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Study of Different Method of Plastic Waste Management in the Light of Ecosystem Balance

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Abstract: *The present study is related to different method of plastic waste management in the light of ecosystem balance. Plastic waste has become a major environmental concern, causing pollution in both land and marine ecosystems. As a result, plastic debris is accumulating in landfills and natural environments instead of decomposing. This accumulation is causing various environmental hazards and negatively impacting habitats and species distribution. To address this issue, researchers have been focusing on finding effective methods of plastic waste management that promote ecosystem balance. These methods include microbial agents and their metabolic enzymes for polymer degradation and destructive thermal treatments like combustion or pyrolysis. In addition, different countries have implemented varying waste management strategies to tackle plastic pollution. Indiscriminate use of plastics such as polyethylene causes environmental pollution and impacts human health due to irreversible changes in the ecological cycle. The future of plastic waste management research lies in the continuous innovation of recycling technologies, the development of environmentally friendly alternatives, and the integration of social and behavioural considerations in waste management strategies. By addressing these areas, research can contribute to the advancement of sustainable and effective solutions for plastic waste handling, furthering the goal of achieving ecosystem balance and minimizing environmental harm. A comprehensive assessment of plastic management strategies should consider their environmental, economic, and social implications to gauge their overall effectiveness in addressing the challenges of plastic waste. This multifaceted approach will provide a holistic understanding of the impact of plastic waste management efforts and guide future decision-making to further enhance the sustainability and effectiveness of plastic waste handling..*

Keywords: Plastic Waste Management, Ecosystem Balance, Microbial Agents