POPULATION FLUCTUATIONS OF SOME APHID SPECIES INFESTING MAIZE PLANTS IN SHARKIA GOVERNORATE

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Abstract

The results showed that three aphid species namely *Rhopalosiphum maidis, R. padi* and *Aphis gossypii* infesting maize plants in Sharkia governorate*. R. maidis* was the most abundant species on maize plants during 2008 and 2009 seasons. The highest population densities occurred in 3rd week of August for all districts i.e., Zagazig, Belbeis, Abou-Hammad and Meniet El-Kamh whereas their values were 1279.80, 955.45, 544.32 and 1095.06 aphids/plant, respectively during the first season. But during 2009 it appeared with higher population (1399.99, 820.79, 506.06 and 598.79 aphids/plant). On the other hand *R. padi* reached its peak during 3rd week of August with (423.83, 640.63, 395.78 and 234.76 aphids/plant) for season 2008 and during 2009 it appeared with (297.32, 640.63, 395.78 and 276.66 aphids/plant) for Zagazig, Belbeis, Abou-Hammad and Meniet El-Kamh, respectively. In addition *A. gossypii* indicated its peak on 4th week of August with values of 343.36, 372.03, 378.56 and 457.30 aphids/plant, respectively for the same previous districts at the first season and (338.03 &395.36 aphids/plant) for Zagazig and abou-Hammad at 1st week of September and (418.73 &357.96 aphids/plant) for Belbies and Meniet El-Kamh for the second season. During the last week of September, the population density of different aphid's species was obviously reduced on maize plants in various districts under study. We can use these results in IPM program for controlling aphids on Maize.

Key words: *R. maidis, R. padi*, *A. gossypii*, population density.

INTRODUCTION

Crops of family gramineae are considered of great economic importance for local consumption. Maize (*Zea Mays* L.) is the stable food for the majority of Egyptian farmer's .Maize foliage and grains are also a major constituent in cattle feeds, due to its economic importance. The area cultivated annually with corn reached about 2.1 million Feddan .This areas is cultivated in multiple plantations throughout a long period extending from March to October in order to be used as fodder plant or for seed production. There are some pests species playing an important role which infested different crops such as Maize, Wheat and Sorghum.On maize (*Rhopalosiphum maidis, R. padi* and *Aphis gossypii)* are the major pests infesting maize crop. Ganguli

and Ray Chaudry (1985) and El-Heneidy *et. al.*, 2004. reported that *R. maidis* caused severe damage to maize and other plants, it was observed at Wheat, Barley and Sorghum fields and causes a considerable loss to the quantity and quality of the maize grain yield, moreover under favorite conditions the insect produces several generations and can causes heavy damage in scab and reduced vigor , stunting , yellowing of leaves and delayed tillering and grain formation .Excretion of honey dew by the insect encourages sooty mold . So the aim of this work was to study the effect of temperature, relative humidity and population dynamic of aphid species infesting maize plants.

MATERIALS AND METHODS

To study the population dynamics of aphids infesting maize plants in Sharkia Governorate, an area of about 1/2 Feddan of maize plants was planted in four districts i.e. Zagazig, Abou- Hammad, Meniet El- kamh and Belbies at Sharkia governorate to evaluate the population fluctuations of different aphid species i.e. *R. maidis*, *R. padi* and *A. gossypii* during two successive seasons of 2008 and 2009. Sampling started when the infestation with maize aphid appeared, which containing 15 plants. Weekly samples were taken randomly from every replicate. The infested tassel and leaves were placed in paper bags and transferred to the laboratory for examination. The numbers of individuals of each stage alatae forms, apterous and nymphs were separately counted using a hand lens. A simple apparatus was used for this purpose, which was consisted of a wooden desk, a white card board paper divided into 4cm apart columns put in the bottom, on which glass plate was placed and the upper surface of the glass plate was allowed to be wet with fine droplets of water to reduce the movement of counted aphids (Hegab, 1987). The leaves were carefully shaken off on to the plate and the aphid insects were counted using a small brush in each column.

Statistical analysis:

The correlation between population densities of aphid species, *R. maidis* F., *R. padi* L.*,* and *A. gossypii* G., and some weather factors (maximum, minimum temperature and relative humidity) were statistically analyzed according to Snedecor and Cochran (1982).

RESULTS AND DISCUSSION

In the present work the following three species were surveyed. These aphid species harbourd on maize:

1. *Rhopalosiphum maidis* (Fitch).

2. *Rhopalosiphum padi* (Linnaeus).

3. *Aphis gossypii* (Glover).

