

# RÓŻNORODNOŚĆ MIKROORGANIZMÓW GLEBOWYCH W ŚWIETLE BADAŃ MOLEKULARNYCH

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1. Wstęp. 2. Dyskusja wokół poznania różnorodności mikroorganizmów. 3. Wybór sposobu badania różnorodności mikroorganizmów. 4. Metody dające ogólny obraz różnorodności mikroorganizmów. 5. Sekwencje fragmentów DNA a różnorodność mikroflory. 6. Analizy fingerprintowe zespołu mikroorganizmów. 7. Podsumowanie

## **Diversity of soil microorganisms on the base of molecular studies**

*Abstract:* Recent progress in molecular methods and their application has increased our knowledge of microbial diversity, not only from a phylogenetic and taxonomic perspective but also from an ecological basis. Measures of microbial diversity in soil include multiple methods integrating holistic measures at the total community level and partial approaches targeting structural or functional subsets. This review presents some of the major molecular methods that can be used to describe microbial diversity in soil more precisely than traditional cultivation methods do. New methods allowed finding dramatically different spectrum of microorganisms that exist in different soils compared to the known pattern obtained due to cultivation. Several new lineages of prokaryotes have been detected in soil, many of them comprising only ryboclones or phylotypes. In addition, microbial lineages such as *Proteobacteria*, *Actinobacteria*, *Verrucomicrobia* and *Planctomycetes* are represented by high number of non-culturable organisms in soil. It is conceivable that polyphasic approach based on both molecular and cultivation level provides a more complete picture of microbial diversity and a deeper understanding of the interactions in soil microbial ecosystems.

1. Introduction. 2. Discussion on the knowledge of microbial diversity. 3. Selection of approach to study microbial diversity. 4. Methods presenting general picture of microbial diversity. 5. Sequences of DNA fragments and micro flora diversity. 6. Fingerprinting analyses of microbial community. 7. Summary

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