzymes activities in the 2 <sup>nd</sup> instar larvae of <i>S. littoralis</i>	60



<b>10</b>	Concentration percentages for total lipid and total soluble protein in 4 <sup>th</sup> instar larvae of laboratory and field strains of <i>S. littoralis</i> :	62
<b>11</b>	Activity of carbohydrate hydrolyzing enzymes in 4 <sup>th</sup> instar larvae of laboratory and field strains of <i>S. littoralis</i> :	64
<b>12</b>	Activity of transaminase enzymes in 4 <sup>th</sup> instar larvae of laboratory and field strains of <i>S. littoralis</i>	66
<b>13</b>	Percent reduction of <i>S. littoralis</i> in cotton fields treated with tested insecticides during season 2017.	70
<b>14</b>	Percent reduction of <i>S. littoralis</i> in Cotton fields treated with tested insecticides during season 2018:	72
<b>15</b>	Percent reduction of <i>Coccinellae</i> spp. in cotton fields treated with tested insecticides during season 2017.	74
<b>16</b>	Percent reduction of <i>Coccinellae</i> spp. in cotton fields treated with tested insecticides during season 2018	76