The results revealed that plant samples proved to be efficient method for collecting aphids during the two successive seasons of investigation (2008 and 2009). These results agreed with those of Hegab, 1987 who mentioned that plant sample is an efficient method for collecting aphids. But Hegab-ola, 2001 who mentioned that sticky trap method is one of the best sampling methods available for estimating winged aphids population on maize fields. Three aphid species were occurred on maize plants. *R. maidis* (F.) was the most abundant specie on maize plants during 2008 and 2009 seasons.

A) *Rhopalosiphum maidis* (F.):

The mean numbers of aphid collected from maize plants during 2008 and 2009 seasons at 4 districts namely Zagazig, Abou-Hammad, Belbeis and Meniet El-Kamh at Sharkia Governorate are shown in Table (1) and illustrated graphically in Fig (1). According to the obtained results it could be mentioned that the aphids were found under the field conditions of maize during the period from 2nd week of July to 2nd week of September. The mean numbers of initial occurrence were 22.53 and 47 aphids / plant sample on Zagazig district, Belbeis 18.80 and 82.06, Abou-Hammad it showed 11.96 and 31.53 and appeared with 14.86 and 50.32 at Meniet El-Kamh, at mean temperature of 27.90 °c and 30.08 ° c and 59.80 % and 55.27 % R.H., respectively for 2008 and 2009. The results showed that the highest population density of *R. maidis* individuals occurred in the third week of August with a mean number of (1279.80, 955.45, 544.32 and 1095.06) for Zagazig, Belbeis, Abou-Hammad and meniet El-Kamh, respectively in season 2008 at 29.02° c and 62.67 R.H.% . On the other hand in season 2009 aphid appeared on 3rd week of July in both districts Zagazig and Belbeis but in Abou-Hammad and Meniet El-Kamh it appeared on 2nd week of July with highest population of *R. maidis* individuals occurred with mean number of (1399.99, 820.79, 506.06 and 598.79) for Zagazig, Belbeis, Abou-Hammad and meniet El-Kamh respectively during 2009 season at a mean temperature 30.97° c and 66.27 % R.H. After this peak the aphid numbers tended to decline until reached its minimal number in the 2nd week of September with a mean number of (72.89, 43.42, 40.16 and 48.73 aphids / plant) in season 2008 and 211.62, 77.69, 84.92 and 109.86 aphids / plant during 2009 for Zagazig, Belbeis, Abou-Hammad and meniet El-Kamh respectively at 33.47°c and 37.19 °c and 58.29% and 60.13% R.H for 2008 and 2009 season, respectively. These results are in agreement with those reported by many authors estimated population fluctuation of *R. maidis* on maize plants Farag *et. al.,* (1992) in Egypt observed one peak representing *R. maidis* (F.) occurred also at

the third week of August. Amal (2008) surveyed some homopterous insects infesting certain graminaeous field crop also the seasonal abundance of the dominant species *R. maidis* attacking maize plants and caused high damage showed only one peak on 3rd week of August. The statistical analysis of correlation Table (2) cleared that there were highly significant positive correlation between *R. maidis* population infesting maize in Zagazig ,Belbeis ,Abou-Hammad and Meniet El-Kamh and minimum relative humidity during first season where r = 0.922^{**} , 0.794^{**}, 0.878^{**} and 0.902^{**} for districts mentioned above ,respectively. The correlation was insignificant with temperature and maximum relative humidity during the first season in all districts. The statistical analysis of correlation cleared that there were highly significant positive correlation between *R. maidis* population infesting in Zagazig and Abou-Hammad and minimum relative humidity during the second season where r = 0.928^{**} and 0.913^{**}, respectively. Also there was a significant positive correlation between *R. maidis* population and the minimum relative humidity during the second season in Meniet El-Kamh where r = 0.852^{*}. The correlation was insignificant for temperature and maximum relative humidity in the second season.

Table 1. Mean number of aphid *Rhopalosiphum maidis* (F.) Infesting maize plants collected by plant samples at 4 districts, Sharkia Governorate during 2008 and 2009 seasons.

Date of inspection (weekly)		Mean number of aphid/plant sample								Mean of			
		Zagazig		Belbeis		Abou-Hammad		Meniet El-Kamh		Temp. ° c		R.H.%	
		2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
July	1st	0	0	0	0	0	0	0	0	28.18	29.10	59.87	58.47
	2nd	22.53	0	18.80	0	11.96	31.53	14.86	50.32	27.90	30.08	59.80	55.27
	3rd	63.12	47	48.13	82.06	39.42	46.99	44.96	68.39	30.95	30.27	56.60	65.40
	4th	151.53	141.99	123.72	169.69	111.72	109.06	114.29	135.59	31.16	30.71	67.27	65.15
	5th	320.62	408.19	219.03	286.79	137.22	145.39	241.75	242.46	30.06	32.68	66.87	64.60
Aug.	1st	378.09	512.69	262.23	528.56	235.19	239.06	303.75	373.79	30.07	30.65	70.40	68.33
	2nd	555.09	824.79	337.42	604.13	374.15	407.26	512.30	530.72	32.60	32.05	63.50	70.60
	3rd	1279.80	1399.99	955.45	820.79	544.32	506.06	1095.06	598.79	29.02	30.97	62.67	66.27
	4th	1170.39	918.32	271.66	504.53	191.29	337.93	479.19	372.53	29.70	29.10	58.14	64.87
Sep.	1st	212.26	320.56	115.35	204.02	98.35	144.18	187.83	270.39	36.26	39.35	56	56.29
	2nd	72.89	211.62	43.42	77.69	40.16	84.92	48.73	109.86	33.47	37.19	58.29	60.13
	3rd	0	0	0	0	0	0	0	0	36.49	39.10	58.57	57
Total		4226.52	4985.15	2395.21	3228.26	1783.78	2052.38	3042.72	3382.84				

