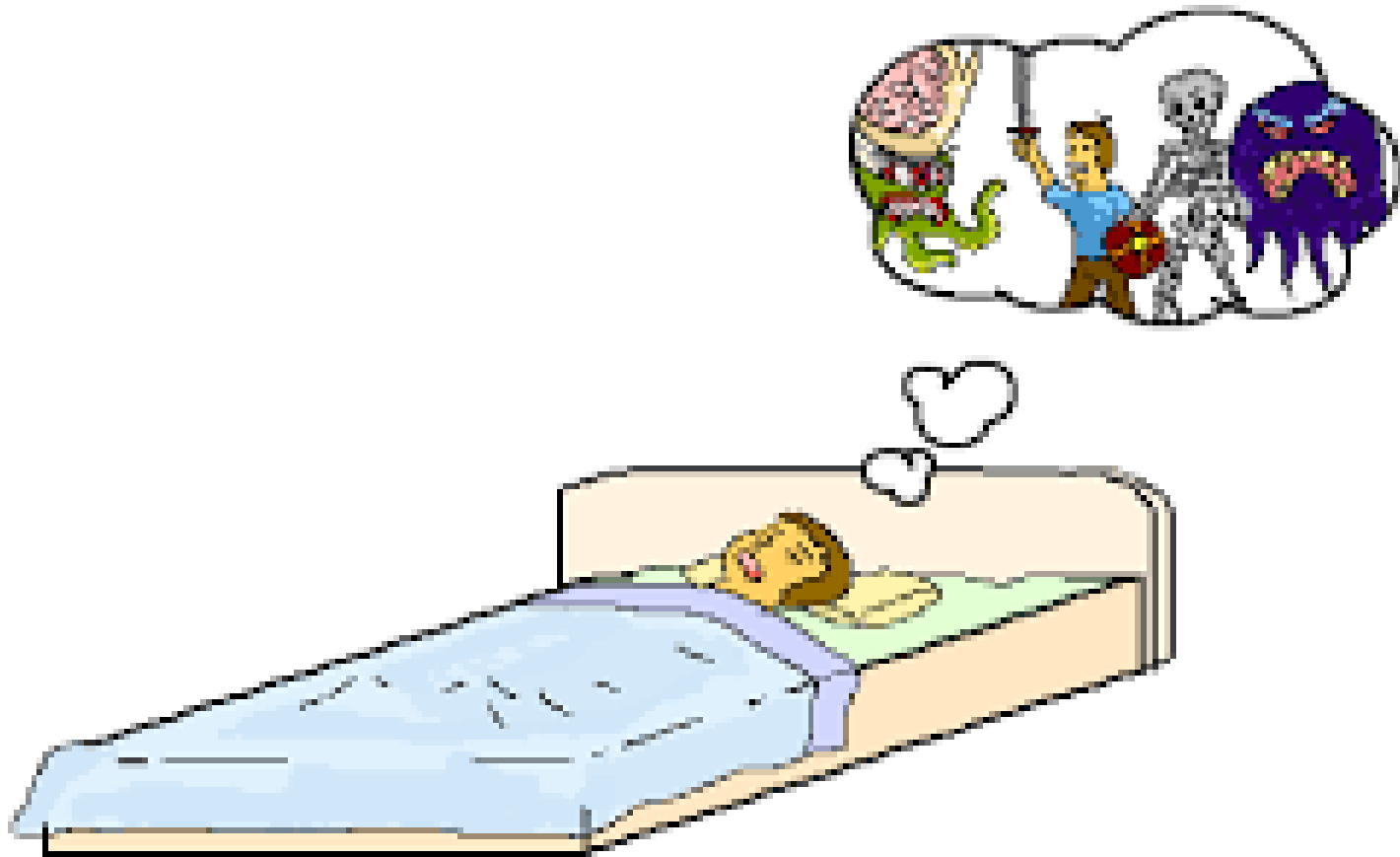


My dream of a waste – free Philippines

By: Roberto “Dr Bo” Puentespina, Jr., DVM
CEO, Davao Thermo Biotech Corp.

Dreaming as a child



Keep 'em flying



Wildlife Rescue



Wildlife Education

Brace for the impact...



**MALAGOS GARDEN'S
INTERACTIVE
BIRD SHOW**

**CLIMATE CHANGE
AND DISASTER RISK MITIGATION**

SUNDAYS AT 10 AM
UNLESS WITH PRIOR WEEKDAY BOOKING
**MALAGOS GARDEN RESORT
AMPHITHEATRE**
www.malagosbirdshow.com

MALAGOS, BAGUIO DISTRICT, DAVAO CITY. FOR INQUIRIES, CALL ☎ (082) 2216344, 2211545/ ☎ (0917) 5481867 ASK FOR DR. BO PUENTESPINA OR EMAIL ✉ dbp@malagos.com

Not all dreams are realized
But they are valuable life lessons



Philippine Eagle named “Biasong” never to fly again (Nov 2011)



