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EFFECT OF DIFFERENT MANGO CULTIVARS ON THE POPULATION DENSITY OF *Aulacaspis tubercularis* (NEWSTEAD) (HEMIPTERA: DIASPIDIDAE) IN EGYPT

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ABSTRACT: The present investigation aimed to study the effects of some mango varieties (Langra, Zebda and Ewais) on the population density of *A. tubercularis* during two seasons from January 2022 to December 2023 in response to the climatic factors on mango trees at the horticulture research station in Qasasin, Ismailia Governorate. The obtained results showed pronounced difference in the population density of this insect pest on the tested varieties. During the first season, the activity periods of *A. tubercularis* varied among mango varieties whereas, Ewais variety had five peaks, Zebda variety showed four peaks and Langra variety displayed three peaks of activity. In the second season, the population of *A. tubercularis* on Ewais, Zebda and Langra mango varieties had three peaks of activity. Mango varieties exhibited different susceptibility to the aforementioned insect pest whereas, Langra variety was the most susceptible to *A. tubercularis*, with the highest population density followed by Ewais while Zebda variety was showed as a resistant variety to infestation of this pest, with the smallest population through two seasons. Therefore, it could be recommended that susceptibility of plant varieties should be used as an item in the integrated pest management (IPM) program.

Key words: Susceptibility, mango cultivars, *Aulacaspis tubercularis*.

INTRODUCTION

Mango tree, *Mangifera indica* L. (Anacardiaceae) considered as one of the most important fruit crops and where it has been considered as the king of fruits in Egypt. Egyptian mango varieties play an important role in the agricultural exports because of its rich flavor and taste. Among many species which infesting mango trees in Egypt, the white mango scale, *A. tubercularis* (Newstead) (Hemiptera: Diaspididae) which considered as one of the most dangerous species of scale insects that attack mango trees (**Nabil *et al*., 2012; Bakry and Abdel-Baky, 2020; Bakry and Dahi, 2020; Ata, 2024**).

The detrimental impact of this insect on plant health is multifaceted, causing extensive damage to shoots, twigs, leaves, branches and fruits. Through their sap-sucking activity, the pest induces a range of symptoms, including deformations, defoliation, twigs desiccation and dieback, as well as impaired flowering and twig mortality due to the secretion of the toxic saliva. Infestation of this insect is characterized by appearance of pink blemishes surrounding the feeding areas of the scale (**Abo-Shanab, 2012; El-Zoghoby and Bakry, 2019; Abd El-Rahman *et al*., 2019**).

Furthermore, this insect secretes copious amounts of honeydew that provided an ideal substrate for the growth of sooty mold fungi. The subsequent development of these fungi can significantly decrease the photosynthesis qualities of the plant (**Bakr *et al*., 2009**).

Resistance of plants to insect pests is an essential component of Integrated Pest Management (IPM) approaches. A broad spectrum of biochemical substances, including inorganic compounds, primary and secondary metabolites, and intermediary products, contribute to plant

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resistance against a wide range of insect pests. Additionally, the nutritional insufficiencies of host plants can also act as a formidable barrier to insect pest infestation (**Dhaliwal and Singh, 2004**).

Moreover, the host plant's deficiency in specific nutritional elements essential for insect survival can contribute to its apparent resistance. Furthermore, there are numerous factors, which have affected on the feeding of the scales (**Bakry *et al*., 2020**). The inherent resistance of host crops to insects due to their unique morphological, biochemical and physiological characteristics that confer protection against insect infestations. Host plant resistance refers to the unique combination of characteristics that allow a plant to resist, tolerate or recover from insect infestation, thereby causing greater damage to other plants of the same species under similar conditions (**Padmavathi and Padmaja, 2022**).

Therefore, the scope of this study included the seasonal abundance of the dominant species of *A. tubercularis* on three mango varieties as well as to determine the effect of these varieties on the attractive of this insect pest during the two seasons (2022 and 2023).

MATERIALS AND METHODS

Study Area

This investigation was conducted from January 2022 to December 2023 at the horticulture research station in Qasasin, Ismailia Governorate, to study the seasonal fluctuations of mango scale insect species on Langra, Zebda and Ewais mango varieties and estimated the resistance variety for the infestation of this insect pest.

