



Hi-tech bio fertilizers

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Introduction

Hitech Biofertilizers India was started in the year 2001 with the aim of creating role models for ecofriendly economical solid waste management at source. Our intention was to develop a culture of hygiene management to enable people to own up the responsibility of self reliant waste management at source. We documented all dumping grounds in Kerala from Kasargod to Trivandrum, Villappilasala. Our study proved that pollution in the urban areas is increasing day by day.

Vennala division of Cochin Corporation was selected to create a role model SWM. A peoples movement in the name of "Janakeeya Paristhiti Samrakshana Samithi (JPSS) was formed with the office bearers President, Adv. Girija, State secretary women's advocate association, Vennala Councilor of Cochin Corporation, Sri. Jose Pettah, President and Mr. Jose Joseph Moonjely, Vice President of Vyapari Vyavasayi Ekopana Samithi, Devankulangara unit, Edappally as Treasurer and Secretary.

Mr. Jose Joseph took initiative for developing an equipment which is an eco-friendly, economical and self-reliant composting of biodegradable rejections at source.

The biobins developed by us were installed at Palarivattom Bypass signal on the Vennala side of the road. Daily generated biodegradable rejections were collected from door to door from every house of Vennala division and processed the same to compost. The compost was utilized for developing organic garden on the shoulder road in a length of 300 meters. The project got attention of the media. Judges of Kerala High Court and Supreme Court commission member Mrs. Almitra Patel visited the site.

After 18 months, and a successful public demonstration we have shifted our activities to apartment complexes to encourage and enable the residents to handle their rejections at source itself.

Won best technology award from Corporation of Cochin in 2008

Description of solid waste

GUIDELINES FOR HANDLING REJECTIONS DO NOT MIX BIODEGRADABLE AND NONBIODEGRADABLE STORE SEPERATELY		
<i>BIO DEGRADABLE</i> Green bucket Process daily at source Using Bio bins/bio pits	<i>NON BIO DEGRADABLE</i> Yellow or Orange bucket Handover once in two weeks to our collecting agent	Hazardous, E-waste, medically used rejections Blue bucket
<input type="checkbox"/> All Food waste <input type="checkbox"/> Fruits & Vegetables, Fish, meat <input type="checkbox"/> Other organic waste <input type="checkbox"/> Fish waste should be kept in a separate box in the freezer <input type="checkbox"/> Avoid water content in food waste <input type="checkbox"/> De water Rice, curries like sambar, rasam, Puliserry etc. before depositing in buckets. <u>Note</u> <input type="checkbox"/> Wet waste without water will help to process better compost Dry or wet leafs or garden rejects shall deposit in pits for natural recycling	<ul style="list-style-type: none"> ● Books, News Papers, Card boards &all cartons ● Plastic bottles ● Cleaned Plastic Materials only ● Milk Cover, Fish, Meat, other food carried plastics and Aluminum food container should be cleaned ● Thermo coal, Rexin ● Leather, Shoes & Chapels ● Metal, Coconut shell ● Pack broken Glass, Bulbs and plates separately. <u>E- WASTE</u> <ul style="list-style-type: none"> ● Discarded Electronic Equipments like Mobiles, PC's, Refrigerators etc. 	<u>HAZARDOUS WASTE</u> <ul style="list-style-type: none"> □ Used Syringes, □ Chemicals, Paints, Tube lights, CFL lamps, Used Cells Handover only to licensed agencies for scientific disposal <u>MEDICAL WASTE</u> <ul style="list-style-type: none"> □ Sanitary napkins, pads, baby diapers and bto medical waste Wrap in paper and keep separately □ Used pillows, beds, Mats, Dirty News papers □ Human hair from floor/ bathroom and dust should be pack separately <u>Our advice</u> Incinerate above rejections at source or Handover to licensed agencies for eco-friendly disposal

How was it done?

The principle of “Do not mix” is followed. Three reusable containers with colour code is provided to each residence (Green for biodegradable, yellow for non-biodegradable and red for hazardous) with printed guidelines for handling daily generating rejections. Biodegradable waste is transferred to ecofriendly biobins developed by us to process all to humus compost by treating it with Aerobic Microbial Composting.

Adoption of this method by others

Timeline

- **2005** Govt. recognized Hitech Biofertilizers India as a service provider to Clean Kerala Mission.
- **2006** Demonstrations conducted to convince corporation and municipalities, the possibilities and benefits of source level composting. We have conducted demonstrations are Ernakulam Market, Changapuzha Park, Edappally, Changampuzha Nagar, Kalamassery, Aluva Market, etc. Later, we have done composting by installing biobins and applying bioculture developed by us.
- **2007** With the association of builders fraternity the challenges of SWM at Kochi were addressed. Enabled the residence associations and individual residents to handle waste generated by them, ecofriendly and economically at source. The project scaled up and the technology developed by us benefitted to 80,000 apartments in the state and also spreading to the other states.
- **2011** Apartment complexes of Trivandrum and Trichur corporation adopted this technology to address the challenges faced by them due to the closure of Vilappilasala and Laloor dumping grounds. The system is also presently operating under our direct

- supervision in 156 building complexes at Trivandrum and 75 in Trichur.
- **2012-13** The SWM system was adopted in Calicut, Kottayam cities in the apartment complexes and at TechnoPark, Trivandrum.
 - **2014** SWM manual published by MOUD ministry, Govt. of India recorded our project implemented at Cochin apartment complexes as the best role model.
 - **2015** Apartment complexes at Mumbai, Chennai and Indore adopted our system.
 - **2016** Swachh Bharat recognition: The book edited by Mrs. Mridula Sinha Hon. Governor of Goa published the article written by Mr. Jose Joseph and declared our project as the best role model SWM.
 - Empanelled agency of Suchitwa mission to prepare DPR for local self governments to submit Swachh Bharat mission for funding. Agreements signed with Guruvayoor, Kothamangalam municipalities and 8 panchayaths of Kothamangalam assembly constituency.

Conclusion - Future plan of work

Create a role model recycling park in the state for non biodegradable rejections such as plastic, waste papers, tube lights, CFL lamps and all new generation electrical and electronic waste. Hitech wishes to empower and encourage manufacturers to discharge extended producers responsibility to dispose the materials manufactured by them ecofriendly.