

**60 MITOYO (GIAPPONE)**

Year	2010
Client	SHINWA SANGYO Co., Ltd.
Operator	SHINWA SANGYO Co., Ltd.
System description	Mobile bio-container for composting and odour control
Waste processed	Source-separated organic waste



The core of this plant is a mobile bio-container designed for composting organic waste and treating the odours contained by the process exhaust air.



Thanks to a detailed study of the space arrangement, all equipment is installed in a commercial size container (40 foot long), which is divided into three specialized sections:

- Composting section;
- Odour treatment section;
- Electric section for process control and monitoring.

The system is based on the bio-tunnel technology, successfully used by Ecomaster Atzwanger in many composting plants of industrial scale. The process cycle includes various phases of biological treatment, from pathogens control to compost stabilization.

The composting process takes place in an enclosed vessel bio-cell with an aerated floor which uniformly distributes the process air in the reactor. Part of the air passed through the waste pile is recycled back to the reactor floor and part is exhausted through the odour control system.

The bio-cell floor includes collection system for the percolated liquid, which can be recycled to the process by means of a spraying system located above the waste pile.

The operating cycle is very simple: after loading the material into the container by means of a wheel loader, the front doors are closed and the process starts. At the end of the cycle, the bio-cell is emptied and a new composting cycle can begin.

The computerized system, complete with colour graphics, controls all equipment and maintain the process parameters within their pre-set limits. The probes and instrumentation of the system monitor the various process parameters, such as temperatures of processed material and bio-filter media, oxygen content of recycled process air, air pressure, levels of tanks, etc. For each batch, it is possible to monitor all steps of the composting cycle and record in the computer the values of the more significative process parameters.

The odour control system is based on the bio-filtration technology: the malodorous chemical compounds included in the exhausted process air are adsorbed by the superficial moisture of the bio-filter media (wood chips) and quickly eliminated.

Also the bio-filtration process is controlled by the centralized monitoring system. The waste water produced by the bio-filter is collected into a storage tank and used for wetting the filtering material.

The bio-container system is modular, because its composting and odour control units can be set up to build composting plants of any size, suitable for processing all kinds of organic waste. The system does not require the construction of expensive civil works and can be installed and put in commercial operation in a very short time.