Sampling Methods

For this investigation, five mango trees of each variety (Langra, Ewais and Zebda) were systematically selected, based on uniformity in age, height and growth patterns. Throughout the study period, these trees were subsequently maintained under standard agricultural practices, without the application of chemical pesticides to ensure unbiased observations. The leaf samples were picked up at random bimonthly during two successive seasons 2022 and 2023. Sample size of 100 leaves were collected from different sides (north, south, east and west). Upon collection, the leaf samples were carefully packed in polyethylene bag and transferred to the laboratory for inspection by using a binocular microscope.

Insects on each surface of the mango tree leaves were systematically counted and categorized by stage of development (nymphs and adults). The resulting data were recorded in conjunction with the corresponding inspection dates and expressed as mean number of individuals per sample ± standard error (SE) to estimate the population density of insect. Subsequent analysis of data was conducted monthly to facilitate discussion and interpretation of temporal trends.

Meteorological Data

For clarifying the effect of certain climate factors as mean temperature, relative humidity, sunshine duration and solar radiation on the population of studied insect. Monthly means of these factors were provided by the Central Laboratory for Agricultural Climate, Agricultural Research Centre, Egyptian Ministry of Agriculture and Land Reclamation.

Statistical Analysis

The impact of the tested factors, including temperature (°C), relative humidity (%), sunshine duration (Hrs) and solar radiation (MJ/m^2/day) on the population abundance of *A. tubercularis* was analyzed using a one-way analysis of variance (ANOVA) in the SPSS system. The data obtained were statistically analyzed by using the analysis of variance. The means were compared according to Least Significant Difference test (LSD) at the 5% level to determine the significance among means of varieties, by computer (**COSTAT, 2005**).

RESULTS AND DISCUSSION

Population Density of *A. tubercularis* on Certain Mango Varieties

The data presented in Figs. 1 and 2 revealed that the total population of *A. tubercularis* through three selected mango varieties, specifically

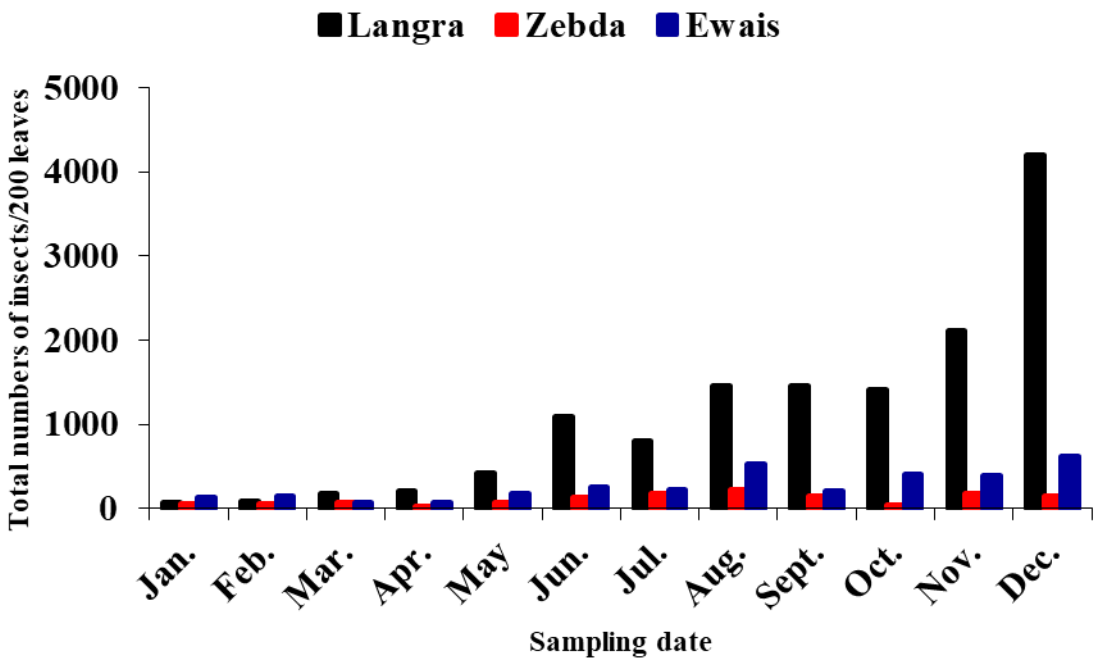

Fig. 1.Population density of *Aulacaspis tubercularis* (Newstead) on three mango varieties during the first season 2022 at the horticulture research station in Qasasin, Ismailia Governorate

