

OE4) Polystyrene Biodegradation Using *Zophobas morio*

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Abstract

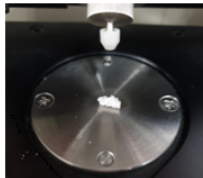
The aim of this study was to investigate changes in the weight of *Zophobas morio* larvae and mass of polystyrene foam when the larvae were fed polystyrene for 27 days. Fourier-transform infrared (FTIR) spectrometry was used to determine whether the polystyrene was broken down by the larvae. Forty *Z. morio* larvae (four replicates with 10 larvae per replicate) were reared in a chamber under controlled conditions with polystyrene foam blocks as their sole diet. The weight of the *Z. morio* larvae and mass of the polystyrene foam blocks decreased as a function of time. The average weight of the larvae and mass of the polystyrene foam blocks decreased by 16.3 and 6.5%, respectively, over the 27-day period. The FTIR spectrum of *Z. morio* larvae fed with polystyrene foam did not reveal the unique peaks associated with polystyrene. In conclusion, this study suggests the possibility of using *Z. morio* larvae as a management technology for degrading waste plastics without a negative environmental effect. Key words : FTIR spectra, plastic biodegradation, polystyrene foam, *Zophobas morio* larvae.

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→ Pellet 형태로 측정

■ Pure Polystyrene



→ ATR mode로 측정

