

SUMMARY

Field surveys were conducted for a period of 3 years (2016–2018) in Poznań city, including 2 gardens and 1 park (the Dendrological Garden of the Poznań University of Life Sciences, park complex in the Experimental Station "Marcelin" of the Faculty of Horticulture and Landscape Architecture at the University of Life Sciences in Poznań, and the Zoological Garden in Poznań). The yellow Moericke traps were used in the experiment.

The aim of our work was to evaluate the occurrence of parasitoids belonging to subfamilies Aphidiinae and Pimplinae in the green areas of the city.

The hypothesis is: greenery area is an environment to live for the communities of subfamilies Aphidiinae and Pimplinae.

In total, 1882 samples were made. The results showed that 6852 specimens of Braconidae belonging to 20 subfamilies and 8492 individuals of Ichneumonidae belonging to 28 subfamilies were caught. Dominated subfamilies of Braconidae were Alysiinae ($D_5 = 49.8\%$), Aphidiinae ($D_4 = 8.8\%$), Microgastrinae ($D_4 = 8.8\%$), Euphorinae ($D_4 = 8.1\%$), and Homobinae ($D_4 = 5.7\%$). Dominated subfamilies of Ichneumonidae were: Cryptinae ($D_5 = 47.8\%$), Ichneumoninae ($D_4 = 8.1\%$), Tryphoninae ($D_4 = 8.0\%$), Orthocentrinae ($D_4 = 7.8\%$), and Campopleginae ($D_4 = 6.6\%$).

Aphidiinae is one of the dominated subfamilies of Braconidae. In total, 613 individuals (8.8%) were caught, 64 species belonging to the subfamily Aphidiinae occurred. The most frequently was *Trioxys betulae*. Species of the subfamily Aphidiinae are one of the significant biotic factors regulating the number of aphids.

One of the frequently existing subfamilies of Ichneumonidae was Pimplinae. In total, 379 (4.2%) individuals exhibited in 42 species were recorded. The most frequently was *Pimpla contemplator*. Species from Pimplinae is one of the main factors constraining the number of plant's pests belonging to the orders Lepidoptera, Coleoptera, Hymenoptera, and Diptera.

The estimators ACE, Chao1, Jack1, were used to calculate the number of species of Aphidiinae and Pimplinae. Estimator ACE was the least biased and closest to the actual data, for both Aphidiinae and Pimplinae species.

The similarity in the qualitative structure of Aphidiinae and Pimplinae communities occurred in all places. The maximum similarity value is recorded between Aphidiinae communities of Dendrological Garden and Marcelin Park (77.6%), and the highest similarity number also occurred between Pimplinae communities of Dendrological Garden and Marcelin Park (75%).

The similarity in the qualitative-quantitative structure of Aphidiinae communities between the Dendrological Garden and Zoological Garden was proved to be closer than those of Marcelin Park. The closer in the qualitative-quantitative structure of Pimplinae communities happens between the Dendrological Garden and Marcelin Park than those of Zoological Garden.