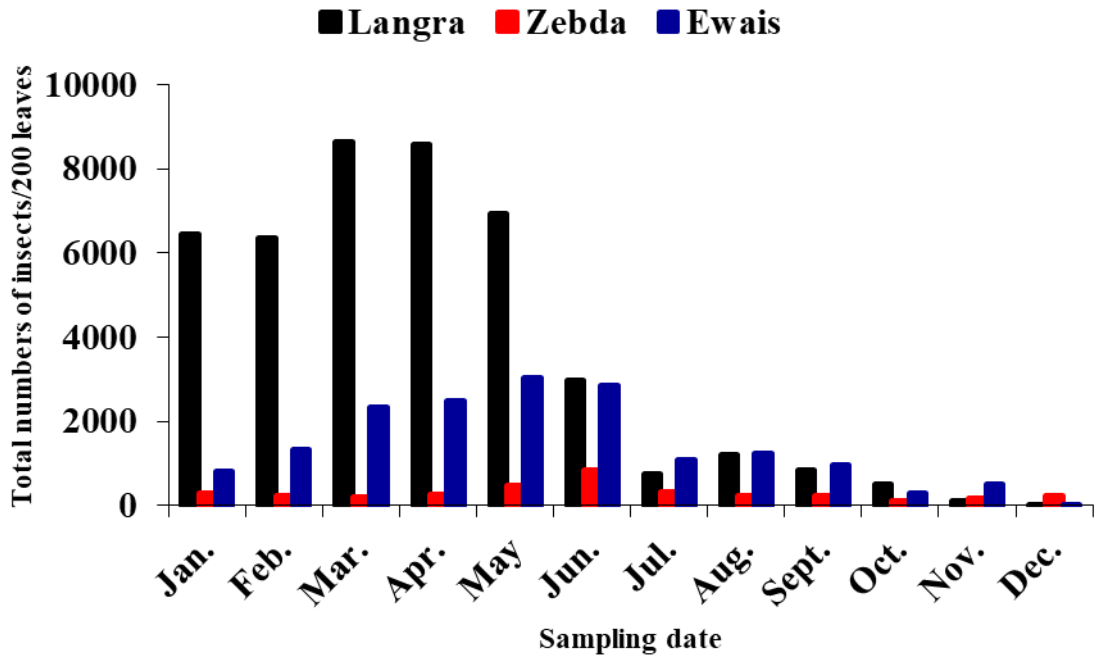

Fig. 2. Population density of *Aulacaspis tubercularis* (Newstead) on three mango varieties during the second season 2023 at the horticulture research station in Qasasin, Ismailia Governorate

Langra, Zebda and Ewais. During the first season, the activity periods of *A. tubercularis* varied among mango varieties where Ewais variety had five peaks, Zebda variety showed four peaks and Langra variety displayed three peaks of activity. The population of *A. tubercularis* on Ewais variety reached its maximum in December with 617 individuals per 200 leaves, and its minimum in February with 152 individuals/200 leaves. Moreover, on Zebda variety, the highest population of *A. tubercularis* was observed in August with 232 individuals per 200 leaves, while the lowest population was recorded in January with 60 individuals/200 leaves. Furthermore, Langra variety exhibited their maximum *A. tubercularis* population in June represented by 1092 individuals/200 leaves, whereas the minimum population was observed in December with 4198 individuals / 200 leaves. In the second season, the population of *A. tubercularis* on Ewais, Zebda and Langra mango varieties had three peaks of activity. On the Ewais variety the highest population recorded in May represented by 3035 individuals per 200 leaves and the lowest level in November with 525 individuals per 200 leaves. Moreover, on Zebda variety the highest population was recorded in June represented by 840 individuals/ 200 leaves, whereas the smallest population was observed in December with 249 individuals per 200 leaves. Additionally, Langra variety showed the highest population density in March with 8660 individuals per 200 leaves and the lowest density in August with 1225 individuals per 200 leaves. The results from the first season are in agreement with **Abo-Shanab (2012) and Bakry and El-Zoghby (2019)**, who reported that this insect had four peaks whereas this insect had four peaks on Zebda variety.

