


# IIT-H developing bacterial systems to treat sewage

HYDERABAD: Researchers from Indian Institute of Technology Hyderabad (IIT-H) are developing algal-bacterial hybrid systems that help treat waste water while enabling biodiesel production. The immediate intended beneficiaries of the research are gated urban communities that have in-house plants for treating sewage. The team primarily focuses on treatment of domestic sewage and its components like those originating from kitchen and laundry.

<b>AIMING FOR CLEAN WATER</b>		
<p>➤ Research to benefit gated urban communities that have in-house plants for treating sewage water</p>		
<p>➤ Team primarily focuses on domestic sewage and its components originating from the kitchen and laundry</p>	<p>➤ Decentralised treatment is essential in cities where total waste water generated have exceeded <b>75 billion</b> litres per day</p>	
<p>➤ Unavailability of central treatment system has led to sewage discharge into water bodies</p>		

Speaking about the research, Debraj Bhattacharyya, associate professor in the department of civil engineering, IIT-H, said, “Decentralised waste water treatment is essential in cities where the total waste water generated have exceeded 75 billion litres per day.”

Currently, sewage treatment facilities in the country can only treat about 26 billion litres per day. The unavailability of an extensive centralised system of waste water treatment has led to the discharge of untreated water into water bodies and land, resulting in pollution and contamination.

“One step in sewage treatment systems is aerobic biological treatment in which, microorganisms, dominated by heterotrophic bacteria, use oxygen to break down organic matter. For example, activated sludge process,” Bhattacharyya said.

While aerobic treatment converts organic matter into carbon dioxide and biomass, they have problems such as high energy use and production of too much sludge. Micro-algae have the ability to eliminate these problems.

The IIT-H team hopes its system would help rural communities in the long-run.

“An additional benefit of using algal-bacterial systems is that the algae that are grown in sewage treatment plants can, in turn, be used to produce biodiesel and other value-added by-products. If all sewage is treated in microalgae-based systems, the total algae-derived biodiesel production would cut our dependence on diesel,” Bhattacharyya said.

Source: *The Times of India*

Date: 24/12/2019