

INFLUENCE OF SAMPLING METHOD ON THE RESULTS OF ECOLOGICAL STUDIES: WHITE AND YELLOW WATER TRAPS IN THE RESEARCH OF LONG-LEGGED FLIES (DIPTERA, DOLICHOPODIDAE)

Kristaps Vilks

University of Latvia, Faculty of Biology

Address: Kronvalda Blvd. 4, Riga LV-1010, Latvia

E-mail: kristaps.vilks@lu.lv

A selection of one or another sampling method can produce different data matrices which can lead to contradictory conclusions in biodiversity research or monitoring. The main aim of this study is to evaluate and compare the efficiency of both yellow and white water traps for the purpose of dolichopodid sampling. It is important to know whether both survey methods lead to similar trends in the results of study. A fieldwork was carried out in a highly heterogenous mosaic of boreal coastal grasslands along Lielupe river in the central part of Latvia during May-August 2011. Flies were sampled by means of pairs of white and yellow plastic cups which were placed directly on the soil surface in five habitat types including dry and wet meadows and more or less frequently inundated reedbeds. In total, 60 samples were collected, and 2151 flies belonging to 44 species were caught. All dominant species were sampled by both yellow and white water traps. The average number of species and individuals showed similar trends among studied habitats for both sampling methods. However, yellow water traps yielded slightly more species and individuals in dry grasslands. In general, dolichopodid community structure and species composition were similar for both sampling methods. However, the use of yellow water traps allowed more clearly to detect differences in species composition among studied habitats. In conclusion, this study shows that yellow water traps are a slightly more efficient than white traps, but statistically significant differences were not found. Further, it can be concluded that it is possible to compare published data of dolichopodid ecology which are based on sampling with yellow and white water traps.