Table 2. Correlation coefficients between temperature, relative humidity and population densities of *Rhopalosiphum maidis* F. on maize in four districts during the period of 2008- 2009.

Variables	Crop	Maize							
	Seasons	2008				2009			
	Localities	Zagazig	Belbeis	Abou-Hammad	Meniet El-Kamh	Zagazig	Belbeis	Abou-Hammad	Meniet El-Kamh
Tem $_{max}$		-0.702	-0.587	0.009	-0.059	-0.531	-0.546	-0.178	-0.119
Tem $_{min}$		0.406	0.478	-0.087	-0.159	0.224	-0.192	0.521	0.483
R.H. $_{max}$		-0.381	-0.415	0.584	0.614	-0.411	-0.480	-0.019	-0.268
R.H. $_{min}$		0.922**	0.794**	0.878**	0.902**	0.928**	0.625	0.913**	0.852*

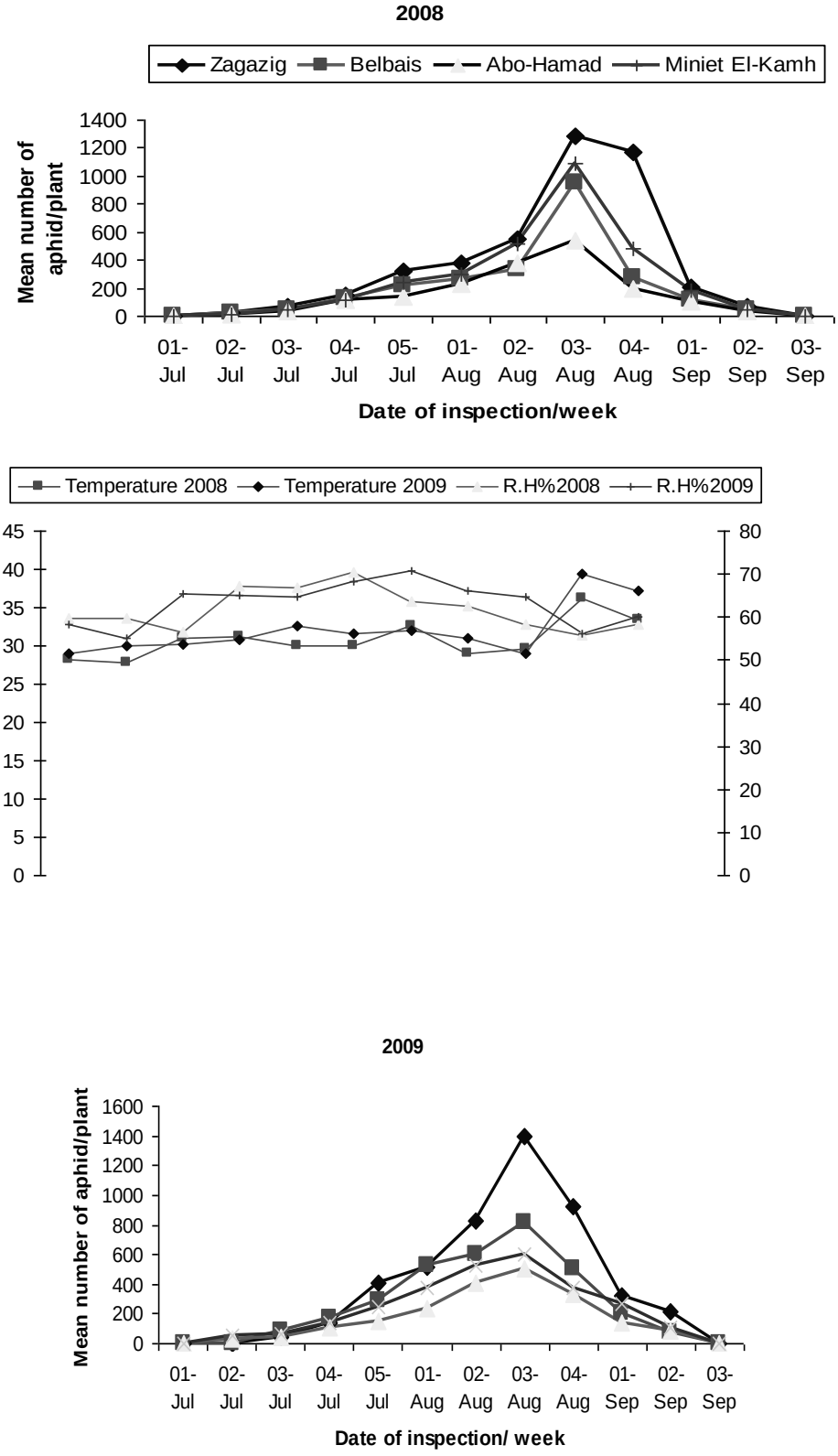

Fig 1. Population fluctuation of *Rhopalosiphum maidis* (F.) infesting maize plants collected by plant samples at 4 districts, Sharkia Governorate during 2008 and 2009 season, respectively.

B) *Rhopalosiphum padi* **(L.):**

Samples of 15 plants were picked up weekly from maize plants during the period from third week of July to the second half of September for two experimental seasons. The mean number of aphid *R. padi* infesting maize plants are given in Table (3) and illustrated graphically in Fig (2). The first sample of *R. padi* was collected at third week of July on maize plants. The mean numbers of initial appearance were 118.43, 81.76, 93.93 and 43.09 aphids / plant for Zagazig, Belbeis, Abou-Hammad and meniet El-Kamh respectively at 30.95 ◌° c and 56.60 % R.H. in the first season and (90.46, 94.70 and 52.96) for Belbeis, Abou-Hammad and meniet El-Kamh at 30.71◌°c and 65.15 % R.H. and appeared in Zagazig with mean number 85.39 at 32.68◌°c and 64.60 % R.H. in the second season during 4th week of July. Fig (2) illustrated cleared one peak of activity of *R. padi* on maize plants occurred in third week of August with a mean number of (423.83, 640.63, 395.78 and 234.76 aphids / plant) for Zagazig, Belbeis, Abou-Hammad and meniet El-Kamh respectively at 29.02◌°c at 62.67 % R.H in the first season and showed also one peak in the second season on 4th week of August (427.32, 568.66 and 276.66 aphids / plant) for Belbeis, Abou-Hammad and meniet El-Kamh, respectively, at 