INFLUENCE OF SOIL FAUNA ON PROCESSES OF MINERALIZATION AND HUMIFICATION OF ORGANIC MATTER

S u m m a r y

The paper presents results of investigations done in forest and grassland soils on: 1) the density control, 2) changes in soil fauna and soil processes as a consequence of management (NPK fertilizing, fen drainage) and 3) results of the field experiments on the influence of soil fauna on organic matter mineralization and storage in soil. Ad. 1. In the first decade, mainly interactions among predatory macroarthropods were studied. The results showed that the mobility of populations is a regulatory factor of the density and production of soil communities, and that activity-density of particular trophic groups reflects precisely their successional trends in ecosystems. The competition for food is the most important in soil communities. The dominant species, belonging as a rule to the group of eurytopic species play the main role as the regulating factor in the community. The impact of these species on the density and mobility of other community components is more important than changes in environmental conditions. Ad 2. The studies on the influence of management on ecosystems were included in the broad programmes in which many specialists from varied scientific disciplines (pedology, plant and animal ecology, climatology) were involved. The result points to the decrease in the species diversity and to the diminishing size of organisms as important effects of management intensification. Ad 3. Field exclusion experiments were carried out in mesocosms to analyse the role of epigeic, mobile macroarthropod predators in decomposition processes. The results suggest that predators reduced the numbers of mainly fungivorous mesofauna. As a consequence proportions between bacteria and fungi were changed, one of the possible consequences is the higher organic matter storage in the mesocosms accessible for predators.