

CURRENT RESEARCH PROJECTS AT PORIM : CHEMISTRY AND TECHNOLOGY



PORIM INFORMATION SERIES

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INTRODUCTION

Research at PORIM is geared towards fulfilling the needs of the Malaysian palm oil industry. This entails increasing production efficiency, improving quality and increasing the variety of uses of palm oil while improving existing uses and widening and strengthening palm oil markets throughout the world. Three main aspects are emphasised *i.e.* Biology; Chemistry, Technology and Nutrition; and Techno-Economic Studies and Technical Advisory Services.

Currently, a total of 107 research projects are being carried out and these projects are listed in three separate PORIM Information Series.

PROJECT NO. TITLE

CT 178/89	Determination of Pesticide Residues in Palm Oil and Palm Oil Products
CT 189/89	Adsorption and Desorption of Chemicals by Tank Coatings and Related Studies
CT 190/89	Diglycerides in Palm Oil
CT 210/91	Characteristics and Compositions of Malaysian Palm Kernel Stearin, Palm Kernel Olein and Related Products

Physics and Chemistry

CT 177/89	Mineral Oil Contamination of Palm Kernel Oil
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CT 201/91	LASER Studies on the Effects of Chlorophyll and its Derivatives on the Oxidative Stability of Palm Oil
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CT 202/90	Studies on the Physico-Chemical Properties of Palm Oil
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CT 211/91	X-Ray Diffraction Study on Polymorphism of Palm Oil Crystallisation
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CT 245/93	Viscosity of Palm Oil and Palm Oil Products
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Food Uses

CT 207/90	Processing and Formulation of Low-fat Spread
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CT 209/90	Study of Fat Bloom on Chocolate Bar
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CT 213/91	Cold Stability of Blends of Double Fractionated Palm Olein with Soya bean, Corn, Sunflower, Cotton-seed and Canola Oils.
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CT 214/91	Optimisation of Palm Oil Shortening in White Pan Bread
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CT 222/91	The Effect of Silicone on Quality of Palm Oil During Deep Frying of Instant Noodle
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CT 224/92	Microencapsulated Palm-Based Products
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CT 227/92	Usage of Palm and Palm Kernel Oils in the Manufacture of Ice Cream	Nutrition	
CT 232a/92	Physical and Chemical Properties of Tallow Blends Using Palm Oil and Palm Olein Subjected to Interesterification and Non-Interesterification	CT 187/89	The Role of Free Radicals in the Properties of Palm Oil : Chemical Basis of Atherosclerosis
CT 232b/92	Comparative Evaluation of Shortening from Interesterified and Non-Interesterified Tallow Blend with Palm Oil and Palm Olein	CT 194/89	The Comparative Effects of Palm Olein and Hydrogenated Soyabean Oil on Lipid and Lipoprotein Levels in Monkeys
CT 238/93	Formulation of an Emulsion Type Vitamin Supplement Based on Palm Oil Products	CT 205/90	Dietary Saturated Fatty Acids Differ in their Ability to Influence Serum Lipids and Lipoproteins in Man
Non-Food Uses		CT 217/91	Effect of Tocotrienols Derived from Palm Oil on DMBA Induced Mammary Carcinogenesis in the Rats
CT 203/90	Utilisation of Palm-Based Products as Raw Materials in Printing Ink	Milling	
CT 215/91	Production of Palm-Based Polyols as the Main Raw Materials in the Polyurethane Industry	CT 169/88	A Study on the Colloidal Properties of Crude Palm Oil-in-Ether Emulsion
CT 216/91	Catalytic Hydrogenation of Fatty Acids and their Methyl Esters from Palm and Palm Kernel Oil	CT 195/89	Selection of Filter Cloth for the Separation of Palm Oil, Olein and Stearin
CT 220/91	Transparent/Translucent Soap Derived from Palm Oil/Palm Oil Products	CT 180/89	A Process Analysis Study on Screw Pressing
CT 225/92	Nitrogen Derivatives Based on Palm Oil and Palm Oil Products	CT 206/90	PC-Based Control System for Crude Palm Oil Clarification by Three Phase Decanter
CT 229/92	Cosmetics, Pharmaceuticals and Toiletries Section of PORIM	CT 212/91	Production of Palm Oil Based Non-Lauric Cocoa Butter Substitute
CT 230/92	End-Uses of Epoxidised Palm Oil and Palm Oil Products	CT 218/91	Application of a Steam Accumulator System for Steam Management in a Palm Oil Mill
CT 213/92	Applications of Palm Based Surfactants (with Special Reference to α -Sulphonated Methyl Esters)	CT 226/92	Development of a Palm Fruit Bunch (FFB) Cutter
CT 239/93	Comparison Studies on De-inking of Paper Printed with Palm Oil-Based Ink and Petroleum Based Ink	CT 228/92	Production of Medium Chain Triglycerides Based on Palm Kernel Oil and Its Products
		CT 241/93	Extraction of Pectin from Palm Oil Mill Products

