



# INTELLIGENT VALORISATION OF AGRO-FOOD INDUSTRIAL WASTES (INTELWASTES) 2SOFT/1.2/83

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## BIODEGRADATION OF PLASTICS MATERIALS IN THE PRESENCE OF PHYTOREMEDIATING MICROORGANISMS

**Aim:** The project relates to the biodegradation of plastics materials in the presence of phytoremediating microorganisms.

One of the main current problems of the research institute is to study in laboratory conditions the phytostimulating microorganisms that can use polyethylene as a source of carbon and/ or energy. In turn, these microorganisms can be isolated, studied and used as biodegradation agents for non-recyclable plastic waste. Among the prominent microbial agents used for biodegradation, belonging to the following species *Pseudomonas*, *Bacillus*, *Streptomyces*, *Arthrobacter*, *Rhizobium*, and *Flavobacterium*.



Nodules *Rhizobium*  
*leguminosarum*

The novelty consists in the elaboration of a biotechnological process for reducing the risk of environmental pollution with plastic, based on the use of phytoremediation microorganisms for the biodegradation of non-recyclable plastic.



*Rhizobium* microorganisms have been applied to *P. sativum* and their contribution to the biodegradation of plastic has been studied.

**Field of application:** Environment-ecology, Biology, Microbiology

**NOTE:** These scientific data are obtained within the research project 20.80009.7007.03 The microbiological potential in the degradation of non-recyclable plastic waste financed by National Agency for Research and Development.

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