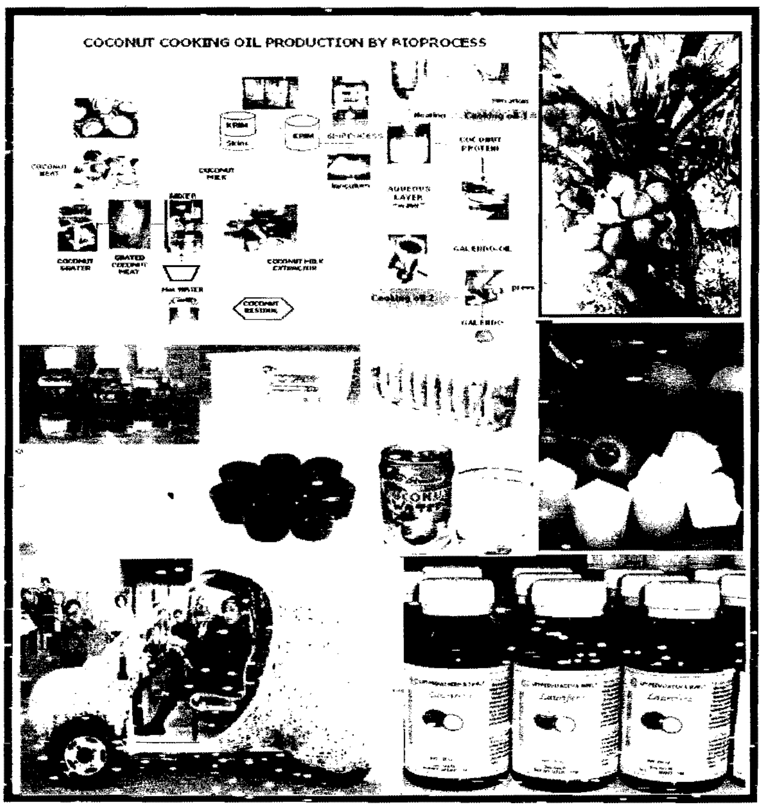
LIPI

CLEANER PRODUCTION TECHNOLOGY
FOR FOOD INDUSTRY IN ASEAN COUNTRIES

CLEANER PRODUCTION AND REGULATORY OF VIRGIN COCONUT OIL



ASEAN Committee on Science and Technology
Research Centre for Chemistry
The Japan ASEAN Exchange Program Fund
Indonesian Institute of Sciences (LIPI)

ISBN : 978-979-799-403-7

CLEANER PRODUCTION TECHNOLOGY FOR FOOD INDUSTRY IN ASEAN COUNTRIES

VOLUME 1 : CLEANER PRODUCTION AND REGULATORY OF VIRGIN COCONUT OIL

Chief Editor : *A.T. Karossi*
Co-Editors : *Leonardus B.S. Kardono*
Linar Z. Udin
Yanni Sudiyani
Haznan Abimanyu
Muhammad Romli
Edi Iswanto Wiloso
Jony Winaryo Wibowo
Assistant Editor : *Robby Wahyu Sophian*

ASEAN Committee on Science and Technology
Research Centre for Chemistry
The Japan ASEAN Exchange Program Fund
Indonesian Institute of Sciences (LIPI)

2009

PREFACE

Research Center for Chemistry – Indonesian Institute of Sciences (LIPI) organized the Training Course on Cleaner Production Technology for Virgin Coconut Oil (VCO) of Food Industry for ASEAN Countries during November 10 – 28, 2008, which was held in Jakarta, Bandung and Serpong, Tangerang, Indonesia. The main objectives of the training course are to train scientists and workers of small medium enterprises (SMEs) from ASEAN countries in the development of Cleaner Production Technology with application to the VCO industry and the environment, also to strengthen the establishment of an ASEAN environment scientific network in the field of cleaner production related to waste-water treatment, waste minimization, factory equipments optimization of VCO industry, that may further enhance joint regional R&D collaboration in the future. The training course included lectures, laboratory works, and field trips.

The training course was officially opened by Deputy Chairman of the Indonesian Institute of Sciences, while welcome addresses were delivered by the representatives of Research Centre for Chemistry, ASEAN Subcommittee on Food Science and Technology and the Organizing Committee. The training itself highlighted on the need for cleaner production for VCO industry, regulatory aspect of cleaner production technology for food industry and business plan for VCO industry in ASEAN countries. The 19 days program included lectures, laboratory practice and site visit in several VCO industries and coconut by-product processing. In the lecture sessions, participants were introduced to the practice of cleaner production in Japan and Philippine, also VCO industry in Philippine and Indonesia. The keynote speech was given by Prof. Dr. Emil Salim on business and sustainable food development form. On the last day of the training, participants gave final report presentation of business plan for cleaner production of VCO Industry in ASEAN region.

Twenty eight participants from ASEAN countries attended the training, namely 2 from Brunei Darussalam, 3 from Cambodia, 10 from Indonesia, 3 from Lao PDR, 2 from Malaysia, 2 from Myanmar, 2 from the Philippines, 1 from Thailand and 3 from Vietnam.

Overall workshop were good in terms of program, quality, facilities, and materials. Generally, the participants were satisfied with this training course and thought that the time allocated for each session was suitable.

Further collaborative activities following this training program will be based on the development of Sustainable Business of VCO-based Industry in ASEAN Countries. This further program will develop network for sharing knowledge and experiences on VCO production, collaborative research on the development of VCO product derivatives. It also will develop standards for VCO products in ASEAN region and implement and develop several potential business plans resulted from this training program.

The gathered information in this VCO training is published in 3 volumes namely : (1) Cleaner Production & Regulatory of VCO, (2) Production Delevelompent of VCO, (3) Business Plan for VCO.

Editors

CONTENTS

PREFACE i

CONTENTS iii

REGULATORY ASPECT AND CLEANER PRODUCTION IMPLEMENTATION FOR PHILIPPINE VCO INDUSTRY 1
Ronaldo P Parreno Jr

CLEANER PRODUCTION IN FOOD INDUSTRY 9
Koichi Fujie

CLEANER PRODUCTION IN JAPAN 35
Tetsuro Fujitsuka

VCO QUALITY STANDARD 39
Julia Kantasoebrata

CLEANER PRODUCTION IN THE MANUFACTURING OF49
VIRGIN COCONUT OIL
Muhammad Romli

CLEANER PRODUCTION IN THE PHILIPPINE VCO INDUSTRY: A CASE STUDY 59
Ronaldo P. Parreno Jr

GOOD HOUSEKEEPING IN VCO MANUFACTURING 69
Muhammad Romli

WASTEWATER TREATMENT IN VIRGIN COCONUT OIL (VCO) INDUSTRIES 75
Tjandra Setiadi

WASTEWATER TREATMENT IN THE PHILIPPINE VCO INDUSTRY 87
Ronaldo P. Parreno Jr

UTILIZATION OF VCO BY PRODUCTS :COCONUT PRESSED CAKE 93
Roy H. Trisnamurti and Teuku Beuna Bardant

LIST OF SPEAKERS AND PARTICIPANTS 111