29.10 ◌° c at 64.87 % R.H., while at Zagazig 400.23 on 1st Sep. at 39.35 ◌° c at 56.29 % R.H. After this peak the aphid numbers tended to decline until reached its minimal number in September with a mean number of (28.02, 46.26, 38.66 and 29.59 aphids / plant) in 2008 season at 33.47 ºc and 58.29 % R.H, (54.39, 59.03 and 53.42) during 2009 for Belbeis, Abou-Hammad and meniet El-Kamh respectively at 39.10 ºc and 57% R.H for 2009 in Zagazig district it was 56.20 % R.H. These results are in agreement with finding of Mohamed (1996) in Egypt who mentioned that, *R. padi* (L.) was represented by one peak at the end of March on wheat and barley and also one on maize at the beginning of October. The statistical analysis of correlation (Table 4) cleared that there were insignificant negative correlation between *R. padi* population infesting maize in Belbeis and meniet El-Kamh with maximum temperature. It was positive with minimum temperature during the first seasons, while there were insignificant negative correlation with minimum temperature during the second season in Abou-Hammad and Meniet El-Kamh r = -0.142 and -0.289, respectively. While it was insignificant with maximum relative humidity during second season in Zagazig and Belbeis districts. Also, there were highly significant correlation between population and temperature in Zagazig district.

Table 2.Correlation between temperature, relative humidity and population densities of *Rhopalosiphum padi* L. on maize in four districts during the period of 2008- 09:

Variables	Crop	Maize							
	Seasons	2008				2009			
	Localities	Zagazig	Belbeis	Abou-Hammad	Meniet El-Kamh	Zagazig	Belbeis	Abou-Hammad	Meniet El-Kamh
Tem $_{max}$		0.821**	-0.592	0.788*	-0.514	0.911**	0.911**	-0.064	-0.186
Tem $_{min}$		0.744*	0.477	0.737*	0.505	0.885**	0.881**	-0.142	-0.289
R.H. $_{max}$		0.928**	-0.755*	0.894**	-0.482	-0.627	-0.650	0.576	0.597
R.H. $_{min}$		-0.786*	0.875**	-0.740*	0.952**	-0.743*	-0.721*	0.966**	0.930**

Table 3. Mean number of aphid *Rhopalosiphum padi* (L.) infesting maize plants collected by plant samples at 4 districts, Sharkia Governorate during 2008 and 2009 seasons.

