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### Kahramanmaraş'ta Sebze Bitkilerinde Cicadellidae (Hemiptera) Türleri

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#### Özet

Kahramanmaraş'ta yetiştirilen sebze bitkilerinden Cicadellidae (Hemiptera) türlerini tanımlamak için surveyler yapılmıştır. Sebzeler üzerindeki cicadellid türleri 1997–1998 yıllarında toplanmıştır. Sebzelerden *Aconurella prolixa* (Lethierry), *Arboridia* sp., *Circulifer haematoceps* (M.-R.), *Edwardsiana* sp., *Empoasca decipiens* Paoli, *Empoasca* sp., *Euacelidius* sp., *Macrosteles quadripunctulatus* (Kirschbaum), *Neoliturus fenestratus* (Herrich-Schaffer), *Psammotettix provincialis* (Ribaut), *Psammotettix sitriatus* L., *Recilia schimidtgeni* (Wagner), *Zyginidia pullula* (Boheman), *Zyginidia* sp. türleri elde edilmiştir. Sebze alanlarındaki en yaygın cicadellid türü *E. decipiens* olmuştur.

**Key words:** Cicadellid, survey, sebzeler, Kahramanmaraş, Türkiye.

#### Cicadellidae (Hemiptera) Species of Vegetable Plants from Kahramanmaraş, Turkey

#### Abstract

Surveys were conducted to identify leafhopper family, Cicadellidae (Hemiptera) species from vegetable plants in Kahramanmaraş, Turkey. Cicadellid species on vegetables were collected during 1997–1998. *Aconurella prolixa* (Lethierry), *Arboridia* sp., *Circulifer haematoceps* (M.-R.), *Edwardsiana* sp., *Empoasca decipiens* Paoli, *Empoasca* sp., *Euacelidius* sp., *Macrosteles quadripunctulatus* (Kirschbaum), *Neoliturus fenestratus* (Herrich-Schaffer), *Psammotettix provincialis* (Ribaut), *Psammotettix sitriatus* L., *Recilia schimidtgeni* (Wagner), *Zyginidia pullula* (Boheman), *Zyginidia* sp. were obtained from vegetables. *E. decipiens* was the most common cicadellid species in the vegetable fields.

**Key words:** Cicadellid, survey, vegetables, Kahramanmaraş, Turkey

#### Introduction

Family Cicadellidae (Hemiptera) is one of the pest groups of vegetables. There are few data on the cicadellid species on vegetables in the other provinces from different regions of Turkey. Karsavuran et al. (1992) studied that investigations on the population trends of *Asymmetrasca decedens* (Paoli) and *Empoasca decipiens* Paoli on processing tomatoes in Yenişehir (Bursa). Additionally, the pests of processing tomatoes were also studied in Turkey during 1988-89 (Öncüer et al., 1992). Başpınar (1994) reported that the population changes of *A. decedens* and *E. decipiens* on eggplant and tomato in Adana province in 1991. Akkaya and Uygun (1996) determined *E. decipiens* as one of the harmful species on summer vegetables areas. Akkaya and Uygun (1999) also reported that the study was carried out to determine the harmful and beneficial insect fauna of cucurbit vegetables, in Diyarbakır and Şanlıurfa provinces in 1993-94. Yiğit and Uygun (1982) determined cicadellid species only in apple orchards in Kahramanmaraş. The object of the present faunistic paper is to determine the cicadellids on different vegetable plants in Kahramanmaraş as a basis for future studies.

#### Material and Methods

Vegetable growing areas of Kahramanmaraş (Centre, Pazarcık, and Türkoğlu counties) were surveyed randomly from July to August in 1997–1998.

Surveys were performed in eggplant (*Solanum melongena* L.), melon (*Cucumis melo* L.), watermelon (*Citrullus lanatus* (Thunb.)), tomato (*Lycopersicon esculentum* L.), cucumber (*Cucumis sativus* L.; *Cucumis melo* var. *flexuosus*), okra (*Hibiscus esculentus* L.), pepper (*Capsicum annuum* L.), zucchini (*Cucurbita pepo* L.), and legume (*Phaseolus vulgaris* L.) fields. However, most of samples were taken from *C. annuum*, *C. sativus*, and *S. melongena* fields. Samplings were conducted in 14 and 24 fields in 1997 and 1998, respectively. In total, 25 leaves and 25 sweeping net (size: 30x75cm) samples were taken randomly from each vegetable fields. The samples were placed in separate plastic bags and were brought to the laboratory and cicadellid adults were prepared for the identification. Method of mounting minute insects was used for mounting of cicadellid adults (Borror et al., 1992).

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## Results and Discussion

### Family Cicadellidae (Hemiptera)

#### *Aconurella prolixa* (Lethierry)

Material examined: Center 568 m: Hacımustafa, 18.VI.1998, (1 individual), on *Solanum melongena* L. leaves.

