

# **Induced Resistance of Some Vegetable Cultivars and its Effects on the Seasonal Dynamics of the Two-Spotted Spider Mite and its Predators in Ismailia Governorate, Egypt**

By

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## ABSTRACT

Susceptibility of different strawberry, eggplant, and tomato cultivars to the two-spotted spider mite (TSSM), *Tetranychus urticae* infestation together with its predators in open field. The first experiment was carried out in the research farm of Ismailia Agricultural Research Station, during one growing season on different strawberry cultivars and during two successive growing season (winter-summer) on both eggplant and tomatoes cultivars. Results indicated that the average number of TSSM were variable in different strawberry cultivars and according to the season studied in both eggplant and tomato. Two predators appeared in strawberry and during winter growing season of both tomato and eggplant, while no predators were recorded during the summer season. *T. urticae* is influenced by different climatic conditions in the growing season. The second experiment were conducted to investigate the effect of foliar application of two silicon forms; oligomeric silicic acid (OSAB) and potassium silicate (Silica K) to induce the resistance of strawberry and eggplant cultivars against TSSM invasion. Our findings showed that the foliar application of both Si forms at 4 mL L<sup>-1</sup> with two or three sprays caused a significant reduction in the number of TSSM adult, nymph and egg stages compared to the control. Both OSAB and Silica K applications achieved a marked increase in the activity of the defense-related enzymes and elevation of the total protein, and phenol contents in Si-treated plants as compared to the control. There was a significant negative correlation found between Si leaf content and TSSM population density in Si-treated plants. The study also proved that Si in the form of oligomeric silicic acid or potassium silicate may act as a plant resistant inducer and improve the resistance of strawberry and eggplant against *T. urticae* infestation under field conditions.

**Keywords:** *Tetranychus urticae*, cultivars, potassium silicate; oligomeric silicic acid; resistance inducer, foliar spray, antioxidant enzymes.

## Contents

<b>I. Introduction and Aim of the work</b> .....	<b>1</b>
<b>II. Review of literatures</b> .....	<b>5</b>
II.1. The two-spotted spider mite .....	5
II.1.1. Nomenclature and systematic position .....	5
II.1.2. Geographical distribution .....	5
II.1.3. Reproduction and developmental stages.....	5
II.1.4. Feeding .....	6
II.1.5. Damage .....	7
II.1.6. Natural enemies .....	8
II.2. Host plants.....	10
II.2.1. Strawberry ( <i>Fragaria ananassa</i> ).....	11
II.2.2. Eggplant ( <i>Solanum melongena</i> ).....	12
II.2.3. Tomato ( <i>Solanum lycopersicum</i> ).....	13
II.2.4. Seasonal incidence of TSSM on the different host plants .....	13
II.2.5. Cultivars susceptibility against TSSM .....	15
II.3. Induction of host plant resistance .....	18
II.3.1. Mechanism of plant resistance .....	19
II.3.2. Silicon as fertilizer in inducing host plant resistance.....	19
II.3.3. Silicon uptake in the plants .....	21
II.3.4. Silicon and pest resistance .....	21
II.3.5. Silicon forms.....	23
II.3.5.1. Potassium silicate (Silica K).....	23
II.3.5.2. Oligomeric silicic acid (OSAB).....	25
II.3.6. Silicon effects on the antioxidant enzymes activity.....	26
II.3.6.1. Catalase (CAT).....	27
II.3.6.2. Polyphenol oxidase (PPO).....	28
II.3.6.3. Peroxidase (POD) .....	28
II.3.7. Silicon effects on the non-enzymatic compounds.....	30
II.3.7.1. Total phenols content.....	30
II.3.7.2. Total protein content.....	30
<b>III. Materials and Methods</b> .....	<b>32</b>