Date of inspection (weekly)		Mean number of aphid/plant sample								Men of			
		Zagazig		Belbeis		Abou-Hammad		Meniet El-Kamh		Temp. ºC		R.H.%	
		2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
July	1st	0	0	0	0	0	0	0	0	28.18	29.10	59.87	58.47
	2nd	0	0	0	0	0	0	0	0	27.90	30.08	59.80	55.27
	3rd	118.43	0	81.76	0	93.93	0	43.09	0	30.95	30.27	56.60	65.40
	4th	173.40	0	129.20	90.46	124.43	94.70	98.19	52.96	31.16	30.71	67.27	65.15
	5th	202.16	85.39	171.60	132.89	136.56	124.33	106.96	97.89	30.06	32.68	66.87	64.60
Aug.	1st	237.13	170.43	187.53	187.33	154.60	161.03	121.06	131.32	30.07	30.65	70.40	68.33
	2nd	362.56	232.86	365.70	204.29	236.36	219.66	191.72	161.36	32.60	32.05	63.50	70.60
	3rd	423.83	268.90	640.63	310.56	395.78	460.03	234.76	205.66	29.02	30.97	62.67	66.27
	4th	139.79	297.32	261.02	427.32	176.93	568.66	115.26	276.66	29.70	29.10	58.14	64.87
Sep.	1st	63.50	400.23	99.46	135.99	56.79	275.33	68.76	230.55	36.26	39.35	56	56.29
	2nd	28.02	234.03	46.26	54.39	38.66	104.76	29.59	97.36	33.47	37.19	58.29	60.13
	3rd	0	81.76	0	0	0	59.03	0	53.42	36.49	39.10	58.57	57
	4th	0	49.36	0	0	0	0	0	0	34.06	37.23	57	56.20
Total		1678.82	1896.28	1983.16	2130.67	1414.04	2067.53	1009.39	1363.95				

