

## THE PREDATORS AND THE PARASITIDS INSECTS IN THE COLONIES OF APHIDS (HOMOPTERA:APHIDIDAE) DELETERIOUS TO THE FRUIT TREES FROM VASLUI COUNTY

BY

ELENA FERARU<sup>1</sup> AND GHEORGHE MUSTAȚĂ<sup>1</sup>

**Key words:** aphids, entomophagous, parasitoids, hyperparasitoids, predators.

During the year 2003, we have analyzed the entomophagous complex which affects the colonies of 8 aphid species frequently deleterious to the fruit trees from the mixed orchards situated in the private gardens from some regions of Vaslui County. A number of 25 predator insect species were identified, belonging to 8 families, together with 6 species of parasitoid insects from the family Aphidiidae. For each deleterious or parasitoid species that has been identified, the species of aphids are mentioned, together with the corresponding fruit trees which are the medium for the extract probes. The collection date and place are also being specified.

### Introduction

The purpose of this paper is to evidence the biological relations settled by the species of aphids, frequently deleterious to the fruit trees with other species of insects. The relations between aphids and a wide variety of other species are very complex. These are: prey-predators and host-parasitoids. The predators and parasitoids are parasited by other species from other systematic categories.

### Material and methods

The biological material was collected in the summer of 2003 from the colonies of 8 species of aphids which are frequently deleterious to the fruit trees: *Aphis pomi* de Geer, *Brachycaudus cardui* Linne, *Brachycaudus helichrysi* Kaltenbach, *Dysaphis plantaginea* Passerini, *Hyalopterus pruni* Geoffroy, *Myzus persicae* Sulzer, and *Phorodon humuli* Schrank. The samples were collected from 5 types of fruit trees: apple tree, pear tree, plum tree, cherry tree, and peach tree; the trees used were situated in private gardens in which a chemical control with pesticides was never made. The predator insects were collected directly or were obtained in laboratory conditions from pupae, while the parasitoids were obtained from mummies present on deleterious leaves and offshoots. The analysis was centered on 401 predator individuals obtained from 84 probes and on 98 parasitoid individuals obtained from 15 probes.

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<sup>1</sup> „Al.I. Cuza” University of Iași

## Results and discussions

### Predator insects

#### Family Coccinellidae

1. *Adalia bipunctata* L: 28 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Munteni; 20.06 Banca, Bogdănești; 4.07 Murgeni; 10.07 Buhăiești) and pear trees (9.06 Vaslui), *Brachycaudus cardui*, developing on plum trees (9.06 Vaslui; 20.06 Banca; 4.07 Hoceni) and peach trees (20.06 Bogdănești), *B. helichrysi*, developing on plum trees (4.07 Murgeni), *Hyalopterus pruni*, developing on plum trees (9.06 Solești, Vaslui; 20.06 Bârlad; 10.07 Buhăiești), *Myzus cerasi*, developing on cherry trees (20.06 Bogdănești; 10.07 Puiești), *Myzus persicae*, developing on plum trees (9.06 Crasna; 20.06 Banca; 4.07 Murgeni; 10.07 Puiești), cherry trees (20.06 Banca) and peach trees (10.07 Puiești), and *Phorodon humuli*, developing on plum trees (9.06 Munteni; 20.06 Bârlad, Bogdănești).

2. *Adalia decimpunctata* L: 11 individuals from colonies of: *Aphis pomi* developing on apple trees (20.06 Banca, Bogdănești), *Dysaphis plantaginea*, developing on apple trees (9.06 Munteni; 4.07 Hoceni) and *Myzus persicae*, developing on plum trees (20.06 Bogdănești; 10.07 Buhăiești), peach trees (20.06 Bârlad) and cherry trees (10.07 Puiești).

