**PLASTIC EATING BACTERIA  
  
ABSTRACT**

The plastic-eating bacteria *Ideonella sakaiensis* has been discovered and isolated in Japan's recycling plant. In 2016 a team collected the PET contaminated soil samples from a recycling plant and identified that this bacteria consumes Polyethylene Terephthalate as its energy or carbon source. The microbes mineralize degraded PET up to 75% after assimilation by *Ideonella sakaiensis*. It is an aerobic, gram-negative, and rod-shaped bacteria. The growth of the bacteria is optimum at the pH range of 5.5 to 9.0 and a temperature of 15-42 degrees celsius. Ideonella sakaiensis creates an enzyme called PET Hydrolase or PETase to degrade the PET into (MHET) mono(2-hydroxy ethyl)terephthalic acid. However, this bacteria is not fast enough to solve the problem of pollution caused by plastic in the environment. To reduce the time of decomposition by it, the enzyme which is responsible for the decomposition of PET is called PETase, the bacteria were grown in the laboratory after isolation of it from PET contaminated soil. PETase should be isolated from it. The efficiency of the enzyme produced by this bacteria is checked by monitoring using HPLC.

First, the PET contaminated samples were collected from the plastic recycling plant. The sample was immersed into media along with PET film the bacterial growth was monitored after the production of the PETase enzyme, the enzyme was isolated from it to ensure the degradation of plastic

**KEY WORDS**

PET plastics, PETase, MHET, *Ideonella sakaiensis,* HPLC, PET film, Carbon source Media, YSV media.