III.1. Effect of different vegetable cultivars on the seasonal dynamics of <i>T. urticae</i> and its associated predators under open field conditions.....	32
III.A.1. Vegetable crop cultivars .....	32
III.A.1.1. Strawberry .....	32
III.A.1.2. Eggplant .....	32
III.A.1.3. Tomato .....	33
III.A.2. Plant cultivation .....	33
III.A.2.1. Sampling of TSSM and its predators .....	33
III.B. Induction of host plant resistance using two-silicon forms against <i>T. urticae</i> .....	34
III.B.1. Experimental design .....	34
III.B.2. Sampling .....	35
III.B.3. Biochemical analysis for <i>Fragaria ananassa</i> and <i>Solanum melongena</i> leaves ...	35
III.B.3.1. Silicon quantification .....	35
III.B.3.1.1. Sample preparation .....	35
III.B.3.1.2. Determination of Si content .....	36
III.B.3.2. Total phenolic content determination .....	36
III.B.3.3. Determination of total protein content and antioxidant enzymes activity....	36
III.C. Statistical analysis.....	38
<b>IV. Results .....</b>	<b>39</b>
IV.I. Effects of host plants cultivars on the seasonal dynamics of <i>T. urticae</i> stages and its predators .....	39
IV.I.1. Strawberry cultivars .....	39
IV.I.1.1. <i>T. urticae</i> adult stage .....	39
IV.I.1.2. <i>T. urticae</i> nymphal stage .....	43
IV.I.1.3. <i>T. urticae</i> egg stage .....	47
IV.1.1.4. Predators .....	51
IV.1.1.4.1. <i>Phytoseiulus persimilis</i> .....	51
IV.1.1.4.2. <i>Scolothrips longicornis</i> .....	55
IV.1.1.5. The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> and its predators on <i>F. ananassa</i> cultivars.....	59
IV.1.1.6. The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> and its predators on <i>F. ananassa</i> cultivars.....	59
IV.I.2. Eggplant cultivars .....	62

IV.I.2.A. Winter growing season .....	62
IV.I.2.A.1. <i>T. urticae</i> adult stage .....	62
IV.I.2.A.2. <i>T. urticae</i> nymphal stage .....	66
IV.I.2.A.3. <i>T. urticae</i> egg stage .....	70
IV.I.2.A.4. Predators .....	74
IV.I.2.A.4.1. <i>Phytoseiulus persimilis</i> .....	74
IV.I.2.A.4.2. <i>Scolothrips longicornis</i> .....	78
IV.I.2.A.5. The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> and its predators on <i>S. melongena</i> cultivars during the winter growing season	82
IV.I.2.A.6. The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> and its predators on <i>S. melongena</i> cultivars during the winter growing season.....	82
IV.I.2.B. Eggplant cultivars for summer growing season .....	85
IV.I.2.B.1. <i>T. urticae</i> adult stage .....	85
IV.I.2.B.2. <i>T. urticae</i> nymphal stage.....	89
IV.I.2.B.3. <i>T. urticae</i> egg stage.....	93
IV.I.2.B.4. The correlation coefficient between the temperature and different stages of <i>T. urticae</i> on <i>S. melongena</i> cultivars during the summer growing season .....	97
IV.I.2.B.5. The correlation coefficient between the relative humidity and different stages of <i>T. urticae</i> on <i>S. melongena</i> cultivars during the summer growing season.....	97
IV.I.3. Tomato cultivars .....	99
IV.I.3.A. Winter growing season .....	99
IV.I.3.A.1. <i>T. urticae</i> adult stage .....	99
IV.I.3.A.2. <i>T. urticae</i> nymphal stage .....	103
IV.I.3.A.3. <i>T. urticae</i> egg stage .....	107
IV.I.3.A.4. Predators .....	111
IV.I.3.A.4.1. <i>Phytoseiulus persimilis</i> .....	111
IV.I.3.A.4.2. <i>Scolothrips longicornis</i> .....	115
IV.I.3.A.5. The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> and its predators on <i>S. lycopersicum</i> cultivars during winter growing season.....	119
IV.I.3.A.6. The correlation coefficient between the relative humidity and different stages of <i>T. urticae</i> and its predators on <i>S. lycopersicum</i> cultivars during winter growing season	119
IV.I.3.B. Tomato cultivars of the summer growing season.....	121