3. *Adonia variegata* Goeze: 13 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Solești, Crasna; 20.06 Bârlad, Banca; 4.07 Murgeni) and pear trees (9.06 Solești; 20.06 Banca; 10.07 Buhăiești, Puiești), and *Dysaphis plantaginea*, developing on apple trees (9.06 Munteni).

4. *Calvia quatuordecimguttata* L: 9 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Vaslui, Munteni, Crasna; 20.06 Bârlad, Bogdănești; 4.07 Murgeni) and pear trees (10.07 Buhăiești, Puiești), and *Dysaphis plantaginea*, developing on apple trees (20.06 Banca, Bogdănești).

5. *Coccinella septempunctata* L: 32 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Munteni; 20.06 Banca, Bogdănești), *Dysaphis plantaginea*, developing on apple trees (10.07 Buhăiești), *Brachycaudus cardui*, developing on plum trees (9.06 Munteni; 20.06 Banca; 4.07 Murgeni) and peach trees (4.07 Hoceni; 10.07 Puiești), *B. helichrysi*, developing on plum trees (20.06 Bogdănești), *Hyalopterus pruni*, developing on plum trees (9.06 Crasna, Solești, Vaslui; 20.06 Banca, Bârlad, Bogdănești; 4.07 Murgeni), *Myzus cerasi*, developing on cherry trees (20.06 Banca; 10.07 Puiești), *Myzus persicae*, developing on plum trees (20.06 Bârlad; 4.07 Hoceni; 10.07 Puiești) and peach trees (9.06 Solești; 20.06 Banca, Bogdănești), and *Phorodon humuli*, developing on plum trees (10.07 Buhăiești, Puiești).

6. *Exochomus quadripustulatus* L: 8 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Vaslui), *Dysaphis plantaginea*, developing on apple trees (9.06 Vaslui), *Hyalopterus pruni*, developing on plum trees (9.06 Crasna; 20.06 Bârlad), *Myzus persicae*, developing on plum trees (4.07 Hoceni) and peach trees (10.07 Puiești), and *Phorodon humuli*, developing on plum tree (20.06 Bârlad, Bogdănești).

**7. *Propylaea quatuordecimpunctata*** L: 26 individuals from colonies by: *Aphis pomi*, developing on apple trees (9.06 Munteni, Solești, Vaslui; 20.06 Bârlad; 4.07 Hoceni, Murgeni) and pear trees (9.06 Munteni), *Dysaphis plantaginea*, developing on apple trees (20.06 Banca), *Hyalopterus pruni*, developing on plum trees (9.06 Munteni, Solești; 20.06 Banca, Bârlad, Bogdănești; 10.07 Buhăiești), and *Phorodon humuli*, developing on plum trees (9.06 Munteni; 20.06 Bogdănești; 4.07 Hoceni, Murgeni; 10.07 Buhăiești).

**8. *Scymnus subvillosus*** Goeze: 54 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Crasna, Vaslui; 20.06 Bogdănești) and *Brachycaudus cardui*, developing on plum trees (20.06 Bogdănești; 4.07 Murgeni; 10.07 Buhăiești).

**9. *Scymnus frontalis*** F : 20 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Munteni, Vaslui; 20.06 Bogdănești; 4.07 Hoceni) and *Dysaphis plantaginea*, developing on apple trees (4.07 Hoceni, Murgeni).

**10. *Stethorus punctillum*** Weise: 6 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Vaslui), *Hyalopterus pruni*, developing on plum trees (20.06 Bogdănești), *Myzus cerasi*, developing on cherry trees (20.06 Bogdănești), and *Myzus persicae*, developing on plum trees (20.06 Bogdănești; 4.07 Murgeni) and peach trees (10.07 Puiești).

**11. *Synharmonia conglobata*** L: 9 individuals, developing on colonies of: *Brachycaudus cardui*, developing on plum trees (9.06 Munteni; 20.06 Banca, Bârlad) and peach trees (10.07 Buhăiești), *B helichrysi*, developing on plum trees (4.07 Murgeni), *Hyalopterus pruni*, developing on plum trees (9.06 Crasna; 20.06 Bogdănești; 4.07 Hoceni), and *Phorodon humuli*, developing on plum trees (4.07 Murgeni).

