1. Project title

Fungi degrading plastics: selection and evaluating of their activity

2. Proposer

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4. Key words
(Max. 5 – at least 2)

Fungi; soil; plastic bioremediation; enzymatic activity; toxicity

5. Abstract
(Max.1.500 characters with spaces)

Synthetic plastics are among the most persistent pollutants in soil and aquatic environments. Polyethylene, polypropylene, polystyrene, polyester polyurethane (PU), polyvinylchloride (PVC), polyethylene terephthalate (PET), polytetraflouroethylene (PTFE), nylon and polycarbonate are the most common and difficult to be degraded. The global market of such kind of plastic material grows continuously. Despite the global efforts for recycling, large amounts of mixtures of plastics and other polymers end up in landfills and contaminate the environment where they persist and become toxic for the whole food chain. Novel approaches are needed and should be applied for the sustainable biological degradation of mixtures of recalcitrant plastics.

The present research project would contribute in studying the fungal ability to attack recalcitrant materials in order to develop environmentally friendly and sustainable solutions for managing the waste of plastics. The main targets of the project are selecting fungal strains able to grow on different plastic materials, evaluate their specific enzymatic activity, analysing the chemical products of plastic degradation and improving the fungal cultural condition to enhance their degradation capability of plastics.