Bio-Nutrient Waste Management, Inc.

A Municipal Solid Waste Management Project for Compost Production for Organic Certification
COMPANY PROFILE

- Started as a home-based composting activity processing garbage from a next-door catering and restaurant commissary in a 500 sq. m. vacant lot in Lahug applying the aerobic method of composting.

- Moved to a facility adjacent to the landfill in Inayawan and started processing biodegradable wastes collected by a private firm.

- In the process of registering with the Securities and Exchange Commission and securing business permits and licenses.

- Increased the volume of its seed compost to about 250 cubic meters in a span of 14 months with a capacity to process about 100-150 cubic meters of biodegradable wastes daily.
It all started with the desire to lessen the stench of uncollected wastes from a commissary of a catering service and a chain of restaurants.
On September 23, 2011, the seed compost was mixed using rice hull and rice bran.
Fermented liquid loaded with microorganisms was added into the mixture of rice bran and rice hull. This was done at the vacant lot in Lahug, adjacent to the commissary.
Seed Compost

On October 1, 2011, the seed compost located at the vacant lot started to accept biodegradable wastes.
The size of the compost grew after a few months of feeding with biodegradable wastes from the next door commissary and from a corn chip factory.
At the Vacant Lot

The piles were split into two after a few months of feeding.
Another Pile Was Added

The piles grew in volume and were split into three piles
The Steaming Hot Piles

The piles are fed, turned/aerated and watered everyday.
The Volume Increased to 50 Cubic Meters

4 huge piles filled the paved area of the vacant lot in Lahug
The Move to Inayawan Site

The volume of our compost grew and a bigger space was needed. So, in July 2012, we took the opportunity to move the seed compost from the vacant lot in Lahug to the Inayawan site, where it is now.

We started processing biodegradable wastes collected by a private contractor.
The Piles at Inayawan
The Piles Growing in Volume Everyday
Today in the Inayawan Composting Site

7 huge piles of 18 meters long, 2 meters wide and 1 meter high totaling to about 250 cubic meters
SEGREGATION

Our crew manually segregates the wastes, biodegradable wastes (malata) from non-biodegradable wastes (dili-malata).
After segregation, the biodegradable wastes are chipped and shredded.
The piles are opened in the middle to prepare for feeding.
Municipal Biodegradable Wastes

Vegetable scraps and egg shells from business establishments are fed to the pile.
Industrial Biodegradable Wastes

Corn sludge from a corn chip processing plant
The compost piles are manually turned and aerated daily with the use of shovels and pitching forks.
The microbial activity in the pile causes the temperature to rise to about 70 degrees centigrade at the core killing most pathogens - making the compost hygienic and safe.
MOISTURE CONTROL

The moisture of the piles is maintained so when the piles are too dry they are watered and if too wet, rice hull or dried leaves and grasses are added.
Watering
As the process continues, there appear molds and fungi on the piles. They are responsible for breaking down the wastes into compost.
MATURING

The piles are set aside for 30 days to mature. It reduces to 25% from its original volume. To maintain the microorganisms alive, the piles are aerated and watered daily.
Matured Compost

Matured compost turns brown-black after about 30 days.
BLENDING

The matured compost is blended with micro nutrients coming from other waste materials to come up with a rich soil conditioner.
The final product is loaded into sacks or packed in plastics and made ready for sale.
FINISHED PRODUCT

Biodegradable Wastes turned into Soil Conditioner
PROCESS FLOW

SEGREGATION

CHIPPING and SHREDDING

FEEDING and LOADING INTO THE SEED COMPOST

TURNING / AERATION

SACKING

End Process

BLENDING

MATURING

MOISTURE CONTROL
The People Behind this Project

This project started as a hobby by a group of people with a passion to care for the earth, care for people and care for the future.

They were trained in natural farming and Permaculture which is learning to redesign one’s life based on and in partnership with nature, with nature as the teacher.
Ma. Emma A. Ramas

Certified Public Accountant
Worked for the Department of Trade and Industry, Cebu Chamber of Commerce and Industry, Province of Cebu
President of Destiny Medical Fund, Inc.
Local Representative of PUM Netherlands
Real Estate Broker
Practicing Permaculturist
Christopher Fadriga

Practicing Permaculturist
Trained in Hawaii and the Netherlands
on Plant Culture
Grower of Roses, Coffee, Tomatoes, Herbs
Consultant for Organic Farms in Visayas
and Mindanao
Landscaper
Edwin V. Ortiz

Businessman
Member of the International Solid Waste Association
Business and Civic Leader
Trained in Natural Farming
Casiano Catapang, Consultant

Graduate of Bachelor of Science in Forestry
Masters in Public Administration
Consultant, Cebu Uniting for Sustainable Water (CUSW)
Chairman for Environment, Cebu City Development Council
Practicing Permaculturist
Engr. Koji Takakura, Consultant

Environmental Engineer
Pioneered an aerobic process of breaking down biodegradable wastes
Spearheaded composting projects in Indonesia, Nepal, Bangladesh and the Philippines
Challenges

✓ Municipal wastes are not segregated. It takes time to segregate a truckload of unsegregated wastes.
✓ There are no machines available to efficiently classify wastes into biodegradable and non-biodegradable wastes. We still have to rely on the human eye for classification.
✓ The output which is the soil conditioner is not yet generally accepted by small farmers and big farm owners. Chemical inputs are still preferred because of its quick fix result in the production. Notwithstanding the fact, that in the long-term the soil is depleted of all life and an increasing quantity of chemicals is required for the same production.
✓ It is not easy to work with unsegregated wastes. They are dirty, smelly and sometimes hazardous to health.
Acknowledgment

✓ Kitakyushu International Techno-Cooperative Association (KITA)
✓ Institute for Global Environment Strategies (IGES)
✓ Japan International Cooperation Agency (JICA)
✓ Engr. Koji Takakura, Environmental Engineer
✓ ASEC Salvador Salacup, Department of Agriculture
✓ Councilor Nida Cabrera, Committee on Environment, Cebu City Council
✓ Engr. Dionisio Gualiza, Department of Public Services, Cebu City