

**NOTES ON PITFALL TRAP COLLECTED
TENEBRIONIDAE (COLEOPTERA) SPECIES IN
ORGANIC VINEYARD AND ORCHARDS OF KEMALPAŞA
(İZMİR) PROVINCE OF WESTERN TURKEY**

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ABSTRACT: In this study, information is given on six species (*Dailognatha quadricollis* (Brullé, 1832), *Gonocephalum pusillum* (Fabricius, 1791), *Pimelia verruculifera* Solier, 1836, *Opatroides punctulatus* Brullé, 1832, *Opatrum sabulosum* (Linnaeus, 1761) and *Zophosis punctata* Brullé, 1832) belonging to Tenebrionidae (Coleoptera) family collected by pitfall traps from ecological vineyard and plum, pear and peach orchards in Kemalpaşa (İzmir) province of Western Turkey. Among those *D. quadricollis* is more abundant than the others.

KEY WORDS: Organic agriculture, Tenebrionidae, Fauna, Pitfall Trap.

To prevent the side effects of conventional agriculture to human health and environment, organic or ecological agriculture applications have been initiated all over the world. In the last two decades, its' importance improved in Turkey and the application of some ecological production methods has been studied in production areas of Western Turkey. This area has a special importance in production of agricultural crops namely grapes (*Vitis vinifera* Linnaeus, 1758), plums (*Prunus domestica* Linnaeus, 1753), pears (*Pyrus communis* Linnaeus, 1758) and peaches [*Prunus persica* (Linnaeus) Batsch, 1801].

Generally, there is not detailed information on agrobiodiversity of such areas in Turkey. In order to supply an additional information (Tezcan et al., 2000; Anlaş et al., 2004; Mercan et al., 2004) in this field, material belonging to Tenebrionidae (Coleoptera) fauna collected in ecological vineyard (*V. vinifera*) and plum (*P. domestica*), pear (*P. communis*) and peach (*P. persica*) orchards in Kemalpaşa (İzmir) province of Western Turkey were evaluated and given in this paper.

MATERIAL AND METHODS

This study was conducted in ecological vineyard (*V. vinifera*) and plum (*P. domestica*), pear (*P. communis*) and peach (*P. persica*) orchards in Kemalpaşa (İzmir) province of Western Turkey during the months of June-October in 2007. Tenebrionid beetles were collected by pitfall traps and the traps cleared at two weeks' intervals. Pitfall traps consisted of 150 ml cups buried in the soil in such a

way that the lip of the trap was at ground level. They were half filled with ethylen glycol and water mixture as 1:1 ratio. Material were determined by the fourth author following Reitter (1892, 1900, 1903) and Penrith & Penrith (1983) and were housed in LEMT (Lodos Entomological Museum, Turkey), Plant Protection Department, Faculty of Agriculture, Ege University, İzmir, Turkey.

RESULTS

Dailognatha quadricollis (Brullé, 1832)

Material examined: *Vitis vinifera*: 19.vi.2007, 65 exs., 29.vi.2007, 167 exs., 19.vii.2007, 74 exs., 30.vii.2007, 28 exs., 14.viii.2007, 37 exs., 31.viii.2007, 32 exs., 14.ix.2007, 6 exs., 05.x.2007, 3 exs.; *Prunus domestica*: 19.vi.2007, 25 exs., 29.vi.2007, 34 exs., 30.vii.2007, 8 exs., 14.viii.2007, 67 exs., 31.viii.2007, 66 exs., 14.ix.2007, 9 exs., 05.x.2007, 10 exs.; *Prunus persica*: 19.vi.2007, 31 exs., 29.vi.2007, 19 exs., 19.vii.2007, 60 exs., 30.vii.2007, 24 exs., 14.viii.2007, 35 exs., 31.viii.2007, 18 exs., 14.ix.2007, 16 exs.; *Pyrus communis*: 19.vi.2007, 2 exs., 29.vi.2007, 122 exs., 19.vii.2007, 93 exs., 30.vii.2007, 58 exs., 14.viii.2007, 110 exs., 31.viii.2007, 87 exs., 14.ix.2007, 9 exs., 05.x.2007, 19 exs. Totally 1334 specimens.

Gonocephalum pusillum (Fabricius, 1791)

Material examined: *V. vinifera*: 19.vi.2007, 1 ex., 19.vii.2007, 2 exs.; *P. domestica*: 19.vi.2007, 8 exs.; *P. persica*: 19.vi.2007, 79 exs., 29.vi.2007, 17 exs., 19.vii.2007, 21 exs., 30.vii.2007, 1 ex., 14.viii.2007, 1 ex.; *P. communis*: 19.vi.2007, 3 exs., 29.vi.2007, 3 exs., 19.vii.2007, 1 ex. Totally 137 specimens.

Pimelia verruculifera Solier, 1836

Material examined: *V. vinifera*: 19.vi.2007, 2 exs., 29.vi.2007, 1 ex., 19.vii.2007, 1 ex.; *P. domestica*: 19.vi.2007, 9 exs., 29.vi.2007, 1 ex. Totally 14 specimens.

Opatroides punctulatus Brullé, 1832

Material examined: *V. vinifera*: 19.vii.2007, 2 exs.; *P. domestica*: 31.viii.2007, 1 ex.; *P. persica*: 19.vii.2007, 1 ex. Totally 4 specimens.

Opatrum sabulosum (Linnaeus, 1761)

Material examined: *V. vinifera*: 14.ix.2007, 1 ex., 05.x.2007, 1 ex. Totally 2 specimens.

Zophosis punctata Brullé, 1832

Material examined: *V. vinifera*: 31.viii.2007, 1 ex. Totally 1 specimen.

DISCUSSION

The dominant species in the collected material was *D. quadricollis* (1334 caught individuals) and the relative abundance of this species is 89,41%. *G. pusillum* (137), *P. verruculifera* (14), *O. punctulatus* (4), *O. sabulosum* (2) and *Z. punctata* (1) followed by the relative abundances of 9,18; 0,94; 0,27; 0,13; 0,07 percent, respectively. Among those *D. quadricollis*, *G. pusillum*, *O. punctulatus* and *O. sabulosum* were reported from organic cherry orchards by Tezcan et al. (2000).

In organic vineyard the number of recorded species was six (*D. quadricollis*, *G. pusillum*, *P. verruculifera*, *O. punctulatus*, *O. sabulosum*, *Z. punctata*), in plum orchard four (*D. quadricollis*, *G. pusillum*, *P. verruculifera*, *O. punctulatus*), in peach orchard three (*D. quadricollis*, *G. pusillum*, *O. punctulatus*), in pear orchard two (*D. quadricollis*, *G. pusillum*).

424 specimens (28,42%) were recorded in organic vineyard as well as 507 specimens (33,98%) from pear orchard, 323 specimens (21,65%) from peach orchard and 238 specimens (15,95%) from plum orchard.

In the following studies, it is hoped that further studies on the feeding habits of species and their roles in organic vineyards and orchards will be realised.

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