IV.I.3.B.1. <i>T. urticae</i> adult stage .....	121
IV.I.3.B.2. <i>T. urticae</i> nymphal stage .....	125
IV.I.3.B.3. <i>T. urticae</i> egg stage .....	129
IV.1.3.B.4. The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> on <i>S. lycopersicum</i> cultivars during the summer growing season.....	133
IV.1.3.B.5. The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> on <i>S. lycopersicum</i> cultivars during the summer growing season.....	133
IV.II. Induced host plants resistance .....	135
IV.II.1. Foliar application of different Silicon forms .....	135
IV.II.1.1. Strawberry Cultivars .....	135
IV.II.1.1.a. cv. Crystal .....	135
IV.II.1.1.b. cv. Tudla .....	139
IV.II.1.2. Eggplant Cultivars .....	143
IV.II.1.2.a. cv. Anamour .....	143
IV.II.1.2.b. cv. Darcon .....	147
IV.II.2. Physiological analysis of plant leaves .....	151
IV.II.2.1. Strawberry cv. Tudla .....	151
IV.II.2.1.1. Si leaf content .....	151
IV.II.2.1.2. The activity of antioxidant enzyme, total phenol and total protein contents...	151
IV.II.2.2. Eggplant cv. Anamour .....	153
IV.II.2.2.1. Si leaf content .....	153
IV.II.2.2.2. The activity of antioxidant enzyme, total phenol and total protein contents	153
<b>V. Discussion .....</b>	<b>162</b>
V.1. Effects of host plants cultivars on the seasonal dynamics of <i>T. urticae</i> Koch and its predators.....	163
V.2. Induction of host plant resistance using two-silicon forms against <i>T. urticae</i> infestation.....	171
<b>VI. Summary .....</b>	<b>175</b>
VI.A. Effects of host plants cultivars on the seasonal dynamics of <i>T. urticae</i> and its predators	176
VI.B. Induction of host plant resistance using two silicon forms against <i>T. urticae</i> infestation	179
<b>VII. References .....</b>	<b>182</b>
<b>VII. Arabic Summary .....</b>	

## List of Tables

Table (1): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> adult stage on <i>F. ananassa</i> cultivars during the growing season extending from November (2018) to May (2019).	40
Table (2): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> nymph stage on <i>F. ananassa</i> cultivars during the growing season extending from November (2018) to May (2019).	44
Table (3): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> eggs on <i>F. ananassa</i> cultivars during the growing season extending from November (2018) to May (2019).	48
Table (4): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>P. persimilis</i> on <i>F. ananassa</i> cultivars during the growing season extending from November (2018) to May (2019).	52
Table (5): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>S. longicornis</i> on <i>F. ananassa</i> cultivars during the growing season extending from November (2018) to May (2019).	56
Table (6): The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> and its predators on <i>F. ananassa</i> cultivars.	60
Table (7): The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> and its predators on <i>F. ananassa</i> cultivars.	61
Table (8): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> adult stage on <i>S. melongena</i> cultivars during the winter growing season extending from October (2018) to April (2019).	63
Table (9): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> nymph stage on <i>S. melongena</i> cultivars during the winter growing season extending from October (2018) to April (2019).	67
Table (10): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> egg stage on <i>S. melongena</i> cultivars during the winter growing season extending from October (2018) to April (2019).	71
Table (11): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>P. persimilis</i> on <i>S. melongena</i> cultivars during the winter growing season extending from October (2018) to April (2019).	75
Table (12): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>S. longicornis</i> on <i>S. melongena</i> cultivars during the winter growing season extending from October (2018) to April (2019).	79

Table (13): The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> and its predators on <i>S. melongena</i> cultivars during the winter growing season.	83
Table (14): The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> and its predators on <i>S. melongena</i> cultivars during the winter growing season.	84
Table (15): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> adult stage on <i>S. melongena</i> cultivars during the summer growing season extending from May to September (2019).	86
Table (16): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> nymph stage on <i>S. melongena</i> cultivars during the summer growing season extending from May to September (2019).	90
Table (17): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> egg stage on <i>S. melongena</i> cultivars during the summer growing season extending from May to September (2019).	94
Table (18): The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> on <i>S. melongena</i> cultivars during the summer growing season (2019).	98
Table (19): The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> on <i>S. melongena</i> cultivars during the growing summer season (2019).	98
Table (20): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> adult stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	100
Table (21): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> nymph stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	104
Table (22): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> egg stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	108
Table (23): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> predators <i>P. persimilis</i> of <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	112
Table (24): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> predators <i>S. longicornis</i> on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	116

