

THIS TRAINING IS BROUGHT TO YOU  
BY THE MALAYSIAN WATER  
ACADEMY SDN BHD

# SUSTAINABLE TREATMENT PROGRAMME FOR PALM OIL MILL WASTE

2 JULY 2019

DAMAS SUITES & RESIDENCES

ROOM: 1 CLIVEDEN

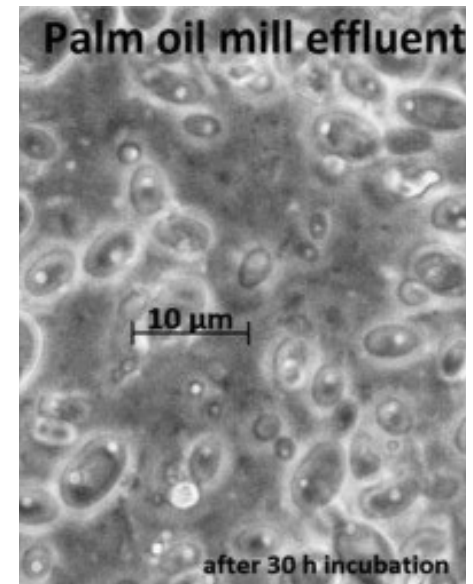
DAMAS CLUB, PLAZA DAMAS 3,  
NO. 63, JALAN SRI HARTAMAS 1,  
TAMAN SRI HARTAMAS, 50480 KL

EIMAS CPD HOURS: 6

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## INTRODUCTION

Palm oil is one of the world's most rapidly expanding equatorial crop and occupies the largest acreage. Malaysia and Indonesia are the largest palm producing countries. With the changes in economics and currency scenario the processing economics for Palm oil has been under stress with profit margins reducing. Above all the environmental as well as climatic changes and shortage of water has added further. 50% of water used for processing find it's way as POME.

Solid and liquid waste generated during the processing have significant values and can be harnessed to increase benefits as well as reduce cost of processing.

POME and EFB are considered unwanted due to several disadvantages and require to be treated before discharged and disposed. Both POME and EFB have enormous potential which need to be harnessed. Simple and efficient technologies are available to explore and harness valuables from POME and EFB.

85% of about 400 mills use Ponding System for POME and mulching for EFB, however the efficacy and sustainability are not good. There are many grey area and which need to be addressed. Long HRT and multiple ponds may give advantage for lower operating cost but sustainability to achieve <20ppm BOD is not easy.

POND biology, quality of POME and characteristics of POME are the key for sustainable treatment process to achieve safe discharge levels, Biomass generated and treated POME are key components for EFB management without mulching to produce mature compost in a 6 to 8 weeks period.

Characteristics of POME is ideal for developing Integrated Treatment Management programmes to achieve sustainable, economical and highly efficient POME treatments with ZERO discharge and benefits. Treated POME can be recycled back to mill and energy generated can be utilised reducing cost of processing. Recovered oil increase OER increasing added value to Mill.

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## OBJECTIVES

- Ponding System and it's importance in POME treatment.
- Pond Biology, types and role of Microorganisms in BOD,COD, AN removal.
- Fate of POME in Ponding system and changes observed at each stage/pond.
- Optimisation of Ponding system and operation to achieve safe discharge levels.
- BOD of treated POME <20ppm for discharge to water course as well as land.
- Management of POND solids generated during treatments.
- Develop cost effective Ponding system.
- Develop integrated POME treatment programme with recovery of Oil, POME solids and Biogas generation.
- Zero discharge with effective treatment programme whereby POME is used for conversion of shredded EFB to mature compost with < 40% moisture.
- Odour control to prevent health hazards.

## COURSE OUTLINE

The course will be focussed to highlight insight to conventional POME Managements programme, their efficacies, issues and constraint in operation, mitigation and effective management to achieve consistent discharge levels as prescribed by DOE.