Mortalities due to trash ingestion



Zoonotic Diseases of Animals transmissible to Humans



Published work on Pteropine Orthoreovirus

Arch Virol (2017) 162:1529–1539
DOI 10.1007/s00705-017-3251-2



ORIGINAL ARTICLE

First isolation and characterization of pteropine orthoreoviruses in fruit bats in the Philippines

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Abstract Pteropine orthoreovirus (PRV) causes respiratory tract illness (RTI) in humans. PRVs were isolated from throat swabs collected from 9 of 91 wild bats captured on the Mindanao Islands, The Philippines, in 2013. The nucleic acid sequence of the whole genome of each of these isolates was determined. Phylogenetic analysis based on predicted amino acid sequences indicated that the isolated PRVs were novel strains in which re-assortment events had occurred in the viral genome. Serum specimens collected from 76 of 84 bats were positive for PRV-neutralizing antibodies suggesting a high prevalence of PRV in wild bats in the Philippines. The bat-borne PRVs isolated in the Philippines were characterized in comparison to an Indonesian PRV isolate, Miyazaki-Bali/2007 strain, recovered from a human patient, revealing that the Philippine bat-borne PRVs had similar characteristics in terms of antigenicity to those of the Miyazaki-Bali/2007

strain, but with a slight difference (e.g., growth capacity *in vitro*). The impact of the Philippine bat-borne PRVs should be studied in human RTI cases in the Philippines.

Introduction

Orthoreoviruses belong to the genus *Orthoreovirus*, family *Reoviridae*, and include six species: *Mammalian orthoreovirus*, *Avian orthoreovirus*, *Reptilian orthoreovirus*, *Baboon orthoreovirus*, *Piscine orthoreovirus*, and *Nelson Bay orthoreovirus* [1]. Since pteropine orthoreovirus (PRV; Nelson Bay strain) was first isolated in 1970, 12 strains of PRV (Nelson Bay, Melaka, Pulau, Xi River, Kampar, Sikamat, HK23629/07, HK46886/09, HK50842/10, Canguyan, Indonesia/2010, and Miyazaki-Bali/2007 [PRV-MB]) have been isolated from fruit bats and humans with

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Feed People NOT Landfills



Vermi composting



Vermi composting cannot absorb the volume of trash generated



Dreaming as an Environmental Advocate and an Entrepreneur



Exclusive license to Use the YMO Technology in the Philippines



YMO Technology trial Malagos 2014



Hyperthermophiles



A first in the Philippines,
State of the art composting facility,
in Barangay Binugao, Toril, Davao City (Aug2016)



Biodegradable Wastes abundant in our area

- Coconut Peat
- Fruit & Vegetable peelings
- Food Waste
- Cow, Goat & Hog manure
- Forage grass
- Brewery yeast
- Waste water sludge
- Fats, Oils & Grease (FOG's)
- Septic Sludge
- Water Hyacinth
- Agri Industry by products



Bio Fertilizer

Terraceuticals®

Contains Natural Micro Organisms to
Enhance and Bioremediate the Soil

100% Natural for Healthy Plant Growth



Approved

Lot No.: _____
Batch No.: _____
FPA No.: _____

15Kgs Net

Analysis of Dr Bo's Bio Fertilizer

MICROBIAL ANALYSIS	
Bacillus spp.	1.2 x 10 ⁸ CFU/g
Actinomycetes	1.6 x 10 ⁷ CFU/g
Salmonella spp.	Not Detected
E. Coli	Not Detected

Directions for Use:

• Vegetables (Pechay & Green Leafy Vegetables)

Apply 1.5 kilograms per sq. m. garden plot.
Thoroughly mix in soil. Rest for a week before planting.

• Nursery Use in Cacao

Apply 50 grams Dr. Bo's Bio Fertilizer in seedling bag at 1 month. Repeat at 3 months old cacao seedling.

• Cacao Adult Trees

Apply 1 kilogram Dr. Bo's Bio Fertilizer per cacao tree. Repeat every 4 months.

• Coconut Adult Trees

Apply 4 kilograms Dr. Bo's Bio Fertilizer per coconut tree. Repeat every 4 months.

Handling:

Store in a cool dry place.

Manufactured by:



DAVAO THERMO BIOTECH CORP.

Salutillo Road, Brgy. Binugao, Toril

Davao City, Philippines

Tel. No. (082) 295-3459

Email: davaothermobitech@gmail.com

GUARANTEED ANALYSIS		
Moisture	(%)	29.0
pH ^{®1}	(-)	8.4
L.L. ^{®1}	(%)	47.7
T-N ^{®1}	(%)	2.30
P ₂ O ₅ ^{®1}	(%)	3.40
K ₂ O ^{®1}	(%)	0.19
C.O ^{®1}	(%)	23.6
Alkalinity ^{®1}	(%)	25.7
As ^{®2}	(mg/kg)	4.90
Cd ^{®2}	(mg/kg)	2.00
Hg ^{®2}	(mg/kg)	0.23
Ni ^{®2}	(mg/kg)	110.0
Cr ^{®2}	(mg/kg)	84.6
Pb ^{®2}	(mg/kg)	72.0
Cu ^{®2}	(mg/kg)	373.0
Zn ^{®2}	(mg/kg)	541.0
C/NRatio ^{®2}	(-)	11.0
Note: ^{®1} : Wet Base ^{®2} : Dry Base		



Dispose properly.

