Microbial Degradation of the Solid waste Poly (L) Lactic acid Plastics

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The concept of biodegradable plastics is of considerable interest with respect to solid waste accumulation and greater efforts have been made in developing degradable biological materials without any environmental pollution to replace oil-based traditional plastics. In the family of biodegradable synthetic polymers, poly (lactic acid) (PLA), an aliphatic polyester and biocompatible thermoplastic, is currently the most promising and it has become the 'green' environmental friendly material with the brightest development prospect because of its facile availability, good biodegradability and good mechanical properties. However, it is very much important to study the biodegradation of PLA before it being used widely. The aim of this study was to screen diverse soil samples and to isolate microorganisms capable of degrading PLA and to investigate the biodegradability of PLA after discarding in natural conditions and also in controlled laboratory conditions.The parameters used for the monitoring of degradation include variation in Lactic acid concentration, pH, dry cell weight and residual PLA film weight. The results will be discussed.