

# THE EM APPROACH



Maple



EM Research  
Organisation,  
Japan

Effluent, Sewage &  
Solid Waste Treatment

Maple EM.1 - ENVIRON - Solid Waste Treatment

Maple EM.1 - EFFLUCLEAN - Waste Water Treatment

Maple EM.1 - EFFLUCLEAN Plus - ETP & STP



Maple Orgtech (India) Ltd.

# THE EM APPROACH TOWARDS ENVIRONMENT

## EFFLUENT, SEWAGE, WASTE WATER AND BIO DEGRADABLE SOLID WASTE TREATMENT

Maple EM-1<sup>™</sup> (Effective Microorganisms) is a liquid concentrate made by collecting and growing natural microorganisms. Maple EM-1 converts a degraded ecosystem to one that is productive and contains useful microorganisms. Maple EM-1 is scientifically produced under local conditions, from the cultivation of multi-strained microorganisms. The microorganisms are mainly Lactobacillus, Photosynthetic bacteria and Yeast. The technology was developed at the university of Ryukus, Okinawa, Japan in the early 1980s by a distinguished professor of horticulture, Dr. Teruo Higa.

Maple EM-1 is being used in over 140 countries worldwide. Maple EM-1 is now readily available in India. It is being manufactured by Maple Orgtech (India) Ltd. at their factory in Kolkata, from microorganisms which are neither imported nor genetically engineered but collected from the natural environment. Maple orgtech india Ltd. is the sole manufactures of EM-1 in india.

Maple EM-1<sup>™</sup> has been used worldwide for more than 20 years. Its spectacular performance in curbing pollution and treatment of effluent has made it the natural choice for environmentalists, municipalities, agriculture and industry alike.

Maple EM-1 includes both aerobic and anaerobic species of micro-organisms. The microorganisms are harmless to human, animal, plant, aquatic and marine life. When Maple EM-1 is introduced to a polluted area, EM-1 microorganisms will immediately begin feeding on the organic matter and multiplying creating in the process enzymes that curb pollution.

The sludge decomposed, and the concrete bottom became visible



The sludge decomposed, and the concrete bottom became visible



Working Progress in AMC



Working Progress in New Barrackpore



Solid Waste Management in Pune Municipal Corporation



Market Waste Treatment



Spraying of AEM before segregation to control the foul odour and harmful pathogen for human beings health.



Refining or De - Compose after 60 days.



Ready to use garbage compost for all agriculture and horticulture crops. No harmful chemicals included.

# MAPLE EM-1 IN WASTE WATER AND SOLID BIODEGRADABLE WASTE TREATMENT

## BIOREMEDIATION

- Our unique combination of microbes eat up contaminants such as oil and organic matter (e.g., waste food) and convert them into carbon dioxide and water.
- These microbes consume the organic mass of the waste water and utilize the available nutrients for their growth, ultimately enhancing DO level in waste water
- The treatment can restore the water quality and also helps to reduce BOD,COD

## LAKE/POND

- Naturally breaks down organic pollutants and bottom sludge including dead decaying algae, fish waste and run off fertilizers.
- Creates clean and odour free water.
- Reduces high levels of ammonia, nitrite, nitrate and phosphates that pollutes water bodies.

## COMPOSTING

- Decompose and Converts industrial and municipal biodegradable solid waste into safe disposable waste.
- The science of composting is easily managed by our effective microbes.
- The microbes present in EM plays the first real stage of decomposition and decomposes the readily degradable sugars,proteins, starches, and fats into simpler compounds
- Faster and complete decomposition in lesser time.
- Foul odour is suppressed during composting operations leading to comfortable surroundings.

## BENEFITS OF MAPLE EM-1

- It can be used as a starter seeding material in the biological/secondary treatment
- Helps to build and maintain MLSS in the waste water treatment
- Stabilizes ETP/STP for use in biological treatment.
- EM-1 contains a blend of aerobic and facultative anaerobes that breaks down a broad range of natural and manmade organic compounds.
- Reduces BOD, COD, TSS, Oil & Grease, Total and Fecal coliform in effluent and sewage.
- structural changes are not necessary for implementing this technology and can be easily applied into an existing ETP/STP
- Microbes present in EM-1 releases many bioactive substances which helps to reduce foul odour, a problem faced by most of the treatment plants.

