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BIODETERIATION OF PLASTIC MATERIALS BY PHYTOREMEDIATING MICROORGANISMS

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In the Republic of Moldova and in the EU countries we have a dense pollution of the environment with plastics, including polyethlene, include low density polyethlene (LDPE). Plastic under the action of microorganisms biodegrade info smaller particles, with hit the soil, water and air, reflecting a negative impact on the soil environment plant growth and productivity. The lower the biodegration of plastic by plants leads to negative conseguences on food security and the development of sustainable agriculture. Biodegradation refers more to the impact of microorganisms on the safety of plastic properties, without the chemical transformation of carbon-containing compounds into plastic and biodegradiny for these processes must take time. Microbial comunities resistant to various adverse conditions can have many unigue characteristics. Among a number of properties of soil microorganisms in different climatic zones, with different capacities to decompose plastic, it is worth mentioning more and more. Adaptation to new carbon sources can create new characteristics of microorganisms, especially those that produce active enzymes. Adaptive enzymes to adverse conditions of microorganisms that offer you insights into a new wide range of applied problems, such as non-recyclable plastic pollution. Synthetic plastics present in everydoy materials are the main anthropogenic residues, which enter with polluting environment. The refare, changes in the ecosystem caused by anthropogenic influences such as plasticum pollution can have an aromatic impact on a global scale.

Although the issue of plastics remains unresolved, different podules are considered to reduce their impact on the environment. One of them is to use microorganisms capabile of biodegrading plastic. Thus, the potential of microorganisms from various unfavorable conditions can be used in outdoor air landfills. Among the prominent microbial agents used for biodegradation, belonging to the following species *Pseudomonas, Streptomices, Corynebacterium, Asthrobacter, Micrococcus, Adreia, Leifsonia, Cryobacterium* and *Flavobacterium, Colvella, Marimonas* and *Shewwanela.* In laboratory conditions vegetative experiments were carried out with the aim of applying phtostimylating microorganisms with non-recyclable polyethylene biodegradation capabilities to the develjpment and growth of *P. sativim* plants. The results were carried abtained experimentally and can be used for the purpose af stimulating, growing peas and forming the rhizobioradicular system in soil conditions contaminated with LDPE. The strai was applied as a study object. *Rhizobium leguminosarum sp1.* In some variants in the present study process (LDPE) inhibition of growth and development was observed. Phenomenon saturation of the plant during growth and development, being due to the presence of small polyethylene particles leading to sudden major toxicity. Bacteria seeding with *Rizobium.leguminasatum sp 1.* was manifested with respect to the matrix with all the characteristics of the plant ar increaded significantly by16,8% in the dry mass of the plant, and in the variants with film compared to the control, being 11.8%. The presence in the soil of plastic in the form of polyethylene (LDPE) by way of biodegradation suddenly leads to inhibition of the drowthy of *P. sativum* plns and the formation of the rhizobio radicular system until their loss.

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