#### **Family Syrphidae**

**12. *Episyrphus balteatus*** DeGeer: 21 individuals part of colonies of: *Aphis pomi*, developing on apple trees (9.06 Solești, Vaslui; 20.06 Banca, Bogdănești), *Hyalopterus pruni*, developing on plum trees (9.06 Munteni; 20.06 Bârlad, Bogdănești; 4.07 Hoceni) and *Brachycaudus cardui*, developing on plum trees (9.06 Crasna; 20.06 Bogdănești), *Myzus cerasi*, developing on cherry trees (20.06 Banca; 4.07 Murgeni; 20.07 Puiești), and *Myzus persicae*, developing on plum trees (9.06 Munteni; 20.06 Banca, Bârlad; 4.07 Hoceni) and peach trees (10.07 Puiești).

**13. *Paragus albifrons*** Fall.: 14 individuals developing on colonies of: *Aphis pomi*, developing on apple trees (9.06 Vaslui; 20.06 Bârlad, Bogdănești; 4.07 Hoceni) and pear trees (20.06 Banca, Bârlad, Bogdănești), and *Brachycaudus helichrysi*, developing on peach trees (4.07 Hoceni).

**14. *Sphaerophoria scripta*** L: 12 individuals from colonies of: *Hyalopterus pruni*, developing on plum trees (9.06 Munteni, Vaslui; 20.06 Banca, Bârlad, Bogdănești) and *Phorodon humuli*, developing on plum trees (20.06 Bogdănești; 4.07 Hoceni, Murgeni).

**15. *Syrphus braueri*** Egger: 2 individuals from colonies of: *Myzus persicae*, developing on peach trees (9.06 Vaslui) and plum trees (9.06 Vaslui).

**16. *Syrphus ribesii* L:** 18 individuals from colonies of: *Brachycaudus cardui*, developing on peach trees (9.06 Munteni; 10.07 Puiești), *Hyalopterus pruni*, developing on plum trees (9.06 Crasna, Solești, Vaslui; 20.06 Banca, Bogdănești; 4.07 Hoceni), and *Phorodon humuli*, developing on plum trees (20.06 Bârlad, Bogdănești; 4.07 Hoceni, Murgeni; 10.07 Buhăiești, Puiești).

**The parasitoids of the Syrphidae developing on colonies of the aphids.**

**Family Ichneumonidae**

***Diplazon laetatorius* F:** 7 individuals obtained from *Sphaerophoria scripta* from colonies of *Hyalopterus pruni*, developing on plum trees (9.06 Munteni, Vaslui).

**Family Encyrtidae**

***Bothriothorax aralius* Walk.:** 9 individuals obtained from *Episyrphus balteatus* from colonies of *Myzus persicae*, developing on peach trees (10.07 Puiești).

The species is new for Romania's fauna.

**Family Pteromalidae**

***Pachyneuron grande* Thomas:** 12 individuals obtained from *Episyrphus balteatus* from colonies of *Hyalopterus pruni* and *Brachycaudus cardui*, developing on plum trees (20.07 Bogdănești) and *Syrphus ribesii* on colonies of *Hyalopterus pruni* and *Phorodon humuli* developing on plum trees (20.07 Bogdănești).

**Family Chrysopidae**

**17. *Chrysopa (Chrysoperla) carnea* Steph.:** 7 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Vaslui), *Hyalopterus pruni*, developing on plum trees (9.06 Crasna, Vaslui; 20.06 Bârlad, Bogdănești; 4.07 Hoceni), and *Phorodon humuli*, developing on plum trees (10.07 Buhăiești).