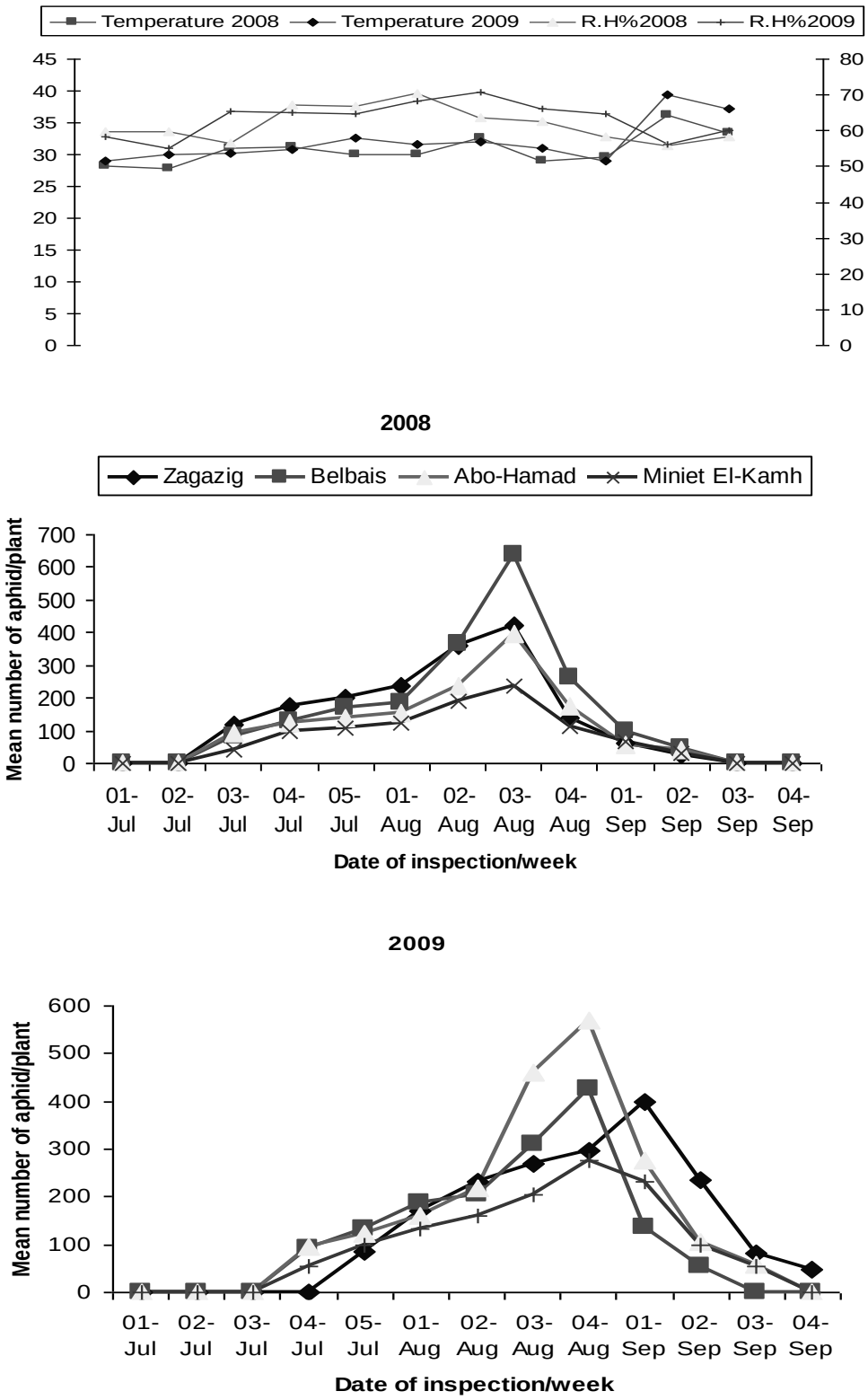

Fig 2. Population fluctuation of *Rhopalosiphum padi* (L.) infesting maize plants collected by plant samples at 4 districts, Sharkia Governorate during 2008 and 2009 season, respectively.

C) *Aphis gossypii* (G.):

The mean numbers of aphid collected from maize plants during 2008 and 2009 seasons at 4 districts i.e., Zagazig, Belbeis, Abou-Hammad, and Meniet El-Kamh at Sharkia Governorate are shown in Table 5 and illustrated graphically in Fig (3). According to the obtained results it could be mentioned that the aphids were found in field of maize during the period from 4th week of July to 2nd week of September (2008 and 2009 season). The mean numbers of initial occurrence were 43.40 and 46.03 aphids / plant sample in Zagazig and 84.03 &79.36 in Meniet El-Kamh at mean temperature of 31.16 °c and 30.71 °c and 67.27 % and 65.15 % R.H, respectively for 2008 and 2009 and Belbeis at 63.03 and Abou -Hammad at 69.90 at 31.16 ° c and 67.27 % in first season and 60.03 and 68.83 at 32.68 ° c and 64.60 % R.H. in 2nd season. The results showed that the highest population density of *A. gossypii* individuals occurred in the 4th week of August with a mean numbers of 343.36,372.03, 400.56 and 457.30 for Zagazig ,Belbeis , Abou-Hammad and meniet El-Kamh, respectively in season 2008 at 29.70° c and 58.14 R.H.% . On 4th week of August 2009, the highest population of *A. gossypii* individuals was recorded with mean numbers of 352.06, 418.73 and 357.96 for Zagazig, Belbeis, and meniet El-Kamh, respectively at a mean temperature of 29.10° c and 64.87 % R.H. For Abou-Hammad it appeared with 395.36 individual at 39.35° c and 56.29 R.H. % at the beginning of September in season 2009. After this peak the aphid numbers tended to decline until reached its minimal number in September with a mean number of (38.23, 83.40, 94.93 and 103.36) in 2008 season at 33.47° c and 58.29 R.H.% and 41.53, 61.40, 89.66 and 42.70 in season 2009 at 39.10 c and 57 R.H.% .for Zagazig, Belbeis, Abou-Hammad and meniet El-Kamh respectively. Results in general concerning the populations of *R. maidis, R. padi* and *A. gossypii* in maize crops show clearly that these species have one peak on maize plants. These results are in agreement with findings of Abd-Alla (1985), Hegab (1987), Hegab-ola (2001) who showed that the flying activity of *R. maidis , R. padi* and *A. gossypii* have one peak on summer plantation. The statistical analysis of correlation Table 6 cleared that there were insignificant negative and positive correlation between *A. gossypii* population on maize at the four localities and temperature in 1st season. It hesitated between negative and positive with maximum relative humidity. Also, there was significant positive correlation between the aphid population and the minimum relative humidity during the second season for two localities (r = 0.814) in Abou-Hammad and Meniet El-Kamh (r = 0.788).

Table 5. Mean number of aphid *Aphis gossypii (*G.*)* Infesting maize plants collected by plant samples at 4 districts, Sharkia Governorate during 2008 and 2009 seasons.