# MAPLE EM-1 IN WASTE WATER AND SOLID WASTE TREATMENT

## COST SAVINGS

### ELECTRICITY

After applying Maple EM-1 continuously there is a gradual build up of beneficial microorganisms in the system (ETP/STP/Lakes/Ponds) which results in effective breakdown of bio degradable matter and increase in dissolved oxygen levels. This considerably reduces aeration time while running of the plant and thus the cost of electricity is saved.

### CHEMICAL INPUT

Effective and complete breakdown of bio degradable matter reduces the need for chemicals used in coagulation, flocculation and other chemical treatment processes as compared to conventional plants.

### SLUDGE REMOVAL

With Maple EM-1 there is a reduction in sludge generation and thus sludge removal costs are reduced substantially and also conventional components which are required to settle down sludge can also be minimized.

### MAINTENANCE

Continuous use of Maple EM-1 can reduce day to day operation and maintenance cost.

### ENVIRONMENTAL PROTECTION

Maple EM-1 technology thrives in offering a sustainable and eco friendly solution to our environment so that there shall be no adverse effect on MOTHER EARTH.

SEEDING IN NEW



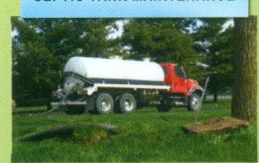
MAINTENANCE OF ETP/STP



INDUSTRIAL AND MUNICIPAL COMPOSTING



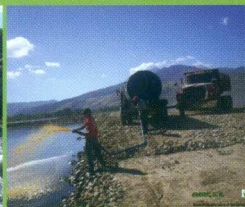
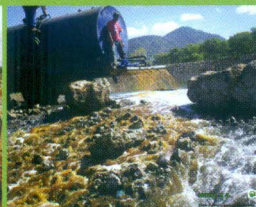
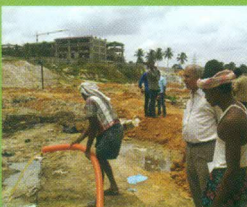
SEPTIC TANK MAINTENANCE



RESTORATION OF LAKES/PONDS

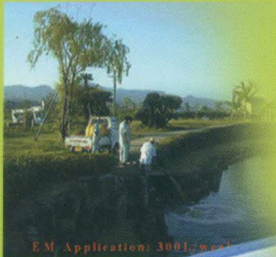


SEWAGE DRAIN TREATMENT

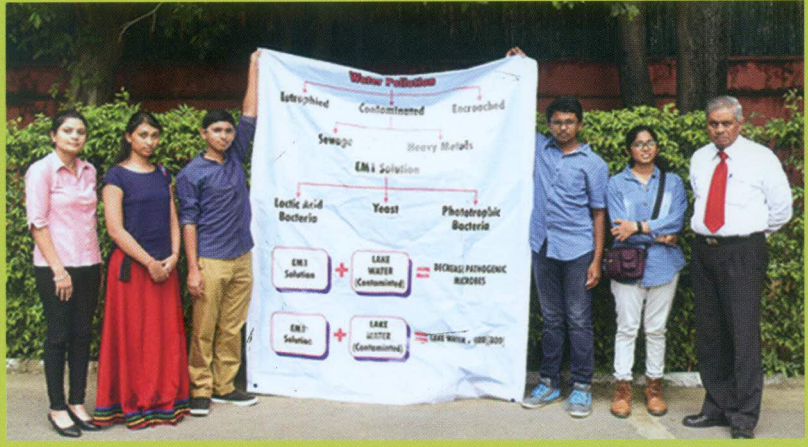
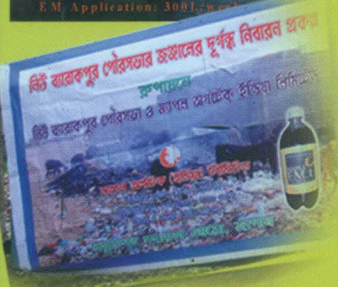


