

## CHARACTERIZATION OF MICROBIAL CONSORTIUM ISOLATED FROM LANDFILL SOIL POLLUTED WITH POLYETHYLENE

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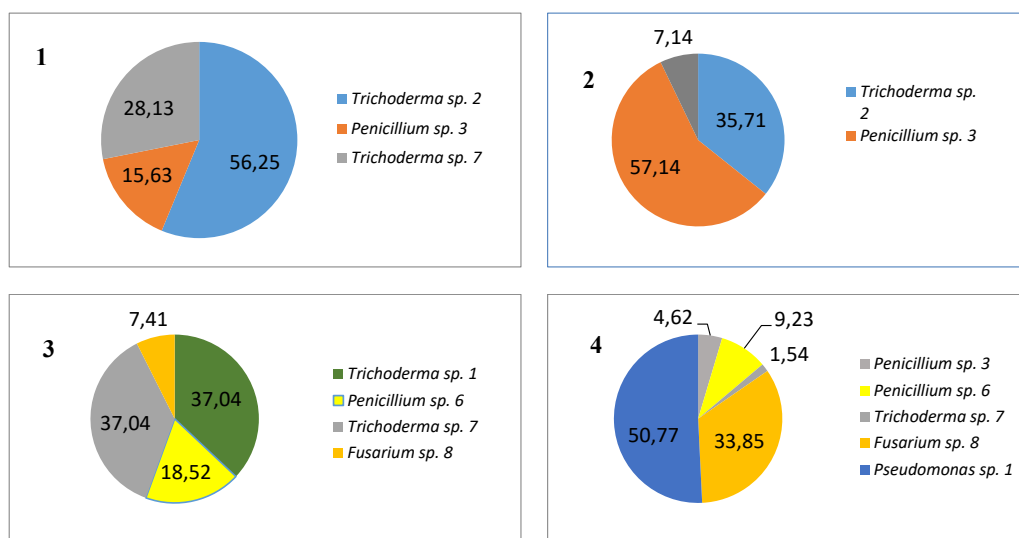
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It is well known that large quantities of non-recyclable plastic, namely low-density polyethylene (LDPE), represent a major pollution problem in the environment, thus a solution would be its degradation through the adhesion and accumulation of microorganisms' consortia on the polyethylene surface. The microbial complexes that are involved in the decomposition of non-recyclable plastic were created in the polluted soil collected from the landfill situated near Slobozia-Dusca village. Consortia of microorganisms isolated from soil LDPE-treated under the aerobic conditions were inoculated into the liquid mineral salt media MSM 2 and MSM 4 to obtain enrichment cultures. MSM 2 medium was favoring the growth of micromycetes and MSM 4 medium – the growth of bacteria. Four microbial consortia were obtained.



**Figure 1.** Composition of consortia isolated from soil treated with LDPE under aerobic conditions.

Analyzing the consortia of microorganisms obtained, which includes mycelial fungi and bacteria, we observed that the fungi are predominant, for the most part representatives of the *Trichoderma* spp., *Penicillium* spp., and *Fusarium* spp., while for bacteria only the genus *Pseudomonas* spp. was identified (fig. 1). The results demonstrate that after 100 days of cultivation, the microorganisms in the consortia retain their viability, the titer being from  $7.00 \times 10^6$  CFU/mL to  $26.00 \times 10^6$  UFC/mL.

In conclusion, that complexes of microorganisms isolated from polluted soil treated with LDPE can use plastic as a potential source of carbon and/or energy.

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