Date of inspection (weekly)		Mean number of aphid/plant sample								Men of			
		Zagazig		Belbeis		Abou-Hammad		Meniet El-Kamh		Temp. ºC		R.H.%	
		2008	2009	2008	2009	2008	2009	2008	2009	2008	2009	2008	2009
July	1st	0	0	0	0	0	0	0	0	28.18	29.10	59.87	58.47
	2nd	0	0	0	0	0	0	0	0	27.90	30.08	59.80	55.27
	3rd	0	0	0	0	0	0	0	0	30.95	30.27	56.60	65.40
	4th	43.40	46.03	63.03	0	69.90	0	84.03	79.36	31.16	30.71	67.27	65.15
	5th	71.53	84.10	94.56	60.03	107.53	68.83	102.63	91.8	30.06	32.68	66.87	64.60
Aug.	1st	143.30	159.93	188.76	97.16	225.10	96.70	243.36	134.53	30.07	30.65	70.40	68.33
	2nd	213.86	227	209.20	208	255.23	221.40	310.76	256.46	32.60	32.05	63.50	70.60
	3rd	249.16	254.03	282.96	303.36	292.93	293.10	333.26	314.13	29.02	30.97	62.67	66.27
	4th	343.36	352.06	372.03	418.73	400.56	327.86	457.30	357.96	29.70	29.10	58.14	64.87
Sep.	1st	73.66	338.03	152.36	200.20	173.8	395.36	288.86	208.33	36.26	39.35	56	56.29
	2nd	38.23	82.03	83.40	110.56	94.93	187	103.36	112.06	33.47	37.19	58.29	60.13
	3rd	0	41.53	0	61.40	0	89.66	0	42.70	36.49	39.10	58.57	57
	4th	0	0	0	0	0	0	0	0	33.47	37.23	57	56.20
Total		1176.50	1584.74	1446.30	1459.44	1597.98	1679.91	1923.56	1742.43				

The correlation was insignificant for maximum relative humidity during the same seasons for the four districts , while there were highly significant positive correlation with minimum relative humidity during the second season (r = 0.957) in Abou-Hammad , while there were significant positive correlation with minimum relative humidity in second seasons in Belbeis and Meniet El-Kamh where r = 0.740 and 0.804, respectively.

Table 6. Correlation between temperature, relative humidity and population densities of *Aphis gossypii* (G.) on maize in four districts during the period of 2008- 09:

Variables	Crop	Maize							
	Seasons	2008				2009			
	Localities	Zagazig	Belbeis	Abou-Hammad	Meniet El-Kamh	Zagazig	Belbeis	Abou-Hammad	Meniet El-Kamh
Tem $_{max}$		-0.262	-0.488	0.045	0.060	-0.421	-0.438	-0.073	0.169
Tem $_{min}$		0.171	0.080	-0.018	-0.017	0.021	0.400	-0.183	-0.113
R.H. $_{max}$		-0.417	-0.536	0.383	0.358	-0.389	-0.496	0.553	0.430
R.H. $_{min}$		0.537	0.702	0.814*	0.788*	0.659	0.740*	0.957**	0.804*