Dream On ...



Dream for Philippine Environment

- Public Health & Sanitation
- Regulatory Compliance to Envi standards
- Potent fertilizer for countryside agriculture
- Final solution for biodegradable waste
- Business opportunity in waste management
- Sustainable enterprise
- Win – Win proposition for all

Construction completed last August 2016

Main entrance to composting plant



Weighbridge beside Office



Composting plant Features

Main mixing area



Outward view from inside mixing area



Component Structure

Aerators / Blowers



Main Hallway



Composting plant features

**Mango, pineapple, banana, coco
peat and autolyzed brewery yeast**

**Capacity is 50 tons of biodegradables
per day**



Special Substrates

Coconut (fresh buko) crusher



Fats, Oils & Grease (FOG's), Food Waste, Used Oil, Livestock mortality



Special Substrates

Water Hyacinth



Water Hyacinth



Hyperthermophilic composting Process

**Composting compartments
capacity max 200 tons**

**Composting takes 45 days at
fermentation temp of 100°C**



Benefits of the hyperthermophilic composting technology

Waste Management

- Definitive solution to the biodegradable solid waste of agricultural farms, food processing industry, MSW (Ex: feathers, hair, carcasses, FOG's, septic sludge, other agri by products)
- Elimination of odor, flies, vermin & hazardous waste going into the communities.
- No need to travel far to a sanitary landfill to dispose biodegradables, means savings in hauling costs. Efficient with faster turn around time for haulers.
- Extends the life of the sanitary landfill
- **Compliance with DENR – EMB, FDA, DOH regulatory standards**

Bio Fertilizer

- Potent with NPK (8%), OM, moisture, beneficial microbes values over the organic agriculture standards
- Produced under strict quality standards.
- Easy to apply as a dry powder moisture - 30%
- Proven efficacy relative to ornamentals & other horticultural crops
- Socially responsible & sustainable



DAVAO THERMO BIOTECH CORP.

Client List

- San Miguel Brewery
- San Miguel Foods Inc
- Aboitiz Power Therma South
- Banko Sentral
- Philippine Fruits International Corp
- BF Industries
- Safepac
- Malagos Food Inc.
- Malagos Garden Resort Inc.
- Abreeza Ayala Mall
- SM
- NCCC Tagum
- City Mall Tagum
- Felcris Centrale
- Davao Convention Center
- Taps Inc.
- Mc Donald's
- Jollibee
- Brewery yeast
- **Chicken feathers**
- Septic clean out
- Used currency notes
- **Banana, Mango, Coconuts**
- Used Industrial Oil
- **Banana peelings**
- Whey
- Food Waste, FOG's, Yard waste
- FOG's
- **FOG's**
- FOG's, Vegetable / Industrial Oil
- FOG's,
- FOG's
- FOG's
- FOG's
- **FOG's**
- **FOG's**



DAVAO THERMO BIOTECH CORP.

Value Proposition

Problem: Proper Solid Waste disposal
Compliance with Regulatory laws

How big a Problem: Huge and Increasing volume

Current Solution: Landfill disposal far away with tipping fees

Our Proposition: *You will save and earn if you dispose through us, since we will be located closer to you, therefore you will save on trucking and turn around time, with less vehicles needed to haul. And we can help in DENR EMB regulatory compliance. The Fertilizer by product (option) can be used to rehabilitate destroyed ecosystems or improve agricultural productivity.*



DAVAO THERMO BIOTECH CORP.

Investment Partnership at Work

Host LGU or Private Company

- Provision of 'land' for long-term use through a lease agreement
- Work with LGU for enforcement of laws and regulations in waste disposal management

Davao Thermo Biotech Corp.

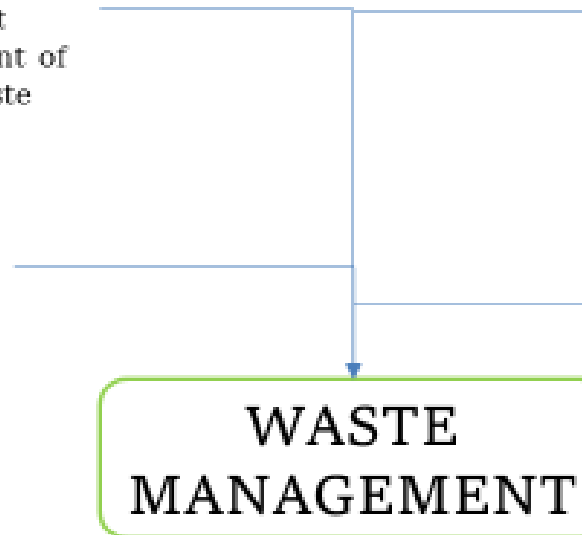
To operate an environmental management solutions enterprise with its Japanese novel technology

Investors

Infusion of capital equity of at least PhP 50 million for developmental project in waste management

Land Bank of the Philippines

lend debt financing to fund project costs



Creating Better Lives!

Let's Dream and Invest in a waste free Philippines



Thank You