Effect of Certain Mango Varieties to Infestation by *A. tubercularis*

The data presented in Tables 1, 2 and 3 illustrated that the mean population densities of *A. tubercularis* stages (nymphs, adult females and total individuals) per sample through the three mango varieties. Langra variety had the highest infestation rate of *A. tubercularis*, with mean numbers of (32 ± 2.5809, 192.47 ± 10.592 and 225.07 ± 10.95 individuals per sample) and (104.27 ± 8.3069, 619.82 ± 28.952 and 724.08 ± 21.816 individuals per sample) for nymphs, adult females and total individuals through the two seasons, respectively. Conversely, Zebda variety showed the lowest numbers of this insect, with an average of (3.9998 ± 0.5756, 18.683±1.2935 and 23.106 ± 1.2074 individuals per sample) and (12.5 ± 0.9087, 49.016 ± 2.1372 and 59.85 ± 3.4989 individuals per sample) of aforementioned individuals through the two seasons, respectively. Ewais variety proved to be moderately susceptible to this insect, with an average of (8.3998 ± 0.5518, 45.716 ± 2.2849 and 54.116 ± 2.7796 individuals per sample) and (48.083 ± 1.7809, 235.22 ± 6.3085 and 283.3 ± 7.2329 individuals per sample) of aforementioned individuals per sample during the two seasons, respectively.

Statistically, highly significant differences were observed statistically in the levels of infestation by *A. tubercularis* nymphs, adult females and total mixed population among the three tested mango varieties, as indicated by L.S.D. values of (5.4184, 17.704 and 17.642) and (15.325, 58.103 and 47.031) during the two seasons, respectively. The highest mean numbers of *A. tubercularis* nymphs, adult females and total were recorded in the second season (54.95 ± 4.6992, 301.35 ± 17.817 and 355.74 ± 14.422 individuals per sample) as compared the first year (14.8±1.6615, 85.622 ± 5.4287 and 100.76 ± 5.4098 individuals per sample), respectively.

Also, coefficient of variance (C.V.%) between different mango varieties of *A. tubercularis* nymphs, adult females and total were recorded (25.1, 14.18 and 12.01%) in the first season and (19.12, 13.22 and 9.06%) in the second season. An analysis of the relative variation (R.V.%) in *A. tubercularis* population densities on different mango varieties indicated that the R.V.% values for nymphs, adult females and total population were (11.226, 6.34 and 5.369%) in the first season and (8.552, 5.912 and 4.054%) in the second season.

In general, the results indicated that Langra variety was the most preferred host for *A. tubercularis*, with significantly higher population densities of nymphs, adult females and total mixed population, followed by Ewais, while Zebda variety was the least preferred variety for this insect during the two seasons. These results

Table 1. Mean numbers of *Aulacaspis tubercularis* nymphs population on three mango varieties during the seasons of 2022 and 2023

Mango varieties	Average no. of nymph individuals of insect per sample ± S.E	
	First year (2022)	Second year (2023)
Langra	32 ± 2.5809 A	104.27 ± 8.3069 A
Ewais	8.3998 ± 0.5518 B	48.083 ± 1.7809 B
Zebda	3.9998 ± 0.5756 B	12.500 ± 0.9087 C
General mean	14.8 ± 1.6615	54.950 ± 4.6992
C.V. %	25.10	19.12
R.V.%	11.226	8.552
L.S.D. at 0.05 between varieties	5.4184 **	15.325 **

Table 2. Mean numbers of *Aulacaspis tubercularis* adult females on three mango varieties during the seasons of 2022 and 2023

Mango varieties	Average no. of adult female individuals of insect per sample ± S.E	
	First year (2022)	Second year (2023)
Langra	192.47 ± 10.592 A	619.82 ± 28.952 A
Ewais	45.716 ± 2.2849 B	235.22 ± 6.3085 B
Zebda	18.683 ± 1.2935 C	49.016 ± 2.1372 C
General mean	85.622 ± 5.4287	301.35 ± 17.817
C.V. %	14.18	13.22
R.V.%	6.340	5.912
L.S.D. at 0.05 between varieties	17.704 **	58.103 **

Table 3. Mean numbers of *Aulacaspis tubercularis* total population on three mango varieties during the seasons of 2022 and 2023

Mango varieties	Average no. of total population individuals of insect per sample ± S.E	
	First year (2022)	Second year (2023)
Langra	225.07 ± 10.950 A	724.08 ± 21.816 A
Ewais	54.116 ± 2.7796 B	283.30 ± 7.2329 B
Zebda	23.106 ± 1.2074 C	59.850 ± 3.4989 C
General mean	100.76 ± 5.4098	355.74 ± 14.422
C.V. %	12.01	9.06
R.V.%	5.369	4.054
L.S.D. at 0.05 between varieties	17.642 **	47.031 **

are in agreement with **Bakry and Abdel-Baky (2020)**, who reported that Ewais mango variety was rated as highly susceptible (H.S.) to infestation by the total population density of *A. tubercularis*, followed by Zebda.