Application of EM-1 in waste water

Application of EM-1 in water body



EM Application: 2001-2002

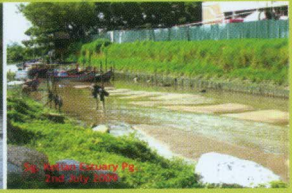


REHABILITATION OF RIVER - SG. KELIAN PENANG Malaysia 2009

- Water quality became Class 2a
- Sludge totally disappeared
- Foul odor disappeared



Sg. Kelian Estuary Pa. March 2009



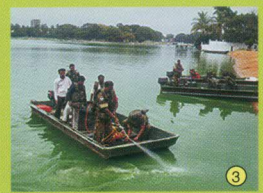
Sg. Kelian Estuary Pa. 2nd July 2009



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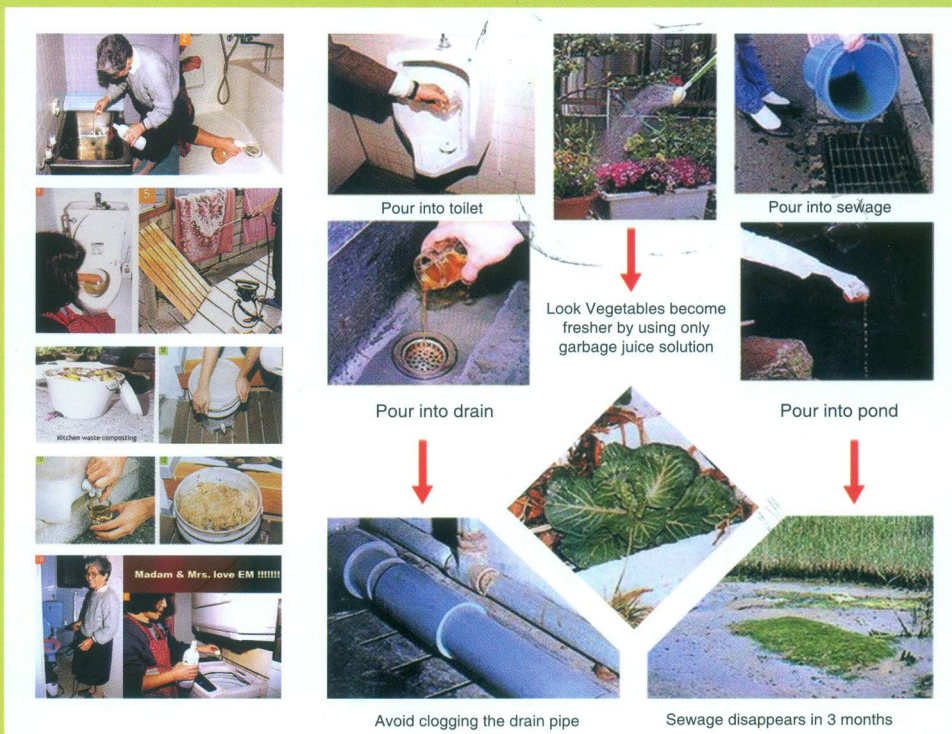


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- 1 2 Status of Ulsoor lake before Maple EM Application
- 3 MEG personnel spraying Maple EM solution in Ulsoor Lake
- 4 Application of Maple EM-1 in Ulsoor Lake by people from different section of the society
- 5 Application of Maple EM by group of activities and civic authorities
- 6 7 EM spray by the Hon.MLA & Corporation into Annayappa Lake
- 8 9 Awareness campaign Maple Channel partner along with prominent activist spraying Maple EM on MSW
- 10 EM spray by Hon.MLA Shri Krishnappa & Corporator A.Manjunath at Annayappa ward on Solid waste

# EM Application in Kitchen Waste Composting & House Hold

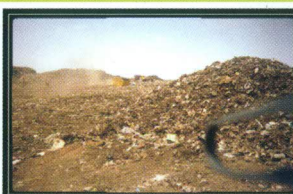
- No foul odour
- Easy treatment
- Short time Converting the garbage to high quality organic fertilizer



CM inaugurating the application of EM at Gurgaon Municipal Corporation



EM being sprayed through 5 fire brigades in Gurgaon



Garbage composting being carried out at Pune, India



Spraying EM Solution in Vietnam

**Maple Orgtech (India) Ltd.**

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