

**NOTES ON THE BAIT TRAP COLLECTED HETEROPTERA
(HEMIPTERA) SPECIES OF FIG ORCHARDS IN TİRE (İZMİR),
WESTERN TURKEY**

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ABSTRACT: This paper provides information about the Heteroptera (Hemiptera) species collected by fermented bait traps in six fig orchards in Tire (İzmir), Western Turkey in 2016. As a result of this study, 12 species belonging to six families of Heteroptera have been recorded.

KEY WORDS: Heteroptera, Hemiptera, fermented bait traps, Fauna, İzmir, Turkey

Although bait traps have been widely used in collection of many insect groups, no study exists about the use of bait traps for collection of Heteroptera species. In this study, Heteroptera material (Hemiptera) collected by two types of fermented bait traps in six fig orchards in Tire, Izmir, western Turkey were evaluated. Information on fig orchards were given in Table 1.

A total of 4 bait traps with wine and 4 bait traps with fig fruit were placed in each orchard. Each traps with wine were charged with a mixture containing wine (100 ml), water (900 ml), sugar (25 g), and winegar (25 ml), while each traps with fig were charged with 5-6 dried bed fig fruit, a sweet spoon of dough yeast and water (1000 ml). The traps were checked for the presence of Heteroptera at weekly intervals starting from beginning of April until the end of October, 2016.

RESULTS

In this study, 12 species belong to six families of Heteroptera have been recorded.

Family Alydidae

Camptopus lateralis (Germar, 1817)

Material examined: Tire: Central province 1, bait traps with wine, 01.06.2016, 1 ex.

Family Reduviidae

Rhynocoris iracundus (Poda, 1761)

Material examined: Tire: Ortaköy, bait traps with wine, 24.04.2016, 2 exs.

Rhynocoris punctiventris (Herrich-Schaeffer, 1846)

Material examined: Tire: Ortaköy, bait traps with wine, 10.07.2016, 1 ex.

Family Pentatomidae

Nezara viridula (Linnaeus, 1758)

Material examined: Tire: Central province 2, bait traps with wine, 06.07.2016, 1 ex.

Rhaphigaster nebulosa (Poda, 1761)

Material examined: Tire: Central province 2, bait traps with wine, 10.08.2016, 1 ex.; Dereli, bait traps with fig, 06.07.2016, 3 exs. Totally 4 exs.

***Eurydema ornata* (Linnaeus, 1758)**

Material examined: Tire: Akyurt, bait traps with wine, 12.06.2016, 1 ex.; Başköy, bait traps with wine, 10.07.2016, 1 ex. Totally 2 exs.

Family Coreidae***Haploprocta sulcicornis* (Fabricius, 1794)**

Material examined: Tire: Akyurt, bait traps with fig, 10.04.2016, 1 ex.

***Syromastus rhombeus* (Linnaeus, 1767)**

Material examined: Tire: Başköy, bait traps with fig, 10.04.2016, 1 ex.

Family Lygaeidae***Spilostethus pandurus* (Scopoli, 1763)**

Material examined: Tire: Dereli, bait traps with wine, 11.05.2016, 1 ex.

***Lygaeus equestris* (Linnaeus, 1758)**

Material examined: Tire: Başköy, bait traps with wine, 17.07.2016, 1 ex.

Family Miridae***Calacoris nemoralis* (Fabricius, 1787)**

Material examined: Tire: Başköy, bait traps with wine, 22.05.2016, 1 ex.; Central province 2, bait traps with wine, 4, 27.04.2016, 2 exs.; Dereli, bait traps with wine, 4, 27.04.2016, 1 ex.; Ortaköy, bait traps with wine, 24.04.2016, 1 ex. Totally 5 exs.

***Closterotomus annuluus* (Brullé, 1832)**

Material examined: Tire: Akyurt, bait traps with fig, 15.05.2016, 1 ex.; Başköy, bait traps with wine, 01.05.2016, 2 exs., 22.05.2016, 2 exs.; Central province 2, bait traps with wine, 04.05.2016, 4 ex., 11.05.2016, 4 exs.; Dereli, bait traps with wine, 27.04.2016, 1 ex., 04.05.2016, 7 exs., 11.05.2016, 1 ex., 15.05.2016, 5 exs., 18.05.2016, 1 ex.; Ortaköy, bait traps with wine, 24.04.2016, 7 exs., 01.05.2016, 16 exs., 08.05.2016, 12 exs., 15.05.2016, 10 exs., 22.05.2016, 4 exs., 29.06.2016, 1 ex. Totally 78 exs.

As a result, a total 98 specimens from 12 species of 6 families belong to Heteroptera were identified in the two types of traps in the six fig orchards. Among those species *Rhynocoris iracundus* and *R. punctiventris* are zoophagous and the rest of the collected species are phytophagous. Eight species were collected by bait traps with wine and two species (*Haploprocta sulcicornis*, *Syromastus rhombeus*) by bait traps with fig. The species of *Rhaphigaster nebulosa* and *Closterotomus annuluus* were collected with two types of bait traps. By the bait traps with wine, 92 specimens of 10 species were collected and 6 specimens of 4 species were collected by the bait traps with fig fruit. *Closterotomus annuluus* belonging to the family Miridae was found to be remarkable in terms of the number of specimens according to other species (Table 2). Of the 98 collected samples, 78 belong to this species and generally appear to prefer the bait traps with wine between April and May (Table 3). For this species which its host plant is *Salvia officinalis*, at least it can be assumed that bait traps with wine are attractive. For more precise results, multiple repetitive long-term studies will make the subject clearer. In the previous studies, none of them reported as fig tree pest from fig orchards in Turkey (Akşit et al., 2003, 2005; Gencer et al., 2005).