In a related study, **Salem (1994)** in Egypt, who studied that the susceptibility of five mango varieties to infestation with three species of scale insects, *Insulaspis pallidula* (Green) (Hemiptera: Diaspididae), *Kilifia acuminata* (Signoret) (Homoptera: Coccidae) and *Parlatoria oleae* (Colvee) (Homoptera: Diaspididae) and showed that Zebda and Hindy varieties were highly susceptible to infestation, while Dabsha exhibited moderate susceptibility and Timour and Alphonso displayed high resistance. **Selim (2002)** in Egypt, who researched that the susceptibility of five mango varieties to two armored scale insect pests, *Insulaspis pallidula* and *Aonidiella aurantii*, revealed that *I. pallidula* exhibited a higher infestation rate across all varieties compared to *A. aurantia*. On the other hand, the variety Hindy was found to be the most susceptible to infestation by both scale insects, followed in decreasing order of susceptibility by Mabrouka, Kobania, and Taimour, with Dabsha being the least susceptible variety. **Bakry (2009)** in Egypt, who investigated that the variability in infestation levels of four mango varieties with two armored scale insects, *I. pallidula* and *A. aurantia* and indicated that a higher population density of *A. aurantii* compared to *I. pallidula* and revealed that grafted Balady was the most susceptible variety to infestation by both scale insects, followed by Hindy and Goleck, while seedy Balady exhibited the lowest infestation levels.

The Effect of Climate Factors of Certain Mango Varieties to Infestation by *A. tubercularis*

Data illustrated in Table 4 showed that in the second season, the relative humidity had a negative significant effect while solar radiation had a positive significant effect whereas, sunshine duration had a positive highly significant effect on Ewais variety, where r = -0.640*, 0.648* and 0.718** respectively. Sunshine duration had a positive significant effect on Zebda variety, where r = 0.627*.

Explained Variance (E.V.%)

Data in Tables 4 showed clearly that the aforementioned climatic factors affected on Langra, Ewais and Zebda mango varieties by 66.8 and 91.9, 72.4 and 89.8, 46.2 and 77.7% during the two studied seasons, respectively. **Haddad and Sadoudi (2017)**, reported that the explained variance for females was high dominance (76.3%).

From the above-mentioned results, it was found that the population of tested insect was affected by the studied weather factors, as it had a high impact in the second season compared to the first one. However, there are other factors such as rainfall and wind speed need to be studied further. These results are in disagreement with this obtained by **Nabil *et al.* (2019)**, who found that the solar radiation had negative effect on Total population numbers. **Chouih *et al.* (2011)**, who mentioned that the weathers had a big influence for the spread and infestation of the scale insect which preferred high humidity and low mild temperature and light. **Moustafa (2012)**, showed that the correlation between the number of pest and its parasitoid and the maximum and minimum temperature and relative humidity were significant or highly significant. **Nabil and Shahein (2014)**, mentioned that there was strong correlation between some climatic factors and scale insect population and their parasitoids on navel orange trees. **Zaabta (2016)**, studied the natural mortality of these scale insects due to climatic factors for young stages and physiological for adult females.

The four weather factors had a highly effect of *A. tubercularis* on Langra by (66.8 and 91.9%) (the highest susceptible variety). As well as the impact aforementioned factors was less on Zebda (the lowest susceptible variety) by (46.2 and 77.7%) during the two seasons, respectively.

In conclusion, the significant impact of host plant selection on insect development, suggesting that opting for the most suitable mango variety can be a valuable strategy for minimizing insect infestation and enhancing integrated pest management (IPM) practices. The level of infestation on various mango varieties exhibited variation depending on the specific insect species involved.