**18. *Chrysopa formosa* Brauer:** 5 individuals from colonies of: *Brachycaudus cardui*, developing on plum trees (9.06 Munteni), *Hyalopterus pruni*, developing on plum trees (20.06 Banca, Bogdănești; 4.07 Hoceni), and *Phorodon humuli* developing on plum trees (20.06 Bârlad).

**19. *Chrysopa septempunctata* Wesm.:** 2 individuals from colonies of: *Hyalopterus pruni*, developing on plum trees (20.06 Bogdănești).

**Family Chamaemyiidae**

**20. *Leucopis melanopus* Tanas.:** 77 individuals from colonies of: *Aphis pomi* developing on apple trees (9.06 Crasna, Munteni, Solești, Vaslui; 20.06 Bârlad, Bogdănești; 4.07 Murgeni; 10.07 Buhăiești), *Brachycaudus cardui*, developing on plum trees (9.06 Vaslui), and *Phorodon humuli*, developing on plum trees (20.06 Bogdănești).

**Family Cecidomyiidae**

**21. *Aphidoletes aphidomyza* Rond.:** 8 individuals from colonies of: *Aphis pomi*, developing on apple trees (9.06 Solești, Vaslui; 20.06 Banca, Bârlad; 4.07 Hoceni, Murgeni).

**Family Forficulidae**

**22. *Forficula auricularia* L:** 5 individuals from colonies of: *Myzus cerasi*, developing on cherry trees (20.06 Bogdănești; 4.07 Hoceni, Murgeni; 10.07 Puiești) and *Myzus persicae*, developing on cherry trees (20.06 Bogdănești).

**Family Anthocoridae**

23. *Anthocoris nemoralis* F: 5 individuals from colonies of: *Hyalopterus pruni*, developing on plum trees (9.06 Crasna, Vaslui; 20.06 Bârlad, Bogdănești) and *Phorodon humuli*, developing on plum trees (20.06 Bogdănești).

24. *Anthocoris nemorum* L: 2 individuals from colonies of: *Myzus persicae*, developing on cherry trees (20.06 Bogdănești) and *Myzus cerasi*, developing on cherry trees (20.06 Bogdănești).

**Family Cantharidae**

25. *Cantharis livida* L: 7 individuals from colonies of: *Brachycaudus cardui*, developing on plum trees (9.06 Crasna; 10.07 Puiești), *Hyalopterus pruni*, developing on plum trees (20.06 Banca, Bârlad), and *Phorodon humuli*, developing on plum trees (4.07 Hoceni; 10.07 Puiești).

**Parasitoids insects**

**Family Aphidiidae**

1. *Aphidius ervi* Hal.: 8 individuals obtained from mummies collected from colonies of: *Aphis pomi*, developing on apple trees (9.06 Vaslui) and *Myzus persicae*, developing on peach trees (9.06 Vaslui).

2. *Diaeretiella rapae* Mc Intosh: 24 individuals obtained from mummies collected from colonies of: *Aphis pomi*, developing on apple trees (20.06 Bogdănești), *Brachycaudus cardui*, developing on peach trees (10.07 Puiești), and *Myzus persicae*, developing on peach trees (10.07 Puiești). *Diaeretiella rapae* had been parasited by *Aphidencyrthus aphidivorus* (8 individuals, *Myzus persicae*, 10.07 Puiești) and *Pachyneuron aphidis* (3 individuals, *Myzus persicae*, 10.07 Puiești).

3. *Ephedrus persicae* Froggatt: 26 individuals obtained from mummies collected from colonies of: *Aphis pomi*, developing on apple trees (4.07 Hoceni), *Hyalopterus pruni*, developing on plum trees (4.07 Hoceni, Murgeni; 10.07 Buhăiești). *Ephedrus persicae* had been parasited by *Charips melanogaster* (3 individuals, 4.07 Murgeni), *Ch. leunisii* (5 individuals, 10.07 Buhăiești) and *Ch. minutus* (4 individuals, 10.07 Buhăiești).