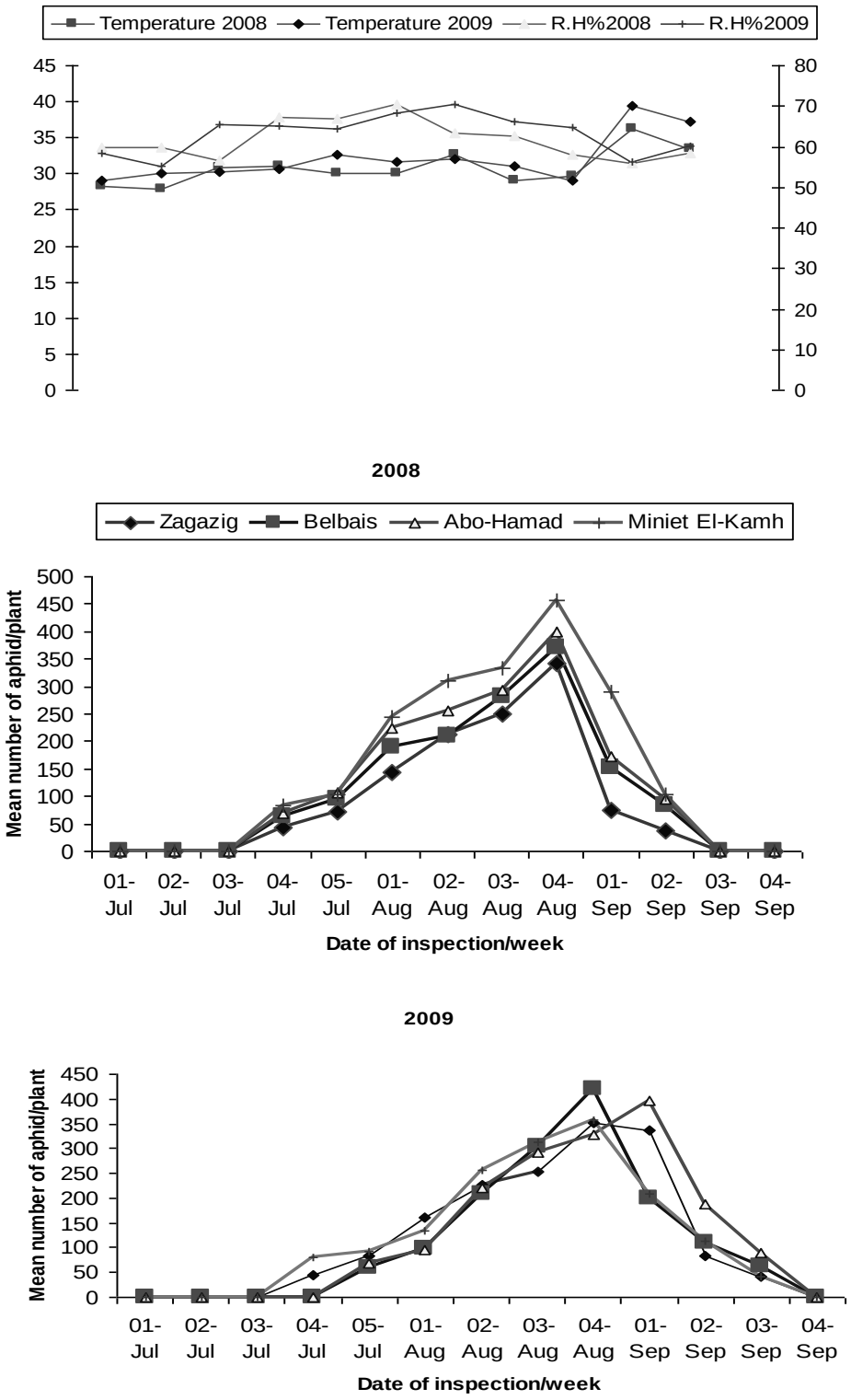

Fig 3. Population fluctuation of *Aphis gossypii* (G.) infesting maize plants collected by plant samples at 4 districts, Sharkia Governorate during 2008 and 2009 season.

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تذبذب تعداد بعض حشرات المن التى تصيب الذره الشامية فى محافظه الشرقية

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يهدف هذا البحث الى دراسة تواجد وأنتشار أنواع المن على الذره الشاميه فى محافظة الشرقية وقد اشارت الدراسة الى وجود 3 أنواع من المن على نباتات الذره الشاميه تنتشر فى العديد من مراكز المحافظة وهذة الأنواع هى : من الذرة *Rhopalosiphum maidis* F. , من الشعيرأوالشوفان*Rhopalosiphum padi* L. ومن القطن *Aphis gossypii* G. . اجريت التجارب خلال موسمى 2008 ، 2009 لدراسة هذة الأنواع فى 4 مراكز هى (الزقازيق- بلبيس - أبو حماد - منيا القمح) كما تم دراسة علاقة ذلك بدرجة الحرارة والرطوبة خلال موسمى الدراسة . بالنسبة (لمن الذرة) ظهرت الأصابة فى الأسبوع الثانى من شهر يوليو بتعداد قليل وأزدادت كثافة اعداد هذا النوع خلال شهر أغسطس وسبتمبر وذلك فى جميع المراكز التى تم دراسة تذبذب الاعداد بها ووصل أقصى عدد لهذا النوع فى الأسبوع الثالث من شهر أغسطس . بينما بدأ عدد الافراد فى الأنخفاض فى شهر سبتمبر . أما بالنسبة (لمن الشعير أوالشوفان) فكانت بداية ظهورة فى أواخر شهر يوليو وبلغ أقصى تعداد له فى الأسبوع الثالث من شهر أغسطس فى العام الأول ولكن فى العام الثانى كانت ذروه التعداد فى الاسبوع الرابع من أغسطس وكان التعداد أكثر ما يمكن خلال شهر يوليو فى مركز أبو حماد وبلبيس عن مركزى الزقازيق ومنيا القمح وكذلك فى وصولة الى أقصى تعداد خلال شهر أغسطس فى مركز أبو حماد وبلبيس أيضا أما (من القطن) فكان بداية ظهوره فى أواخر شهر يوليو وذلك فى جميع المراكز خلال العام الأول من الدراسة ووصل هذا النوع الى أقصى تعداد لة فى نهاية شهر أغسطس وذلك فى السنة الأولى والثانية فى كل من مركز الزقازيق وبلبيس ومنيا القمح وأبو حماد بينما أخذ التعداد فى النقصان بتقدم النبات فى العمر حتى أنعدم التعداد فى الأسبوع الأخير من شهر سبتمبر فى بعض المناطق وكان بأعداد قليلة فى المناطق الاخرى . ويمكن الاستفاده من هذه النتائج فى برنامج المكافحه المتكامله(I.P.M.) لحشرات المن على الذره الشاميه.