Table 4. Statistical analysis based on correlation coefficient and explained variance indicating the effect of climatic factors on total numbers of *Aulacaspis tubercularis* (Newstead) on three mango varieties at the horticulture research station in Qasasin, Ismailia Governorate, during the two seasons (2022 and 2023)

Mango varieties	2022					2023				
	r1	r2	r3	r4	E.V(%)	r1	r2	r3	r4	E.V(%)
Langra	0.137	0.174	0.370	-0.320	66.8%	-0.501	-0.031	0.114	0.073	91.9%
Ewais	0.270	0.097	-0.262	-0.194	72.4%	0.156	-0.640*	0.718**	0.648*	89.8 %
Zebda	0.542	-0.271	0.198	0.283	46.2%	0.307	-0.517	0.627*	0.520	77.7 %

(r*) with one star indicates that the correlation coefficient is significant and with 2 stars (r**) indicates highly significant correlation at 0.01% level of probability.
r_1= Simple correlation coefficient between mean of temperature and the total numbers of insect.
r_2= Simple correlation coefficient between mean of relative humidity and the total numbers of insect.
r_3 =Simple correlation coefficient between mean of sunshine duration and the total numbers of insect.
r_4 =Simple correlation coefficient between mean of solar radiation and the total numbers of insect.

Furthermore, the observed variations in population density of *A. tubercularis* on different mango varieties can be attributed to a combination of factors, including environmental conditions (temperature, relative humidity, sunshine duration and solar radiation) specific to each mango variety.

REFERENCES

Abd El-Rahman, A.S.A., M.M.S. Bakry and I.R.M. El-Zoghby (2019). Flowering, yield and fruit quality of Balady mango seedling trees as influenced by *Parlatoria oleae* (Colvee) infestation rate. Int. J. Hort., Agric. and Food Sci., 3 (2): 102-111.

Abo-Shanab, A.S.H. (2012). Suppression of white mango scale, *Aulacaspis tubercularis* (Hemiptera: Diaspididae) on mango trees in El-Beheira Governorate, Egypt. Egypt. Acad. J. Biol. Sci., 5(3): 43-50.

Ata, T.E. (2024). Population estimates of the white mango scale insect Aulacaspis tubercularis (Hemiptera: Diaspididae) on mango trees in relation to biotic and abiotic factors in Damietta Governorate. Al-Azhar J. Agric. Res., 49 (2): 89-98.

Bakr, R.F.A., R.M. Badawy, S.F. Mousa, L. S. Hamooda and S.A. Atteia (2009). Ecological and taxonomic studies on the scale insects that infest mango trees at Qaliobiya Governorate. Egypt. Acad. J. Biol. Sci., 2 (2): 69- 89.

Bakry, M.M.S. (2009). Studies on some scale insects and mealybugs infesting mango trees in Qena Governorate. M.Sc. Thesis, Fac. Agric. Minia, Univ, 204 pp.

Bakry, M.M.S. and I.R.M. El-Zoghby (2019). Effect of climatic weather factors, physical and chemical components of mango leaves on the population abundance of *Aulacaspis tubercularis* (New stead). Int. J. Agric. Innovations and Res., 8 (1): 95-114.

Bakry, M.M.S. and H.F. Dahi (2020). Performance of certain mango varieties to infestation with the plum scale insect, *Parlatoria oleae* (Colvee) (Hemiptera: Diaspididae) in Luxor Governorate, Egypt. Egypt. Acad. J. Biol. Sci., 13(3): 207-217.

Bakry, M.M.S. and N.F. Abdel-Baky (2020). Examining the spatial distribution pattern and optimum sample size for monitoring of the white mango scale insect, *Aulacaspis tubercularis* (Newstead) (Hemiptera:

Diaspididae) on certain mango cultivars. Int. J. Hort., Agric. and Food Sci., 4 (3): 91-107.

Bakry, M.M.S., L.H.Y. Mohamed and Sh.Y. E. Shakal (2020). Host preference of certain mango varieties to infestation with the mango shield scale, *Milviscutulus mangiferae* (Green) (Hemiptera: Coccidae) in Ismailia Governorate, Egypt. Acta Entomol. and Zool., 1 (2): 10-16.

Chouih, S., A.B. Guendouz and H. Saighi (2011). Ecology's study of the interactions between black scale of orange tree *Parlatoria zizyphi* Lucas 1893 (Homoptera; Diaspididae) and its host plant mandarin tree (*Citrus deliciosa*) in Mitidja. Integrated Control in Citrus Fruit Crops IOBC/wprs Bull., 62: 135.

COSTAT (2005). Version 6.311, copyright©, cohort software, 798 lighthouse Ave. pMB 320, Monterey, CA, 93940, USA.

Dhaliwal G.S. and R. Singh (2004). Host plant resistance to insects: concepts and applications. New Delhi, Panima Pub, 578.