Table (25): The correlation coefficient between the temperature and different <i>T. urticae</i> stages and its predators on <i>S. lycopersicum</i> cultivars during the winter growing season.	120
Table (26): The correlation coefficient between the relative humidity and different <i>T. urticae</i> stages and its predators on <i>S. lycopersicum</i> cultivars during the winter growing season.	120
Table (27): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> adult stage on <i>S. lycopersicum</i> cultivars during the summer growing season extending from May to September (2019).	122
Table (28): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> nymph on <i>S. lycopersicum</i> cultivars during the summer growing season extending from May to September (2019).	126
Table (29): Mean abundance ( $\pm$ SE) and monthly prevalence of <i>T. urticae</i> egg stage on <i>S. lycopersicum</i> cultivars during the summer growing season extending from May to September (2019).	130
Table (30): The correlation coefficient between the temperature and the different stages of <i>T. urticae</i> on <i>S. lycopersicum</i> cultivars during the summer growing season.	134
Table (31): The correlation coefficient between the relative humidity and the different stages of <i>T. urticae</i> on <i>S. lycopersicum</i> cultivars during the summer growing season.	134
Table (32): Mean number ( $\pm$ SE) of <i>T. urticae</i> adult stage on cv. Crystal at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	136
Table (33): Mean number ( $\pm$ SE) of <i>T. urticae</i> nymphal stage on cv. Crystal at 10, 20, 30, 40, and 50 days post-treatment by OSAB and Silica K.	137
Table (34): Mean number ( $\pm$ SE) of <i>T. urticae</i> egg stage on cv. Crystal at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	138
Table (35): Mean number ( $\pm$ SE) of <i>T. urticae</i> adult stage on cv. Tudla at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	140
Table (36): Mean number ( $\pm$ SE) of <i>T. urticae</i> nymphal stage on cv. Tudla at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	141
Table (37): Mean number ( $\pm$ SE) of <i>T. urticae</i> egg stage on cv. Tudla at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	142

Table (38): Mean number ( $\pm$ SE) of <i>T. urticae</i> adult stage on cv. Anamour at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	144
Table (39): Mean number ( $\pm$ SE) of <i>T. urticae</i> nymphal stage on cv. Anamour at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	145
Table (40): Mean number ( $\pm$ SE) of <i>T. urticae</i> egg stage on cv. Anamour at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	146
Table (41): Mean number ( $\pm$ SE) of <i>T. urticae</i> adult stage on cv. Darcon at 10, 20, 30, 40 and 50 days post-treatment by OSAB and Silica K.	148
Table (42): Mean number ( $\pm$ SE) of <i>T. urticae</i> nymphal stage on cv. Darcon at 10, 20, 30, 40, and 50 days post-treatment by OSAB and Silica K.	149
Table (43): Mean number ( $\pm$ SE) of <i>T. urticae</i> egg stage on cv. Darcon at 10, 20, 30, 40, and 50 days post-treatment by OSAB and Silica K.	150
Table (44): Effect of foliar spray with OSAB and Silica K on Si leaf content, antioxidant enzymes activity, total protein, and total phenol contents in strawberry cv. Tudla.	156
Table (45): Effect of foliar spray with OSAB and Silica K on Si leaf content, antioxidant enzymes activity, total protein, and total phenol contents in eggplant cv. Anamour.	157

## List of Figures

- Fig. (1): Mean abundance ( $\pm$ SE) of *T. urticae* adult stage on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٤1
- Fig. (2): Monthly prevalence of *T. urticae* adult stage on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٤2
- Fig. (3): Mean abundance ( $\pm$ SE) of *T. urticae* nymphal stage on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٤5
- Fig. (4): Monthly prevalence of *T. urticae* nymphal stage on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٤6
- Fig. (5): Mean abundance ( $\pm$ SE) of *T. urticae* egg stage on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٥٠
- Fig. (6): Monthly prevalence of *T. urticae* egg stage on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). 49
- Fig. (7): Mean abundance ( $\pm$ SE) of *P. persimilis* on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). 53
- Fig. (8): Monthly prevalence of *P. persimilis* on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٥4
- Fig. (9): Mean abundance ( $\pm$ SE) of *S. longicornis* on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٥7
- Fig. (10): Monthly prevalence of *S. longicornis* on *F. ananassa* cultivars during the growing season extending from November (2018) to May (2019). ٥8
- Fig. (11): Mean abundance ( $\pm$ SE) of *T. urticae* adult stage on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). ٦4
- Fig. (12): Monthly prevalence of *T. urticae* adult stage on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). ٦5