#### *Arboridia* sp.

Material examined: Center: Hacımustafa, 18.VI.1998, (1), on *Phaseolus vulgaris* L. leaves.

#### *Circulifer haematoceps* (M.-R.)

Material examined: Center: Hacımustafa, 18.VI.1998, (1), on *Solanum melongena* L. leaves; Center: Hacımustafa, 18.VI.1998, (1), on *Cucurbita pepo* L. collected with a sweeping net; Türkoğlu 490 m: Akçalı, 15.VII.1998, (1), *Cucumis sativus* L. collected with a sweeping net; Pazarcık 850 m: Alibeyuşağı, 21.VII.1998, (1), *Capsicum annuum* L. collected with a sweeping net.

#### *Edwardsiana* sp.

Material examined: Türkoğlu: Ceceli, 30.VII.1997, (1), *Lycopersicon esculentum* L. collected with a sweeping net; Pazarcık: Emiroğlu, 18.VI.1998, (5), on *Lycopersicon esculentum* L. collected with a sweeping net.

#### *Empoasca decipiens* Paoli

Material examined: Pazarcık: Karaçay, 27.VII.1997, (1), on *Solanum melongena* L. leaves; Center: Hacımustafa, 29.VII.1997, (1), *Solanum melongena* L. collected with a sweeping net; Pazarcık: Bölükçam, 15.VIII.1997, (1), on *Phaseolus vulgaris* L. leaves; Center: Hacımustafa, 18.VI.1998, (1), on *Solanum melongena* L. leaves; Center: Hacımustafa, 09.VII.1998, (11), *Cucurbita pepo* L. collected with a sweeping net; Türkoğlu: Ceceli, 15.VII.1998, (9), *Lycopersicon esculentum* L. collected with a sweeping net; Türkoğlu: Ceceli, 15.VII.1998, (2), *Cucumis sativus* L. collected with a sweeping net; Türkoğlu: Akçalı, 15.VII.1998, (2), on *Cucumis sativus* L. by sweeping net; Pazarcık: Alibeyuşağı, 21.VII.1998, (9), *Capsicum annuum* L. collected with a sweeping net; Pazarcık: Bölükçam, 24.VII.1998, (3), *Capsicum annuum* L. collected with a sweeping net; Pazarcık: Bölükçam, 24.VII.1998, (3), *Lycopersicon esculentum* L. collected with a sweeping net; Center: Şahinkayası, 29.VII.1998, (11), *Lycopersicon esculentum* L. collected with a sweeping net; Center: Şahinkayası, 29.VII.1998, (18), *Capsicum annuum* L. collected with a sweeping net; Türkoğlu: Beyoğlu: 03.VIII.1998, (1), *Capsicum annuum* L. collected with a sweeping net; Pazarcık: Çınarlı, 03.VIII.1998, (1), *Capsicum annuum* L. collected with a sweeping net; Center: Çiğli, 03.VIII.1998, (6), *Capsicum annuum* L. collected with a sweeping net; Center: Tevekkeli,

11.VIII.1998, (8), *Hibiscus esculentus* L. collected with a sweeping net; Center: Küpeli, 11.VIII.1998, (8), *Solanum melongena* L. collected with a sweeping net.

#### *Empoasca* sp.,

Material examined: Türkoğlu: 30.VII.1997, (1), *Solanum melongena* L. collected with a sweeping net; Center: Hacımustafa, 18.VI.1998, (3), on *Phaseolus vulgaris* L. leaves; Center: Hacımustafa, 18.VI.1998, (1), on *Solanum melongena* L. leaves.

#### *Euacelidius* sp.,

Material examined: Center: Hacımustafa, 18.VI.1998, (1), on *Solanum melongena* L. leaves.

#### *Macrosteles quadripunctulatus* (Kirschbaum)

Material examined: Türkoğlu: Akçalı, 15.VII.1998, (1), *Cucumis sativus* L. collected with a sweeping net; Pazarcık: Karaçay, 27.VII.1998, (1), on *Solanum melongena* L. leaves.

#### *Neoliturus fenestratus* (Herrich-Schaffer)

Material examined: Pazarcık: Karaçay, 30.VII.1998, (1), *Lycopersicon esculentum* L. collected with a sweeping net.

#### *Psammotettix provincialis* (Ribaut)

Material examined: Center: Hacımustafa, 18.VI.1998, (2), on *Cucurbita pepo* L. collected with a sweeping net; Türkoğlu: Akçalı, 15.VII.1998, (4), *Cucumis sativus* L. collected with a sweeping net.