Understand the values of POME organics develop integrated combined treatment programmes to harness valuable from pollutants from Palm Oil Mill. Successfully and effectively utilise Biomass generated in POME treatment to effectively ferment EFB and produce mature compost with higher fertility and soil amendment values.

## TARGET PARTICIPANTS

Executives like TQEM ( Total Quality Environment Management) and or Managers



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## PROGRAM

- 8.30 AM Registration
- 9.00 AM Introduction
- MODULE 1 : POME characteristics, nature of pollutants and their importance in treatments. Conventional Ponding system, limiting factors and problems influencing efficacy of treatment
- 10.00 AM MODULE 2 : Pond Biology, types of Microorganism and their metabolism, digestion of pollutant and growth in pond. Operational parameters for Ponding system and their influence on treatment.
- 10.45 AM Tea Break
- 11.00 AM MODULE 3 : Optimisation of Ponding system with and without Biogas generation systems. Importance of polishing plants and operations.
- 12.00 PM MODULE 4 : Trouble shooting, monitoring and optimisation of POME treatments
- 1.00 PM LUNCH
- 2.00 PM MODULE 5 : Why ?. Newer technologies and integrated combined treatment system.
- 3.00 PM MODULE 6 : Primary treatments to Recovery of Oil, Solids. Anaerobic digester system to generate Biogas/Methane and reduce BOD and COD >90%. and Biogas generation in Fixed tank system.
- 3.45 PM Tea Break
- 4.00 PM MODULE 6 : Aerobic treatment process to achieve COD<100ppm, BOD <20ppm and AN<10ppm
- 5.00 PM End of Program

## REGISTRATION FEE

Categories	MWA – Member	Non - Member
1. Normal Price	RM650.00 / pax	RM850.00 / pax
2. Early Bird <i>Early Bird Registration ends on 15 May 2019</i>	RM585.00 / pax	RM765.00 / pax
3. Group Registration 2 – 4 pax	RM615.00 / pax	RM805.00 / pax
4. Group Registration 5 – 9 pax	RM585.00 / pax	RM765.00 / pax
5. Group Registration 10 pax and above	RM550.00 / pax	RM720.00 / pax

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# REGISTER NOW!

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All MyWA Training Programmes are  
HRDF Claimable

SUBMIT REGISTRATION FORM TO:

EN. HAFIS: hafis@mwa.org.my

PN. FARAH: farah@mwa.org.my

## COMMITMENT

Registration will only be confirmed upon receipt of full payment. Program fee includes refreshments, course materials and certificate.

### Cancellation

- No cancellation & refund are allowed within five (5) working days from the date of program.
- Substitution of participant(s) is allowed with no additional charge, provided that the Malaysian Water Academy Sdn Bhd (MyWA) is notified in writing of the name & designation of the new participant(s) within five (5) days from the date of program.
- Late and unpaid registration will also be liable for full payment of the registration fee.

### Date protection

- Personal data is gathered in accordance with the personal data protection act 2010 (act 709)

### Disclaimer

MyWA reserves the right to change the venue and facilitator, and to reschedule or cancel the course whenever deemed necessary. We shall inform participants of any changes that may arise. MyWA also reserves the right to make alternative arrangements without prior notice should it be necessary to do so. Upon signing the registration form, you are deemed to have read & accepted the terms & conditions.

## PARTICIPANT DETAILS

NO	NAME	IC NO	DESIGNATION	EMAIL	PHONE

### Organization Details

Organization Name & Address:

\_\_\_\_\_

Email: \_\_\_\_\_

Phone: \_\_\_\_\_

### Payment Details

Enclosed herewith my/our full payment, cheque no. \_\_\_\_\_ of  
RM \_\_\_\_\_ issued to MALAYSIAN WATER ACADEMY SDN BHD Account  
No: 277 000 23799 (Hong Leong Bank Berhad)

\_\_\_\_\_  
Authorized Signature

\_\_\_\_\_  
Date & Org. Stamp