- Fig. (13): Mean abundance ( $\pm$ SE) of *T. urticae* nymphal stage on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 78
- Fig. (14): Monthly prevalence of *T. urticae* nymphal stage on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 69
- Fig. (15): Mean abundance ( $\pm$ SE) of *T. urticae* egg stage on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 72
- Fig. (16): Monthly prevalence of *T. urticae* egg stage on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 73
- Fig. (17): Mean abundance ( $\pm$ SE) of *P. persimilis* on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 76
- Fig. (18): Monthly prevalence of *P. persimilis* on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 77
- Fig. (19): Mean abundance ( $\pm$ SE) of *S. longicornis* on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 80
- Fig. (20): Monthly prevalence of *S. longicornis* on *S. melongena* cultivars during the winter growing season extending from October (2018) to April (2019). 81
- Fig. (21): Mean abundance ( $\pm$ SE) of *T. urticae* adult stage on *S. melongena* cultivars during the summer growing season extending from May to September (2019). 87
- Fig. (22): Monthly prevalence of *T. urticae* adult stage on *S. melongena* cultivars during the summer growing season extending from May to September (2019). 88
- Fig. (23): Mean abundance ( $\pm$ SE) of *T. urticae* nymphal stage on *S. melongena* cultivars during the summer growing season extending from May to September (2019). 91
- Fig. (24): Monthly prevalence of *T. urticae* nymphal stage on *S. melongena* cultivars during the summer growing season extending from May to September (2019). 92
- Fig. (25): Mean abundance ( $\pm$ SE) of *T. urticae* egg stage on *S. melongena* cultivars during the summer growing season extending from May to September (2019). 95

Fig. (26): Monthly prevalence of <i>T. urticae</i> egg stage on <i>S. melongena</i> cultivars during the summer growing season extending from May to September (2019).	96
Fig. (27): Mean abundance ( $\pm$ SE) of <i>T. urticae</i> adult stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	101
Fig. (28): Monthly prevalence of <i>T. urticae</i> adult stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	102
Fig. (29): Mean abundance ( $\pm$ SE) of <i>T. urticae</i> nymphal stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	105
Fig. (30): Monthly prevalence of <i>T. urticae</i> nymphal stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	106
Fig. (31): Mean abundance ( $\pm$ SE) of <i>T. urticae</i> egg stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	109
Fig. (32): Monthly prevalence of <i>T. urticae</i> egg stage on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	110
Fig. (33): Mean abundance ( $\pm$ SE) of <i>P. persimilis</i> on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	113
Fig. (34): Monthly prevalence of <i>P. persimilis</i> on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	114
Fig. (35): Mean abundance ( $\pm$ SE) of <i>S. longicornis</i> on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	117
Fig. (36): Monthly prevalence of <i>S. longicornis</i> on <i>S. lycopersicum</i> cultivars during the winter growing season extending from October (2018) to April (2019).	118
Fig. (37): Mean abundance ( $\pm$ SE) of <i>T. urticae</i> adult stage on <i>S. lycopersicum</i> cultivars during the summer growing season extending from May to September (2019).	123
Fig. (38): Monthly prevalence of <i>T. urticae</i> adult stage on <i>S. lycopersicum</i> cultivars during the summer growing season extending from May to September (2019).	124

- Fig. (39): Mean abundance ( $\pm$ SE) of *T. urticae* nymphal stage on *S. lycopersicum* cultivars during the summer growing season extending from May to September (2019). 127
- Fig. (40): Monthly prevalence of *T. urticae* nymphal stage on *S. lycopersicum* cultivars during the summer growing season extending from May to September (2019). 128
- Fig. (41): Mean abundance ( $\pm$ SE) of *T. urticae* egg on *S. lycopersicum* cultivars during the summer growing season extending from May to September (2019). 131
- Fig. (42): Monthly prevalence of *T. urticae* egg stage on *S. lycopersicum* cultivars during the summer growing season extending from May to September (2019). 132
- Fig. (43): Relationship between *T. urticae* population and antioxidant enzymes activity, total protein, and phenol contents in strawberry cv. Tudla treated with OSAB and Silica K. 158
- Fig. (44): The linear regression between Si leave content and TSSM average number, activities of CAT, POD, and total protein contents in OSAB and silica K-treated plants. 159
- Fig. (45): Relationship between *T. urticae* population and antioxidant enzymes activity, total protein, and total phenol contents in eggplant cv. Anamour treated with OSAB and silica K. 160
- Fig. (46): The linear regression between Si leave content and TSSM average number, activities of CAT, PPO, and total protein contents in OSAB and silica K-treated plants. 161