#### *Psammotettix sitriatus* L.

Material examined: Center: Hacımustafa, 18.VI.1998, (1), on *Phaseolus vulgaris* L. leaves; Center: Hacımustafa, 18.VI.1998, (3), on *Solanum melongena* L. leaves; Center: Hacımustafa, 18.VI.1998, (6), on *Phaseolus vulgaris* L. leaves; Türkoğlu: 15.VII.1998, (6), *Cucumis sativus* L. collected with a sweeping net. Center: Ceceli, 15.VII.1998, (8), *Cucumis sativus* L. collected with a sweeping net. Pazarcık: Alibeyuşağı, 21.VII.1998, (1), *Capsicum annuum* L. collected with a sweeping net; Pazarcık: Karaçay, 27.VII.1998, (1), on *Solanum melongena* L. leaves; Center: Şahinkayası, 29.VII.1998, (10), *Capsicum annuum* L. collected with a sweeping net; Center: Çiğli, 30.VIII.1998, (2), *Capsicum annuum* L. collected with a sweeping net.

#### *Recilia schimdtgeni* (Wagner)

Material examined: Center: Ceceli, 15.VII.1998, (1), *Cucumis sativus* L. collected with a sweeping net.

#### *Zyginidia pullula* (Boheman)

Material examined: Pazarcık: Alibeyuşağı, 21.VII.1998, (9), *Capsicum annuum* L. collected with a sweeping net.

**Zyginidia sp.**

Material examined: Türkoğlu: 30.VII.1997, (1), *Cucumis sativus* L. collected with a sweeping net; Türkoğlu: 30.VII.1997, (1), *Lycopersicon esculentum* L. collected with a sweeping net; Center: Hacımustafa, 18.VI.1998, (3), on *Phaseolus vulgaris* L. leaves; Center: Hacımustafa, 18.VI.1998, (1), on *Solanum melongena* L. leaves; Center: Şahinkayası, 29.VII.1998, (1), *Lycopersicon esculentum* L. collected with a sweeping net.

In conclusion, 9 different cicadellid species and 5 genus were obtained from vegetable fields of Centre, Pazarcık and Türkoğlu counties of Kahramanmaraş Province. Cicadellid species were not found on *C. melo*, *C. lanatus* and *C. melo* var. *flexuosus* in this study. *E. decipiens* was obtained from *S. melongena*, *P. vulgaris*, *C. pepo*, *L. esculentum*, *C. sativus*, *H. esculentus* and *C. annuum* in 1998. *E. decipiens* was the most common cicadellid species of sweeping net samples of vegetables in Kahramanmaraş. *P. sitriatus* followed *E. decipiens* (Table 1).

Table 1. The total number of cicadellid species obtained from vegetable plants in Kahramanmaraş (1998).

Cicadellid species	Vegetables							Total	
	Sm	Pv	Cp	Le	Cs	He	Ca		
<i>Aconurella prolixa</i>	A*	1						1	
	F**	1						1	
<i>Arboridia</i> sp.	A		1					1	
	F		1					1	
<i>Circulifer haematoceps</i>	A	1		1		1	1	4	
	F	1		1		1	1	4	
<i>Edwardsiana</i> sp.	A			5				5	
	F			1				1	
<i>Empoasca decipiens</i>	A	9		11	23	4	8	26	81
	F	2		1	3	2	1	6	15
<i>Empoasca</i> sp.	A	1	3						4
	F	1	1						2
<i>Euacelidius</i> sp.	A	1							1
	F	1							1
<i>Macrosteles quadripunctulatus</i>	A	1				1			2
	F	1				1			2
<i>Neoliturus fenestratus</i>	A				1				1
	F				1				1
<i>Psammotettix provincialis</i>	A			2		4			6
	F			1		1			2
<i>Psammotettix sitriatus</i>	A	3	7		6	8		13	37
	F	2	1		1	1		3	8
<i>Recilia schimidtgeni</i>	A					1			1
	F					1			1
<i>Zyginidia pullula</i>	A							1	1
	F							1	1
<i>Zyginidia</i> sp.	A	1	3		1				5
	F	1	1		1				3
Total no sampels		4	3	-	1	7	-	9	24

Sm, *Solanum melongena*; Pv, *Phaseolus vulgaris*; Cp, *Cucurbita pepo*; Le, *Lycopersicon esculentum*; Cs, *Cucumis sativus*; He, *Hibiscus esculentus*; Ca, *Capsicum annuum*.

\*A: Abundance, number of individuals; \*\*F: Frequency, number of sampels.

*E. decipiens* was reported to be harmful on many culture plants especially in the South and The Western Anatolia regions of Turkey by Lodos, (1986). *E. decipiens* also was determined as one of the most common species on processing tomatoes, squash and cucumber by the other researchers (Delrio et al., 1989; Karsavuran et al., 1992; Öncüer et al., 1992; Akkaya

and Uygun, 1999). Previously, Yiğit and Uygun (1982) reported *P. sitriatus*, *Edwardsiana rosae* (L.), *E. decipiens*, *Neoliturus haematoceps* (M.R.), *Psammotettix* sp. Prob. *provincialis* (Ribaut) from apple orchards in Adana and Kahramanmaraş. The cicadellid fauna can also be considered in terms of integrated pest management for the other field areas

and orchards of Kahramanmaraş in addition these studies.

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