4. *Ephedrus plagiator* Nees: 6 individuals obtained from mummies collected from colonies of: *Hyalopterus pruni*, developing on plum trees (9.06 Crasna).

5. *Lysiphlebus fabarum* Marshall: 30 individuals obtained from mummies collected from colonies of: *Aphis pomi*, developing on apple trees (20.06 Bârlad) and *Hyalopterus pruni*, developing on plum trees (20.06 Bogdănești; 4.07 Murgeni). *Lysiphlebus fabarum* had been parasited by *Ch. arcuatus* (3 individuals, 20.06 Bogdănești) and *Aphidencyrthus aphidivorus* (7 individuals, 20.06 Bogdănești).

6. *Trioxys angelicae* Hal.: 4 individuals obtained from mummies collected from colonies of: *Hyalopterus pruni*, developing on plum trees (9.06 Munteni).

### Conclusions

This paper presents the entomophagous that control the advance of 8 species of aphids frequently found deleterious for the fruit trees growing in some regions of the county of Vaslui. *Leucopis melanopus* Tanas. and *Scymnus subvillosus* Goeze are the most abundant (A%) species found in aphid colonies; the most frequent species found (F%) are *Coccinella septempunctata* L., followed by *Adalia bipunctata* L., *Leucopis melanopus* Tanas. and *Scymnus subvillosus* Goeze, species considered to be eudominant (D5); *Coccinella septempunctata* L., *Adalia bipunctata* L., *Episyrphus balteatus* DeGeer and *Propylaea quatuordecimpunctata* L. are species considered to be dominant (D4) into aphid colonies developing on the fruit trees. Characteristic for these biocoenosis (W%) are *Coccinella septempunctata* L., *Adalia bipunctata* L., *Leucopis melanopus* Tanas. and *Propylaea quatuordecimpunctata* L. *Coccinella septempunctata* L. and *Adalia bipunctata* L. are the only accessory species (C2), the rest being accidentals (C1) (table 1). The most frequent predators have been found in the colonies of *Aphis pomi*, species developing colonies on apple trees, and in the colonies of *Hyalopterus pruni*, species developing colonies on plum trees. *Aphidius ervi*, *Diaeretiella rapae*, *Ephedrus persicae*, *E. plagiator*, *Lysiphlebus fabarum* and *Trioxys angelicae* act as primary parasitoids. *Charips melanogaster*, *Ch. leunisii*, *Ch. minutus*, *Ch. arcuatus*, *Aphidencyrthus aphidivorus* și *Pachyneuron aphidis* act as secondary parasitoids.

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The predators and the parasitoids insects (...)

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Table 1 The sinecological analysis of the predators insects