Processing	General
CT 81/85 Pilot Plant Study of Palm Diesel Production.	<i>Food Uses Services</i>
CT 122/86 The Conversion of Crude Palm Oil and its Derivatives into Lubricants via the Metathesis Reaction.	<ol style="list-style-type: none"> 1. Margarine and shortening for Brazil. 2. Margarine for South Africa
CT 165/88 Synthesis of Palm Oil based-Glycerol Esters.	<i>Analytical Services</i>
CT 223/92 Pilot Plant Production of Deacidified and Deodorized Red Palm Oil.	<ol style="list-style-type: none"> 1. Ad-Hoc Project: Simultaneous Trace Metal Analysis in Vegetable Oils/Fats by ICP - Emission Spectrometry.
CT 235/92 Preparation and Evaluation of Ester-Based Lubricants from Palm Oil and Palm Oil Products.	<ol style="list-style-type: none"> 2. Ad-Hoc Project : Collaborative Work on Comparison between the Rancimat and the OSI Instruments for Determination of Oxidative Stability of Oils/Fats.
CT 246/93 Pilot Plant Production of Palm Oil Carotenoid Concentrate.	<ol style="list-style-type: none"> 3. Screening of Palm Kernel Cake.
CT 247/93 Studies on Minor Components other than Vitamin E and Carotenes in Palm Oil.	<ol style="list-style-type: none"> 4. Ad-Hoc Project : Frying Performance of Double Fractionated Palm Olein, Sunflower Oil : A Preliminary Study.
Technology	<ol style="list-style-type: none"> 5. Ad-Hoc Project : Polar Polymer Compounds Formation During Deep-Fat Frying of French Fries in Vegetables Oils.
CT 44/82 Studies on Minor Components with Special Reference to Vitamin E in Palm Oil, PFAD and Palm Frond.	<ol style="list-style-type: none"> 6. Ad-Hoc Project : The Effect of Gamma Irradiation from Co-60 on the Colour, Iodine Value (IV) and Slip Melting Point (SMP) of Selected Oils and Fats.
IRPA Project: Chemistry of Sterilizer Condensate and Sludge in Relation to Processing Efficiency and Oil Quality.	<i>Non-Food Services</i>
CT 219/91 Removal of Air for Efficient Separation and Better Oil Quality.	<i>Engineering</i>
CT 221/91 Using Immobilised Enzymes for Interesterification Process.	<ol style="list-style-type: none"> 1. Research and Development of a Prototype Automated Palm Oil Mill
CT 206/90 PC-Based Control System for Crude Palm Oil Clarification by Three Phase Decanter.	<ol style="list-style-type: none"> 2. Experimental Palm Oil Mill
CT 248/93 Clarification and Purification of Crude Palm Oil by Filtration Method.	<i>New Research Projects</i>
CT 248/93	<ol style="list-style-type: none"> CT 232/92 All Purpose Bakery Shortening Made from Interesterified Palm Oil Stearin/ Partially Hydrogenated Soyabean Oil for Mexico.

CT 233/92	Determination of Antioxidants and Vitamin E in Palm Oil Containing Food Products by HPLG.	Analytical	Ad-Hoc Project : Survey on Palm Kernel Cake.
CT 234/92	Production and Evaluation on the Performance of Red Palm Oil in Pilot Plant Scale (Physical and Chemical Refining).		Ad-Hoc Project : Quality Monitoring During Bulk Handling and Shipment of RBD Palm Oil from Malaysian Ports to Karachi Port Terminals.



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