El-Zoghby, I.R.M. and M.M.S. Bakry (2019). Prediction of *Aulacaspis Tubercularis* Newstead (Hemiptera: Diaspididae) populations using RCP scenarios in Luxor Governorate, Egypt. World J. Agric. and Soil Sci., 2(5): 1-13.

Haddad, N. and A.A.D. Sadoudi (2017). Diversity, structure and composition of scale insects populations (Homoptera: Coccoidea) on citrus in Kabylia, Algeria. Int. J. Res. Appl., Nat. and Social Sci., 5 (4): 63-76.

Moustafa, M. (2012). Scale insects (Coccoidae: Hemiptera) infested citrus trees and their natural enemies, with a key of these pests in Egypt. Egypt. Acad. J. Biol. Sci., 5 (1): 1-23.

Nabil, H.A. and A.A. Shahein (2014). Generations, preferable leaf surface and horizontal distribution of *Aonidiella aurantii* (Maskell) on navel orange trees and its associated parasitoid, Aphytis lingnanensis Compere in Ismailia Governorate, Egypt. Menufiya J. Agric. Res., 39 (6): 1943-1953.

Nabil, H.A., A.A. Shahein, K.A.A. Hammad and A.S. Hassan (2012). Ecological studies of *Aulacaspis tubercularis* (Diaspididae: Hemiptera) and its natural enemies infesting mango trees in Sharkia Governorate, Egypt. Egypt. Acad. J. Biol. Sci., 5(3): 9-17.

Nabil, H.A., O.I.M. Hegab and M.A.M. Hegab (2019). Seasonal Occurrence of *Parlatoria ziziphi* (Lucas) and Its Parasitoid in Relation with some Climatic Factors and Chemical Components on Navel Orange Trees. J. Plant Prot. and Pathol., Mansoura Univ., 10 (8): 407- 413.

Padmavathi, Ch. and P.G. Padmaja (2022). Insect resistance in field crops. Indian J. Entomol., 84 (l): 1-28.

Salem H.A. (1994). Factors contributing to the distribution and level of attack of scale insects which infections some different varieties of mango fruit trees. M. Sc Thesis, Fac. Agric., Zagazig Univ., Egypt, 194.

Selim A.A. (2002). Integrated control of scale insects on certain fruit trees. Ph.D. Diss, Fac. Agric., Al-Azhar Univ., 173.

Zaabta, I. (2016). Ecologie de deux bioagresseurs des agrumes *Lepidosaphes beckii* et *Parlatoria ziziphi* (Homoptera: Diaspididae) dans un verger d'oranger à Rouiba. M.Sc. Thesis, Ecole Nationale Superieure Agronomiqye, El-Harrach, Algérie. (in French).

تأثير أصناف المانجو المختلفة على الكثافة العددية لحشرة *Aulacaspis tubercularis* في مصر

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قسم وقاية النبات - كلية الزراعة - جامعة الزقازيق - مصر

هدف هذا البحث الى دراسة تأثير بعض أصناف المانجو (لانجرا، زبدة وعويس) على الكثافة العددية لحشرة *A. tubercularis* خلال موسمين من يناير 2022 إلى ديسمبر 2023 تحت تأثير العوامل المناخية على أشجار المانجو في محطة بحوث البساتين بالقصاصين بمحافظة الإسماعيلية. أظهرت النتائج التي تم الحصول عليها اختلافا واضحا في كثافة تعداد هذه الآفة الحشرية على الأصناف المختبرة .خلال الموسم الأول، تباينت فترات نشاط حشرة *A. tubercularis* بين أصناف المانجو، حيث سجل صنف العويس خمس قمم، صنف الزبدة أربع قمم، وصنف لانجرا ثلاث قمم. في الموسم الثاني، بلغ نشاط حشرة *A. tubercularis* على أصناف المانجو العويس، زبدة ولانجرا ثلاث قمم. أظهرت أصناف المانجو حساسية متفاوتة للإصابة بالآفة الحشرية المذكورة، حيث كان صنف لانجرا الأكثر حساسية للإصابة بحشرة *A. tubercularis* بأعلى كثافة تعداد يليه صنف العويس بينما أظهر صنف الزبدة مقاومةً للإصابة بهذه الآفة مع أقل تعداد خلال موسمين. لذلك، يُوصى باستخدام حساسية الأصناف النباتية كأحد بنود برنامج الإدارة المتكاملة للآفات.

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