Predators	A	A%	D	F%	C	W%	W
<i>Adalia bipunctata</i>	28	6.98	D4	30.95	C2	8.66	W4
<i>Adalia decimpunctata</i>	11	2.74	D3	9.52	C1	1.04	W3
<i>Adonia variegata</i>	13	3.24	D3	11.90	C1	1.54	W3
<i>Anthocoris nemoralis</i>	5	1.24	D2	5.95	C1	0.29	W2
<i>Anthocoris nemorum</i>	2	0.49	D1	2.38	C1	0.04	W1
<i>Aphidoletes aphidomyza</i>	8	1.99	D2	7.14	C1	0.57	W2
<i>Calvia quatuordecimguttata</i>	9	2.24	D3	11.90	C1	1.07	W3
<i>Cantharis livida</i>	7	1.74	D2	7.14	C1	0.5	W2
<i>Chrysopa carnea</i>	7	1.74	D2	8.33	C1	0.58	W2
<i>Chrysopa formosa</i>	5	1.24	D2	5.95	C1	0.29	W2
<i>Chrysopa septempunctata</i>	2	0.49	D1	1.19	C1	0.02	W1
<i>Coccinella septempunctata</i>	32	7.98	D4	32.14	C2	10.28	W5
<i>Episyrphus balteatus</i>	21	5.23	D4	21.42	C1	4.5	W3
<i>Exochomus quadripustulatus</i>	8	1.99	D2	9.52	C1	0.76	W2
<i>Forficula auricularia</i>	5	1.24	D2	5.95	C1	0.29	W2
<i>Leucopis melanopus</i>	77	19.20	D5	11.90	C1	9.16	W4
<i>Paragus albifrons</i>	14	3.49	D3	9.52	C1	1.33	W3
<i>Propylaea quatuordecimpunctata</i>	26	6.48	D4	22.61	C1	5.88	W4
<i>Scymnus frontalis</i>	20	4.98	D3	7.14	C1	1.42	W3
<i>Scymnus subvillosus</i>	54	13.46	D5	7.14	C1	3.85	W3
<i>Sphaerophoria scripta</i>	12	2.99	D3	9.52	C1	1.14	W3
<i>Stethorus punctillum</i>	6	1.49	D2	7.14	C1	0.42	W2
<i>Synharmonia conglobata</i>	9	2.24	D3	10.71	C1	0.96	W2
<i>Syrphus braueri</i>	2	0.49	D1	2.38	C1	0.04	W1
<i>Syrphus ribesii</i>	18	4.48	D3	16.66	C1	3	W3

**Table 2 The sinecological analysis of the parasitoids insects.**

<b>Parasitoids</b>	<b>A</b>	<b>A%</b>	<b>D</b>	<b>F%</b>	<b>C</b>	<b>W%</b>	<b>W</b>
Aphidius ervi	8	8.16	D4	13.33	C1	1.08	W2
Diaeretiella rapae	24	24.48	D5	20	C1	4.89	W2
Ephedrus persicae	26	26.53	D5	26.66	C2	7.07	W4
Ephedrus plagiator	6	6.12	D4	6.66	C1	0.40	W2
Lysiphlebus fabarum	30	30.61	D5	20	C1	6.12	W4
Trioxys angelicae	4	4.08	D3	6.66	C1	0.27	W2



**Table 3 The percentage presentation of the coenotical affinity index Jaccard ( $q=(c/a+b-c)*100$ ) for the predators insects in the colonies of the aphids from the fruit trees**

Specii	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
1. Adabip	6.25	5.88	9.09	20.45	13.33	15.38	3.22	6.66	6.66	6.06	15.78	3.03	9.67	0	11.11	6.45	3.33	0	20	6.66	6.89	10.71	3.70	3.22
2. Adadec		5.88	5.88	6.06	0	0	7.69	7.69	7.69	0	8.33	6.66	0	0	0	0	0	0	5.88	7.69	0	0	0	0
3. Adovar			33.33	4.77	0	11.53	6.66	0	0	0	7.69	12.5	0	0	0	0	0	0	25	33.33	0	0	0	0
4. Calqua				5.71	5.88	20.83	20.07	20.07	6.66	0	7.69	20	0	0	0	6.25	0	0	42.85	23.07	0	0	0	0
5. Cocsep					9.37	12.19	6.45	6.42	3.12	12.5	15.38	2.94	12.90	0	24.24	17.24	10.34	3.70	5.71	3.12	3.22	14.28	0	10
6. Exoqua						12.5	7.69	7.69	7.69	6.25	13.04	6.66	14.28	0	10.34	25	18.18	0	12.5	7.69	0	30	0	7.69
7. Proqua							4.16	13.63	8.69	7.69	14.28	12.5	35	0	22.22	18.18	9.06	5.26	26.08	25	0	14.28	0	13.63
8. Scysub								14.28	9.09	0	14.28	16.66	0	0	0	8.33	0	0	23.07	9.09	0	0	0	0
9. Scyfro									9.09	0	9.06	27.27	0	0	0	8.33	0	0	23.07	20	0	0	0	0
10. Stepun										7.14	14.28	7.69	7.69	0	5.26	18.18	10	16.66	6.66	9.06	10	10	14.28	0
11. Syncon											8	0	13.33	0	21.05	20.07	27.27	11.11	0	0	0	16.66	0	0
12. Epibal												8.33	13.04	0	6.66	19.04	9.25	5.55	12	14.28	9.52	9.52	0	0
13. Paralb													0	0	0	7.14	0	0	20	7.27	0	0	0	0
14. Sphscr														0	37.5	25	18.18	12.5	5.88	0	0	44.44	0	27.27
15. Syrbra															0	0	0	0	0	0	0	0	0	0
16. Syrrib																40	23.52	7.14	4.34	0	0	26.66	0	17.64
17. Chrcar																	20	14.28	3.84	8.33	0	50	0	8.33
18. Chrfor																		20	0	0	0	11.11	0	10