Percentages of collected material according to localities were different (Table 3) and the 55,10% of specimens were collected in Ortaköy. In orchards in Dereli and Central province 2 followed it with the rates of 20,41 and 12,24 %, respectively.

Collection period of species according to weeks and months in 2016 were given in figure 1. Material belonging to seven species were trapped in April and May and the species of *Rhaphigaster nebulosa* collected at the end of August.

LITERATURE CITED

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Table 1. Localities, altitudes and coordinates of fig orchards in Tire province of Turkey.

Localities	Altitudes (m)	Coordinates
Central province 1	91	38.077424 N / 27.676327 E
Central province 2	93	38.085638 N / 27.690763 E
Dereli	294	38.087183 N / 27.840090 E
Başköy	365	37.993109 N / 27.650724 E
Akyurt	447	38.008129 N / 27.626728 E
Ortaköy	473	38.012014 N / 27.675825 E

Table 2. Number of collected specimens according to trap type.

Species	Number of specimens		
	Bait traps with wine	Bait traps with fig	Total
ALYDIDAE			
<i>Camptopus lateralis</i> (Germar, 1817)	1	0	1
REDUVIIDAE			
<i>Rhynocoris iracundus</i> (Poda, 1761)	2	0	2
<i>Rhynocoris punctiventris</i> (H.-S., 1846)	1	0	1
PENTATOMIDAE			
<i>Nezara viridula</i> (Linnaeus, 1758)	1	0	1
<i>Rhaphigaster nebulosa</i> (Poda, 1761)	1	3	4
<i>Eurydema ornata</i> (Linnaeus, 1758)	2	0	2
COREIDAE			
<i>Haploprocta sulcicornis</i> (Fabricius, 1794)	0	1	1
<i>Syromastus rhombeus</i> (Linnaeus, 1767)	0	1	1
LYGAEIDAE			
<i>Spilostethus pandurus</i> (Scopoli, 1763)	1	0	1
<i>Lygaeus equestris</i> (Linnaeus, 1758)	1	0	1
MIRIDAE			
<i>Calacoris nemoralis</i> (Fabricius, 1787)	5	0	5
<i>Closterotomus annuluus</i> Brullé, 1832)	77	1	78
Total	92	6	98
Rate (%)	93,88	6,12	100,00
Number of species	10	4	12

Table 3. Number of collected specimens according to localities.

Orchards /Altitudes	Central province 1 (91 m.)	Central province 2 (93 m.)	Dereli (294 m.)	Başköy (365 m.)	Akyurt (447 m.)	Ortaköy (473 m.)	Total
ALYDIDAE							
<i>Camptopus lateralis</i>	1	0	0	0	0	0	1
REDUVIIDAE							
<i>Rhynocoris iracundus</i>	0	0	0	0	0	2	2
<i>Rhynocoris punctiventris</i>	0	0	0	0	0	1	1
PENTATOMIDAE							
<i>Nezara viridula</i>	0	1	0	0	0	0	1
<i>Rhaphigaster nebulosa</i>	0	1	3	0	0	0	4
<i>Eurydema ornata</i>	0	0	0	1	1	0	2
COREIDAE							
<i>Haploprocta sulcicornis</i>	0	0	0	0	1	0	1
<i>Syromastus rhombeus</i>	0	0	0	1	0	0	1
LYGAEIDAE							
<i>Spilostethus pandurus</i>	0	0	1	0	0	0	1
<i>Lygaeus equestris</i>	0	0	0	1	0	0	1
MIRIDAE							
<i>Calacoris nemoralis</i>	0	2	1	1	0	1	5
<i>Closterotomus annuluus</i>	0	8	15	4	1	50	78
Total number of specimens	1	12	20	8	3	54	98
Number of species	1	4	4	5	3	4	12
Rate of specimens (%)	1,02	12,24	20,41	8,16	3,06	55,10	100,00

<i>Camptopus lateralis</i>								■											
<i>Rhynocoris iracundus</i>			■																
<i>Rhynocoris punctiventris</i>													■						
<i>Nezara viridula</i>									■										
<i>Rhaphigaster nebulosa</i>									■									■	
<i>Eurydema ornata</i>										■				■					
<i>Haploprocta sulcicornis</i>																			
<i>Syromastus rhombeus</i>	■	■																	
<i>Spilostethus pandurus</i>								■											
<i>Lygaeus equestris</i>																		■	
<i>Calacoris nemoralis</i>			■	■	■			■											
<i>Closterotomus annulus</i>			■	■	■	■	■	■						■					
Weeks	1 5	1 6	1 7	1 8	1 9	2 0	2 1	2 2	2 3	2 4	2 5	2 6	2 7	2 8	2 9	3 0	3 1	3 2	3 3
Months	April			May					June				July			August			

Figure 1. Collection period of material according to weeks and months in 2016.