Specii	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
19. Chrsep																			0	0	0	20	0	0
20. Leumel																				23.07	0	7.14	0	0
21. Aphaph																					0	0	0	0
22. Foraur																						0	25	0
23. Antnem																							0	10
24. Antnemo																								0
25. Canliv																								

**Table 4 The evidence of the nourish relations between predators and the aphids from a few fruit trees**

Predators \ Aphids	<i>Aphis pomi</i>		<i>Dysaphis plantaginea</i>	<i>Brachycaudus cardui</i>		<i>B. helichrysi</i>		<i>Hyalopterus pruni</i>	<i>Myzus cerasi</i>	<i>Myzus persicae</i>			<i>Phorodon humuli</i>
	apple tree	pear tree	apple tree	plum tree	peach tree	plum tree	peach tree	plum tree	cherry tree	plum tree	cherry tree	peach tree	plum tree
<i>Adalia bipunctata</i>	*	*		*	*	*		*	*	*	*	*	*
<i>Adalia decimpunctata</i>	*		*							*	*	*	
<i>Adonia variegata</i>	*	*	*										
<i>Calvia quatuordecimguttata</i>	*	*	*										
<i>Coccinella septempunctata</i>	*		*	*	*	*		*	*	*		*	*
<i>Exochomus quadripustulatus</i>	*		*					*		*		*	*
<i>Propylaea quatuordecimpunctata</i>	*	*	*					*					*
<i>Scymnus subvillosus</i>	*			*									
<i>Scymnus frontalis</i>	*		*										
<i>Stethorus punctillum</i>	*							*	*	*		*	
<i>Synharmonia conglobata</i>				*	*	*		*					*
<i>Episyrphus balteatus</i>	*			*				*	*	*		*	

Predators \ Aphids	<i>Aphis pomi</i>		<i>Dysaphis plantaginea</i>	<i>Brachycaudus cardui</i>		<i>B. helichrysi</i>		<i>Hyalopterus pruni</i>	<i>Myzus cerasi</i>	<i>Myzus persicae</i>			<i>Phorodon humuli</i>
	apple tree	pear tree	apple tree	plum tree	peach tree	plum tree	peach tree	plum tree	cherry tree	plum tree	cherry tree	peach tree	plum tree
<i>Paragus albifrons</i>	*	*					*						
<i>Sphaerophoria scripta</i>								*					*
<i>Syrphus braueri</i>										*		*	
<i>Syrphus ribesii</i>					*			*					*
<i>Chrysopa carnea</i>	*							*					*
<i>Chrysopa formosa</i>				*				*					*
<i>Chrysopa septempunctata</i>								*					
<i>Leucopis melanopus</i>	*			*									*
<i>Aphidoletes aphidomyza</i>	*												
<i>Forficula auricularia</i>									*		*		
<i>Anthocoris nemoralis</i>								*					*
<i>Anthocoris nemorum</i>									*		*		
<i>Cantharis livida</i>				*				*					*